Navasota River Below Lake Limestone (Segment 1209)

Comprehensive Recreational Use Attainability Analysis

Appendix 2

Field Data Sheets

1

Field Data Sheets – Basic RUAA Survey

(should be completed for each site)

Data Collectors & Contact Information:	C. Gauthier, M. Shepard, R. Thompson, L. Benavides
Date & Time: 5-28-2010 1228-1337	County Name: Robertson / Leon
Stream Name: Navasota River below lake Limestone	
Segment No. or nearest downstream Segment No.: 1209	
Description of Site: US 79 @ Navasota	

At any point during the Basic RUAA Survey it becomes apparent that primary contact recreation is clearly the use for the water body the investigator should stop conducting the UAA.

A. Stream Characteristics:

1. Check the following channel flow status that applies.

☐ dry ☐ no flow ☐ low ☒ normal ☐ high ☐ flooded

2. Check the following stream type that applies on the day of the survey:

☐ Ephemeral: A stream which flows only during or immediately after a rainfall event, and contains no refuge pools capable of sustaining a viable community of aquatic organisms.

☐ Intermittent: A stream which has a period of zero flow for at least one week during most years. Where flow records are available, a stream with a 7Q2 flow of less than 0.1 cubic feet per second is considered intermittent.

☐ Intermittent w/ perennial pools: An intermittent stream which maintains persistent pools even when flow in the stream is less than 0.1 cubic feet per second.

☒ Perennial: A stream which flows continuously throughout the year. Perennial streams have a 7Q2 equal to or greater than 0.1 cubic feet per second.

☐ Designated or unclassified tidal stream: A stream that is tidally influenced. If you checked this box, you will need to contact the Water Quality Standards Group and evaluate whether or not a bathing beach is located along the tidal stream and whether or not a bathing beach is located along the estuary, bay or Gulf water that the tidal stream flows into.

3. Streamflow

Use USGS gage data (if a gage is located at a site or within a quarter mile of a site) or use the Stream Flow (Discharge) Measurement Form and follow the procedures outlined in the most recent TCEQ Surface Water Quality Monitoring Procedures, Volume 1, RG-415. If USGS gage data is used for a site, include that information as an attachment and list the streamflow on the sampling date below. If the stream flow taken at one site is representative of the flow at another site(s), then that flow can be used as the observed flow and should be documented below. If the stream flow measured at one site is different from another site, then stream flow should be taken at both sites. ~~92.258 cfs~~ MES 26.772 cfs

4. Water Quality Data (Field Parameters)

Field parameters should be collected in accordance with the procedures outlined in the most recent TCEQ Surface Water Quality Monitoring Procedures, Volume 1.

Air Temp 28 °C Water Temp 25.7 °C Secchi 0.178 m

5. Riparian Zone (Mark dominant categories with L (Left Bank) and R (Right Bank). Bank orientation is determined by the investigator facing downstream.)

L,R Forest	___ Urban	___ Rip rap
___ Shrub dominated corridor	___ Pasture	___ Concrete
___ Herbaceous marsh	___ Row crops	Other (specify): ___
___ Mowed/maintained corridor	___ Denuded/Eroded bank	

6. Ease of bank access to the water body: ☐ Easy ☐ Moderately easy ☐ Moderately difficult ☒ Difficult

7. Please describe access opportunities or explain why the site is not easily accessible (Attach photos for documentation):

steep banks, thick vegetation, only easy access close to bridge.

8. Dominant Primary Substrate N/A

☐ Cobble ☒ Sand ☐ Silt ☐ Mud/Clay ☒ Gravel ☐ Bedrock ☐ Rip rap ☐ Concrete

E AH QC MES

Field Data Sheets – Basic RUAA Survey

Stream Name Navasota River below lake limestone Site: 1
Date: 5-28-2010 Time: 1228-1337

B. Primary Contact Water Recreation Evaluation:
- Primary contact recreation draft definition: Water recreation activities, such as wading by children, swimming, water skiing, diving, tubing, surfing, and whitewater kayaking, canoeing, and rafting, involving a significant risk of ingestion of water.

1. Were water recreation activities that involve a significant risk of ingestion (full body immersion) observed at this site?
☐ Yes ☒ No primary contact recreation activities were observed
a. Check the following boxes of primary contact recreation activities observed at the time of the sampling event at the site (Attach photos of the activities or lack of activities).

☐ Wading-Children	☐ Tubing	☒ No primary contact activities that commonly occur were observed
☐ Wading-Adults	☐ Surfing	
☐ Swimming	☐ Whitewater-kayaking, canoeing, rafting	
☐ Water skiing	☐ Other: _____	
☐ Diving	☐ frequent public swimming-created by publicly owned land or commercial operations	

b. Check the number of individuals observed at the site: ☒ None ☐ 1-10 ☐ 11-20 ☐ 20-50 ☐ greater than 50

c. Check the following that apply regarding the individuals proximity to the water body.
☐ Water in mouth or nose of the individual ☐ Primary touch: Individual's body (or portion) immersed in water
☐ Secondary touch: fishing, pets and related contact with water ☐ Individual is in a boat touching water
☐ Individual is on shore near water within 8 meters (25ft) of water ☐ Individual is well away from water between 8 and 30 meters (100 ft) ☒ Not applicable

2. If primary contact recreation activities are not observed, describe the physical characteristics of the water body that may hinder the frequency of primary contact (depth, etc.) (Attach photos, etc. for documentation).
deep water in some areas

3. Describe if there is public access (e.g. parks, roads, etc.) (Attach photos, maps, etc. for documentation).
unpaved two-track drive adjacent to bridge

4. Is an area with primary contact recreation activities or a bathing beach (e.g. state/local parks with swimming, etc.) located near (e.g. within 5 miles upstream and downstream) this site? No

C. Secondary Contact Water Recreation Evaluation:
- Secondary contact recreation 1: Water recreation activities, such as fishing, commercial and recreational boating, and limited body contact incidental to shoreline activity, not involving a significant risk of water ingestion and that commonly occur.
- Secondary contact recreation 2: Water recreation activities, such as fishing, commercial and recreational boating, and limited body contact incidental to shoreline activity, not involving a significant risk of water ingestion but that occur less frequently than for secondary contact recreation 1 due to (1) physical characteristics of the water body and/or (2) limited public access.

1. Were water recreation activities observed at the site, but the nature of the recreation does not involve a significant risk of ingestion (e.g. secondary contact recreation activities)? ☐ Yes ☒ No secondary contact recreation activities were observed
a. Check the following boxes of secondary contact recreation activities that were observed at the time of the sampling event at the site (Attach photos of activities or lack of activities).
☐ Fishing
☐ Boating-commercial, recreational
☐ Non-whitewater-kayaking, rafting, canoeing
☒ No secondary contact recreation activities were observed
☐ Other secondary contact activities: _____

Field Data Sheets – Basic RUAA Survey

Stream Name Navasota below lake Limestone Site: 1
Date: 5-28-2010 Time: 1228-1337

b. Check the number of individuals observed at the site.
X None ☐ 1-10 ☐ 11-20 ☐ 20-50 ☐ greater than 50

c. Check the following that apply regarding the individuals proximity to the water body.
☐ Secondary touch: fishing, pets and related contact with water ☐ In a boat touching water
☐ Body on shore near water within 8 meters (25ft) of water ☐ Body well away from water between 8 and 30 meters (100 ft) N/A

2. If secondary contact recreation activities are not observed, describe the physical characteristics of the water body that may hinder the frequency of secondary contact (Attach photos, etc. for documentation).
trail is rough (hard to drive without truck/ATV) · debris in water, too deep in some spots.

3. If secondary contact recreation activities are observed, how often do water recreational activities occur that do not involve a significant risk of water ingestion? ☐ frequently ☐ infrequently ~~☐ Unknown~~ NES N/A
Please describe how often the activities occur? X Unknown ☐ Never ☐ Daily ☐ Monthly ☐ Yearly

4. If infrequently, what is the reason? ☐ physical characteristics of the water body ☐ limited public access ☐ other
If other, list reasons: N/A

5. Describe the physical characteristics of the water body that hinders the frequency of secondary contact recreation (depth, etc.) (Attach photos or depth measurements, etc. for documentation).
same as above

6. Describe why there is limited public access (e.g. lack of roads, river or stream banks overgrown, etc.) (Attach photos, maps, etc. for documentation).
same as above

D. Noncontact Recreation Evaluation

Noncontact recreation applies to water bodies where recreation activities do not involve a significant risk of water ingestion, and where primary and secondary contact recreation uses do not occur because of unsafe conditions, such as barge traffic.

1. Provide site-specific information and documentation (including photographs) regarding unsafe conditions, recreation activities, and presence or absence of water recreation activities.

Field Data Sheets – Basic RUAA Survey

Stream Name Navasota below lake Limestone Site: 1
Date: 5-29-2010 FDS Page 3 of 8 Time 1220-1337

E. Stream Channel and Substantial Pools
Please check the following which best describes the river or stream: ☐ Wadeable ☒ Non-wadeable

1. Wadeable Streams
Determine whether or not the average depth at the thalweg is greater than 0.5 meters and if there are substantial pools with a depth of 1 meter or greater. Walk an approximately 300 meter reach (total) at the site and take the following measurements within the 300 meter reach. Measurements should be taken during base flow conditions (sustained or typical dry, warm-weather flows between rainfall events, excluding unusual antecedent conditions of drought or wet weather

Also, take photos facing upstream, downstream, left bank, and right bank at the 30 meters, 150 meters, and 300 meters.
Photos #s (30 meters) Upstream____ Downstream____ Left Bank ____ Right Bank____
Photos #s (150 meters) Upstream____ Downstream____ Left Bank ____ Right Bank____
Photos #s (300 meters) Upstream____ Downstream____ Left Bank ____ Right Bank____

a) Substantial pools - Measure the length of each pool (if > 10 pools only measure 10 pools), the width (at the widest point), and the deepest depth. A substantial pool is considered a pool greater than 10 meters in length for the purposes of a Basic RUAA Survey. If depth and/or width measurements were not attainable, explain why.

	Length (meters)	Width (meters)	Depth (meters)
Pool 1			
Pool 2			
Pool 3			
Pool 4			
Pool 5			
Pool 6			
Pool 7			
Pool 8			
Pool 9			
Pool 10			

b)Average depth at the thalweg –Take depth measurements approximately every 30 meters to calculate an average depth at the thalweg (at least 10 measurements needed). If depth and/or width measurements were not attainable, explain why.

Distance	Depth (meters)	
30 meters		
60 meters		
90 meters		
120 meters		
150 meters		
180 meters		
210 meters		
240 meters	2.2ft	0.67m
270 meters		
300 meters		
Average		

most of bank edges were a little shallow but got deep very quickly everywhere except at bridge & the one indicated at left spot

Field Data Sheets – Basic RUAA Survey

Stream Name Navasota River below lake Limestone Site: 4
Date: 5-28-2010 Time: 1228-1337

c) Stream width - Measure (1) the width at one point which represents the typical average width of the 300 meter reach; (2) the width at the narrowest point of the stream within the 300 meter reach; and (3) the width at the widest point of the stream within the 300 meter reach.

Measurement Type	Width (meters)
Typical Average Width of 300 meter reach	
Width at narrowest point of the stream within 300 meter reach	
Width at the widest point of the stream within 300 meter reach	

d) Is there sufficient water within a 300 meter stream reach during base flow conditions to support primary contact recreation? ☒ Yes ☐ No
COMMENTS:

2. Non-wadeable Streams
If accessible, take 10 width measurements which represent typical widths of the 300 meter reach. If the water is too deep and not accessible record the estimated average width of the water body.

Also, take photos facing upstream, downstream, left bank, and right bank at .
Photos #s (30 meters) Upstream____ Downstream____ Left Bank ✓ Right Bank____ 2 (only of crevice we cannot cross)
Photos #s (150 meters) Upstream ✓ Downstream ✓ Left Bank ✓ Right Bank ✓ 3
Photos #s (300 meters) Upstream ✓ Downstream ✓ Left Bank ✓ Right Bank ✓ 1

# Measurements	Width (meters)
1	
2	
3	
4	18
5	24.6ft / 7.49m
6	19m
7	19
8	5.1
9	20
10	29

– crevice @ ~90m
– bobber in downed tree (pic)
can in tree/debris

avg: 16.66

Field Data Sheets – Basic RUAA Survey

Stream Name Navasota river below lake limestone Site: 7
Date: 5-28-2010 Time: 1228-1337

F. Additional RUAA Information

1. Check the following activities observed over the site reach.

- ☐ Drinking or water in mouth
- ☐ Bathing
- ☐ Walking
- ☐ Jogging/running
- ☐ Bicycling
- ☐ Standing
- ☐ Sitting
- ☐ Lying down/sleeping
- ☐ Playing on shoreline
- ☐ Picnicking
- ☐ Motorcycle/ATV
- ☐ Hunting/Trapping
- ☐ Wildlife watching
- ✓ None
- ☐ Other: _____

2. Are there permanent or long-term hydrologic modifications that are constructed and operated in a way that affects the recreational uses? ☐ Yes ✗ No (If yes, please provide supporting documentation and photos.)
Comments: N/A

3. Check any channel obstructions that apply (Attach photos).

- ☐ Culverts
- ✗ Barbed wire
- ☐ Utility pipe
- ☐ Fences
- ☐ Dams
- ☐ Other (specify): along bank upstream
- ☐ Log jams
- ☐ Thick vegetation
- ☐ Rip rap
- ☐ Low bridges
- ☐ Water control structure
- ✗ None

4. Check all surrounding conditions that promote recreational activities (Attach photos of evidence or unusual items of interest).

- ☐ Campgrounds
- ☐ Playgrounds
- ✓ Rural area
- ☐ Residential
- ☐ National forests
- ☐ Urban/suburban location
- ☐ Golf Course
- ☐ Sports Field
- ☐ Stairs/walkway
- ☐ Boating access (ramps)
- ☐ Beach
- ✓ Bridge crossing
- ☐ Commercial boating
- ☐ Trails/paths (hiking/biking)
- ☐ Paved parking lot
- ☐ Unimproved parking lot
- ✓ Roads (paved/unpaved) two track access road adjacent to bridge
- ☐ Populated area
- ☐ Docks or rafts
- ☐ Commercial outfitter
- ☐ Nearby school
- ☐ Power Line Corridor
- ☐ Parks (national/city/county/state)
- ☐ Public Property
- ☐ Other: _____
- ☐ None of the Above

Comments: _____

5. Check all surrounding conditions that impede recreational activities (Attach photos of evidence or unusual items of interest).

- ☐ Private Property
- ☐ No trespass sign
- ☐ Wildlife
- ☐ Steep slopes
- ☐ No public access
- ☐ No roads
- ☐ Fence
- ☐ Barge/ship traffic
- ☐ Industrial
- ✗ None of the Above
- ☐ Other: _____

Comments: _____

6. Check any indications of human use (Attach photos).

- ☐ Roads
- ☐ Rope swings
- ☐ Dock/platform
- ☐ Foot paths/prints
- ☐ Other: _____
- ☐ RV/ATV Tracks
- ☐ Camping Sites
- ☐ Fire pit/ring
- ✗ Fishing Tackle
- ☐ NPDES Discharge
- ☐ Gates on corridor
- ☐ Children's toys
- ☐ Remnant's of Kid's play
- ☐ Organized event
- ☐ No Human Presence

Comments: bobber hanging from tree, beer can with fishing line hanging in downed trees.

Field Data Sheets – Basic RUAA Survey

Stream Name: Navasota river below Lake Limestone Site: 7
Date: 5-28-2010 Time: 1228-1337

7. Check all water characteristics that apply (Attach photos).

Aquatic Vegetation: X absent ☐ rare ☐ common ☐ abundant
Algae Cover: X absent ☐ rare ☐ common ☐ abundant
Odor: X none ☐ rare ☐ common ☐ abundant
Color: ☐ clear ☐ green ☐ red X brown ☐ black
Bottom Deposit: ☐ sludge ☐ solids X fine sediments ☐ none ☐ other
Water Surface: X clear ☐ scum ☐ foam ☐ debris ☐ oil
Other:

8. Vertebrates Observed within 300 meter reach

Snakes X None ☐ slight presence ☐ moderate presence ☐ large presence
Water Dependent Birds X None ☐ slight presence ☐ moderate presence ☐ large presence
Alligators X None ☐ slight presence ☐ moderate presence ☐ large presence
Comments:

9. Mammals Observed within 300 meter reach

Wild X None ☐ slight presence ☐ moderate presence ☐ large presence
Domesticated Pets X None ☐ slight presence ☐ moderate presence ☐ large presence
Livestock X None ☐ slight presence ☐ moderate presence ☐ large presence
Feral Hogs X None ☐ slight presence ☐ moderate presence ☐ large presence
Comments:

10. Evidence of wild animals or evidence of birds, cattle, hogs, etc.

X Tracks ☐ Fecal droppings ☐ Bird nests
deer, birds, raccoons and others

11. Garbage Observed

Large garbage in the channel X None ☐ Rare ☐ Common ☐ Abundant
Small garbage in the channel X None ☐ Rare ☐ Common ☐ Abundant
Bank Garbage ☐ None X Rare ☐ Common ☐ Abundant
Briefly describe the kinds of garbage observed: couple of beer cans and bottles along stream. Other beverage containers and trash on two-track access road.

12. Is the site located in a wildlife preserve with large wildlife (i.e waterfowl) population? ☐ Yes X No

13. Please document any other relevant information regarding recreational activities and the water body in general (for example, area outside of the stream reach evaluated).

Field Data Sheet - Basic RUAA Survey
Stream Flow (Discharge) Measurement

Stream: Navasota river below lake Limestone Date: 5-28-2010
Site: 1 Site
Description: US 79 @ Navasota
Time Begin: 1235 Time End: 1305 Meter Type: Sontek Flowtracker
Observers: C. Gauthier R Thompson Stream Width*: 24.6' Section Width (W): 1.23'
Observations:

Section Midpoint (ft) (m)	Section Depth (ft)(m) (cm) (D)	Observational Depth** (ft)(m)	Velocity (V) At Point (ft/s)(m/s)	Velocity (V) Average (ft/s)(m/s)	Flow (Q) (m^3/s) (ft^3/s) Q = (W)(D)(V)	
0.62	0.3		0.00			just upstream of rocks and small wooden debris.
1.85	0.5		0.35			
3.08	0.5		0.30			
4.31	0.5		0.87			
5.54	1.1		1.06			
6.77	1.3		1.15			
8.00	1.4		1.36			
9.23	1.3		1.47			
10.46	1.4		1.57			
11.69	1.2		1.50			
12.92	1.2		1.58			
14.15	1.0		1.58			
15.38	1.0		1.35			
16.61	0.9		1.57			
17.84	0.9		1.18			
19.07	1.0		1.32			
20.30	0.8		1.47			
21.53	0.7		0.90			
22.76	0.7		0.09			-eddie adjacent to bank.
23.99	0.3		0.14			

Total Q: 22.258

2

Field Data Sheets – Basic RUAA Survey

(should be completed for each site)

Data Collectors & Contact Information:	M. Shepard, C. Gauthier, R. Thompson, L. Benavides
Date & Time: 5-28-2010 16:59-1800	County Name: Robertson / Leon / Madison / Brazos
Stream Name: Navasota river below lake Limestone	
Segment No. or nearest downstream Segment No.: 1209	
Description of Site: County Line Rd @ Navasota	

At any point during the Basic RUAA Survey it becomes apparent that primary contact recreation is clearly the use for the water body the investigator should stop conducting the UAA.

A. Stream Characteristics:

1. Check the following channel flow status that applies.

☐ dry ☐ no flow ☒ low ☐ normal ☐ high ☐ flooded

2. Check the following stream type that applies on the day of the survey:

☐ Ephemeral: A stream which flows only during or immediately after a rainfall event, and contains no refuge pools capable of sustaining a viable community of aquatic organisms.

☐ Intermittent: A stream which has a period of zero flow for at least one week during most years. Where flow records are available, a stream with a 7Q2 flow of less than 0.1 cubic feet per second is considered intermittent.

☐ Intermittent w/ perennial pools: An intermittent stream which maintains persistent pools even when flow in the stream is less than 0.1 cubic feet per second.

☒ Perennial: A stream which flows continuously throughout the year. Perennial streams have a 7Q2 equal to or greater than 0.1 cubic feet per second.

☐ Designated or unclassified tidal stream: A stream that is tidally influenced. If you checked this box, you will need to contact the Water Quality Standards Group and evaluate whether or not a bathing beach is located along the tidal stream and whether or not a bathing beach is located along the estuary, bay or Gulf water that the tidal stream flows into.

3. Streamflow

Use USGS gage data (if a gage is located at a site or within a quarter mile of a site) or use the Stream Flow (Discharge) Measurement Form and follow the procedures outlined in the most recent TCEQ Surface Water Quality Monitoring Procedures, Volume 1, RG-415. If USGS gage data is used for a site, include that information as an attachment and list the streamflow on the sampling date below. If the stream flow taken at one site is representative of the flow at another site(s), then that flow can be used as the observed flow and should be documented below. If the stream flow measured at one site is different from another site, then stream flow should be taken at both sites. ~~19.616 cfs~~ MES ~~44.324 cfs~~ 44.805 cfs

4. Water Quality Data (Field Parameters)

Field parameters should be collected in accordance with the procedures outlined in the most recent TCEQ Surface Water Quality Monitoring Procedures, Volume 1.

Air Temp 34 °C Water Temp 30 °C Secchi 0.291 m

5. Riparian Zone (Mark dominant categories with L (Left Bank) and R (Right Bank). Bank orientation is determined by the investigator facing downstream.)

L, R Forest	____ Urban	____ Rip rap
____ Shrub dominated corridor	____ Pasture	____ Concrete
____ Herbaceous marsh	____ Row crops	Other (specify): ____
____ Mowed/maintained corridor	____ Denuded/Eroded bank	

6. Ease of bank access to the water body: ☒ Easy ☐ Moderately easy ☐ Moderately difficult ☐ Difficult

7. Please describe access opportunities or explain why the site is not easily accessible (Attach photos for documentation):

many worn paths to water along banks, some areas very steep but somewhat manageable

8. Dominant Primary Substrate

☐ Cobble ☒ Sand ☐ Silt ☐ Mud/Clay ☐ Gravel ☐ Bedrock ☐ Rip rap ☐ Concrete

E
AH
AC MKS

Field Data Sheets – Basic RUAA Survey

Stream Name Navasota river below lake limestone Site: 2
Date: 5/28/10 Time: 1659 - 1800

B. Primary Contact Water Recreation Evaluation:
- Primary contact recreation draft definition: Water recreation activities, such as wading by children, swimming, water skiing, diving, tubing, surfing, and whitewater kayaking, canoeing, and rafting, involving a significant risk of ingestion of water.

1. Were water recreation activities that involve a significant risk of ingestion (full body immersion) observed at this site?
X Yes ☐ No primary contact recreation activities were observed
a. Check the following boxes of primary contact recreation activities observed at the time of the sampling event at the site (Attach photos of the activities or lack of activities).

X Wading-Children ☐ Tubing ☐ No primary contact activities that commonly occur were observed
X Wading-Adults ☐ Surfing
X Swimming ☐ Whitewater-kayaking, canoeing, rafting
☐ Water skiing ☐ Other: _____
☐ Diving ☐ frequent public swimming-created by publicly owned land or commercial operations

b. Check the number of individuals observed at the site: ☐ None X 1-10 ☐ 11-20 ☐ 20-50 ☐ greater than 50

c. Check the following that apply regarding the individuals proximity to the water body.
X Water in mouth or nose of the individual X Primary touch: Individual's body (or portion) immersed in water
X Secondary touch: fishing, pets and related contact with water ☐ Individual is in a boat touching water
☐ Individual is on shore near water within 8 meters (25ft) of water ☐ Individual is well away from water between 8 and 30 meters (100 ft) ☐ Not applicable

2. If primary contact recreation activities are not observed, describe the physical characteristics of the water body that may hinder the frequency of primary contact (depth, etc.) (Attach photos, etc. for documentation).
N/A

3. Describe if there is public access (e.g. parks, roads, etc.) (Attach photos, maps, etc. for documentation).
worn drive along bridge w/ undeveloped parking area

4. Is an area with primary contact recreation activities or a bathing beach (e.g. state/local parks with swimming, etc.) located near (e.g. within 5 miles upstream and downstream) this site? No designated areas

C. Secondary Contact Water Recreation Evaluation:
- Secondary contact recreation 1: Water recreation activities, such as fishing, commercial and recreational boating, and limited body contact incidental to shoreline activity, not involving a significant risk of water ingestion and that commonly occur.
- Secondary contact recreation 2: Water recreation activities, such as fishing, commercial and recreational boating, and limited body contact incidental to shoreline activity, not involving a significant risk of water ingestion but that occur less frequently than for secondary contact recreation 1 due to (1) physical characteristics of the water body and/or (2) limited public access.

1. Were water recreation activities observed at the site, but the nature of the recreation does not involve a significant risk of ingestion (e.g. secondary contact recreation activities)? X Yes ☐ No secondary contact recreation activities were observed
a. Check the following boxes of secondary contact recreation activities that were observed at the time of the sampling event at the site (Attach photos of activities or lack of activities).

X Fishing
☐ Boating-commercial, recreational
☐ Non-whitewater-kayaking, rafting, canoeing
☐ No secondary contact recreation activities were observed
☐ Other secondary contact activities: _____

Field Data Sheets – Basic RUAA Survey

Stream Name Navasota river below lake Limestone Site: 2
Date: 5/28/10 Time: 1659 - 1800

b. Check the number of individuals observed at the site.
_ None X 1-10 _ 11-20 _ 20-50 _ greater than 50

c. Check the following that apply regarding the individuals proximity to the water body.
X Secondary touch: fishing, pets and related contact with water ☐ In a boat touching water
☐ Body on shore near water within 8 meters (25ft) of water ☐ Body well away from water between 8 and 30 meters (100 ft)

2. If secondary contact recreation activities are not observed, describe the physical characteristics of the water body that may hinder the frequency of secondary contact (Attach photos, etc. for documentation).
N/A

3. If secondary contact recreation activities are observed, how often do water recreational activities occur that do not involve a significant risk of water ingestion? X frequently ☐ infrequently
Please describe how often the activities occur? ☐ Unknown ☐ Never ☐ Daily ☐ Monthly ☐ Yearly X weekly during summer months

4. If infrequently, what is the reason? ☐ physical characteristics of the water body ☐ limited public access ☐ other
If other, list reasons: _____

5. Describe the physical characteristics of the water body that hinders the frequency of secondary contact recreation (depth, etc.) (Attach photos or depth measurements, etc. for documentation).
Thick vegetation on banks

6. Describe why there is limited public access (e.g. lack of roads, river or stream banks overgrown, etc.) (Attach photos, maps, etc. for documentation).
banks overgrown, fences - but paths around

D. Noncontact Recreation Evaluation

Noncontact recreation applies to water bodies where recreation activities do not involve a significant risk of water ingestion, and where primary and secondary contact recreation uses do not occur because of unsafe conditions, such as barge traffic.

1. Provide site-specific information and documentation (including photographs) regarding unsafe conditions, recreation activities, and presence or absence of water recreation activities.

Field Data Sheets – Basic RUAA Survey

Stream Name Nowaota river below lake Limestone Site: 2
Date: 5/28/10 FDS Page 3 of 8 Time: 1659 - 1800

E. Stream Channel and Substantial Pools
Please check the following which best describes the river or stream: X Wadeable ☐ Non-wadeable
but some parts deep

1. Wadeable Streams
Determine whether or not the average depth at the thalweg is greater than 0.5 meters and if there are substantial pools with a depth of 1 meter or greater. Walk an approximately 300 meter reach (total) at the site and take the following measurements within the 300 meter reach. Measurements should be taken during base flow conditions (sustained or typical dry, warm-weather flows between rainfall events, excluding unusual antecedent conditions of drought or wet weather

Also, take photos facing upstream, downstream, left bank, and right bank at the 30 meters, 150 meters, and 300 meters.
Photos #s (30 meters) Upstream ✓ Downstream ✓ Left Bank ✓ Right Bank ✓ 2
Photos #s (150 meters) Upstream ✓ Downstream ✓ Left Bank ✓ Right Bank ✓ 1
Photos #s (300 meters) Upstream ✓ Downstream ✓ Left Bank ✓ Right Bank ✓ 3

a) Substantial pools - Measure the length of each pool (if > 10 pools only measure 10 pools), the width (at the widest point), and the deepest depth. A substantial pool is considered a pool greater than 10 meters in length for the purposes of a Basic RUAA Survey. If depth and/or width measurements were not attainable, explain why.

	Length (meters)	Width (meters)	Depth (meters)
Pool 1			
Pool 2			
Pool 3			
Pool 4			
Pool 5			
Pool 6			
Pool 7			
Pool 8			
Pool 9			
Pool 10			

b)Average depth at the thalweg –Take depth measurements approximately every 30 meters to calculate an average depth at the thalweg (at least 10 measurements needed). If depth and/or width measurements were not attainable, explain why.

Distance	Depth (meters)	
30 meters	4.4	1.34 m
60 meters	>4.9	>1.49
90 meters	4.4	1.34
120 meters	3.3	1.01
150 meters	1.8	0.55
180 meters	2.1	0.64
210 meters	1.9	0.58
240 meters	1.8	0.55
270 meters	1.3	0.40
300 meters	2.3	0.70
Average		0.86 m

— bait boxes (one just further up ~15m)

Field Data Sheets – Basic RUAA Survey

Stream Name Navasota River (1209) Site: #2
Date: 5/28/10 Time: 1659-1800

c) Stream width - Measure (1) the width at one point which represents the typical average width of the 300 meter reach; (2) the width at the narrowest point of the stream within the 300 meter reach; and (3) the width at the widest point of the stream within the 300 meter reach.

Measurement Type	(ft) Width	(meters)
Typical Average Width of 300 meter reach	46ft	14.02
Width at narrowest point of the stream within 300 meter reach		12.6
Width at the widest point of the stream within 300 meter reach		15.2

d) Is there sufficient water within a 300 meter stream reach during base flow conditions to support primary contact recreation? ☒ Yes ☐ No
COMMENTS:

2. Non-wadeable Streams N/A
If accessible, take 10 width measurements which represent typical widths of the 300 meter reach. If the water is too deep and not accessible record the estimated average width of the water body.

Also, take photos facing upstream, downstream, left bank, and right bank at .
Photos #s (30 meters) Upstream____ Downstream____ Left Bank ____ Right Bank____
Photos #s (150 meters) Upstream____ Downstream____ Left Bank ____ Right Bank____
Photos #s (300 meters) Upstream____ Downstream____ Left Bank ____ Right Bank____

# Measurements	Width (meters)
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	

Navasota Field Data Sheets – Basic RUAA Survey

Stream Name: river below lake Limestone Site: 2

Date: 5/28/10 Time: 1659 - 1800

F. Additional RUAA Information

1. Check the following activities observed over the site reach.

- [x] Drinking or water in mouth
- [ ] Bathing
- [ ] Walking
- [ ] Jogging/running
- [ ] Bicycling
- [x] Standing
- [x] Sitting
- [ ] Lying down/sleeping
- [x] Playing on shoreline
- [ ] Picnicking
- [ ] Motorcycle/ATV
- [ ] Hunting/Trapping
- [ ] Wildlife watching
- [ ] None
- [x] Other: fishing line

2. Are there permanent or long-term hydrologic modifications that are constructed and operated in a way that affects the recreational uses? ~~[x] Yes~~ [x] No (If yes, please provide supporting documentation and photos.)

Comments: bridge pylons

3. Check any channel obstructions that apply (Attach photos).

- [ ] Culverts
- [ ] Barbed wire
- [ ] Utility pipe
- [ ] Fences
- [ ] Dams
- [x] Other (specify): some fallen trees
- [ ] Log jams
- [ ] Thick vegetation
- [ ] Rip rap
- [ ] Low bridges
- [ ] Water control structure
- [ ] None

4. Check all surrounding conditions that promote recreational activities (Attach photos of evidence or unusual items of interest).

- [ ] Campgrounds
- [ ] Playgrounds
- [ ] Rural area
- [x] Residential
- [ ] National forests
- [ ] Urban/suburban location
- [ ] Golf Course
- [ ] Sports Field
- [ ] Stairs/walkway
- [x] Boating access (ramps)
- [ ] Beach
- [ ] Bridge crossing
- [ ] Commercial boating
- [ ] Trails/paths (hiking/biking)
- [ ] Paved parking lot
- [ ] Unimproved parking lot
- [x] Roads (paved/unpaved)
- [ ] Populated area
- [ ] Docks or rafts
- [ ] Commercial outfitter
- [ ] Nearby school
- [ ] Power Line Corridor
- [ ] Parks (national/city/county/state)
- [ ] Public Property
- [ ] Other:
- [ ] None of the Above

Comments: boat ramp is makeshift - unpaved, unmaintained

5. Check all surrounding conditions that impede recreational activities (Attach photos of evidence or unusual items of interest).

- [x] Private Property
- [ ] No trespass sign
- [ ] Wildlife
- [x] Steep slopes
- [ ] No public access
- [ ] No roads
- [x] Fence on banks
- [ ] Barge/ship traffic
- [ ] Industrial
- [ ] None of the Above
- [ ] Other:

Comments:

6. Check any indications of human use (Attach photos).

- [x] Roads
- [ ] Rope swings
- [ ] Dock/platform
- [x] Foot paths/prints
- [x] Other: boat ramp
- [ ] RV/ATV Tracks
- [ ] Camping Sites
- [x] Fire pit/ring
- [x] Fishing Tackle
- [ ] NPDES Discharge
- [ ] Gates on corridor
- [ ] Children's toys
- [ ] Remnant's of Kid's play
- [ ] Organized event
- [ ] No Human Presence

Comments:

Navasota **Field Data Sheets – Basic RUAA Survey**

Stream Name river below lake Limestone Site: 2

Date: 5/28/10 Time: 1659 - 1800

7. Check all water characteristics that apply (Attach photos).

Aquatic Vegetation: ☐ absent ☒ rare ☐ common ☐ abundant

Algae Cover: ☒ absent ☐ rare ☐ common ☐ abundant

Odor: ☒ none ☐ rare ☐ common ☐ abundant

Color: ☐ clear ☐ green ☐ red ☒ brown ☐ black

Bottom Deposit: ☐ sludge ☐ solids ☐ fine sediments ☒ none ☐ other

Water Surface: ☒ clear ☐ scum ☐ foam ☐ debris ☐ oil

Other:

8. Vertebrates Observed within 300 meter reach

Snakes	☒ None	☐ slight presence	☐ moderate presence	☐ large presence
Water Dependent Birds	☒ None	☐ slight presence	☐ moderate presence	☐ large presence
Alligators	☒ None	☐ slight presence	☐ moderate presence	☐ large presence

Comments:

9. Mammals Observed within 300 meter reach

Wild	☒ None	☐ slight presence	☐ moderate presence	☐ large presence
Domesticated Pets	☒ None	☐ slight presence	☐ moderate presence	☐ large presence
Livestock	☒ None	☐ slight presence	☐ moderate presence	☐ large presence
Feral Hogs	☒ None	☐ slight presence	☐ moderate presence	☐ large presence

Comments:

10. Evidence of wild animals or evidence of birds, cattle, hogs, etc.

☒ Tracks ☐ Fecal droppings ☐ Bird nests

11. Garbage Observed

Large garbage in the channel	☐ None	☐ Rare	☒ Common	☐ Abundant
Small garbage in the channel	☒ None	☐ Rare	☐ Common	☐ Abundant
Bank Garbage	☐ None	☐ Rare	☐ Common	☒ Abundant

Briefly describe the kinds of garbage observed: tires & large pieces of metal, lots of food/drink containers, beer cans, bait boxes

12. Is the site located in a wildlife preserve with large wildlife (i.e waterfowl) population? ☐ Yes ☒ No

13. Please document any other relevant information regarding recreational activities and the water body in general (for example, area outside of the stream reach evaluated).

Field Data Sheet - Basic RUAA Survey
Stream Flow (Discharge) Measurement

Stream: Nawagota river below lake limestone Date: 5-28-10
Site: 2 Site
Description: County Line Rd @ Nawasota
Time Begin: 17:06 Time End: Meter Type: Sontek FlowTracker
Observers: C. Gauthier R. Thompson Stream Width*: 46.0 Section Width (W): 0.3
Observations:

Section Midpoint (ft) (m)	Section Depth (ft) (m) (cm) (D)	Observational Depth** (ft)(m)	Velocity (V) At Point (ft/s)(m/s)	Velocity (V) Average (ft/s)(m/s)	Flow (Q) (m^3/s) (ft^3/s) Q = (W)(D)(V)
1.15	0.9		0.72		
3.45	1.6		0.99		
5.75	1.9		0.95		
8.05	1.9		0.88		
10.35	1.8		1.01		
12.65	1.6		0.90		
14.95	1.4		0.72		
17.25	1.3		0.80		
19.55	1.3		0.78		
21.85	1.2		0.79		
24.15	1.15		0.85		
26.45	1.2		0.75		
28.75	1.1		0.76		
31.05	1.1		0.69		
33.35	1.1		0.57		
35.65	1.1		0.76		
37.95	1.1		0.67		
40.25	1.0		0.42		
42.55	0.9		~~0.0~~	0.29	
44.85	0.5			0.30	

downstream adj to log, ~~red~~ re-measured slightly upstream

need to calculate Q at office — went back to measure at locations we did not write down.

3

Field Data Sheets – Basic RUAA Survey

(should be completed for each site)

Data Collectors & Contact Information:	M. Shepard, C. Gauthier, R. Thompson, L. Benavides
Date & Time: 5/29/10 0955 – 1105	County Name: Madison / Bra 300
Stream Name: Navasota river below lake Limestone	
Segment No. or nearest downstream Segment No.: 1209	
Description of Site: US 190 @ Navasota	

At any point during the Basic RUAA Survey it becomes apparent that primary contact recreation is clearly the use for the water body the investigator should stop conducting the UAA.

A. Stream Characteristics:

1. Check the following channel flow status that applies.

☐ dry ☐ no flow ☐ low X normal ☐ high ☐ flooded

↳ but may be a little low

2. Check the following stream type that applies on the day of the survey:

☐ Ephemeral: A stream which flows only during or immediately after a rainfall event, and contains no refuge pools capable of sustaining a viable community of aquatic organisms.

☐ Intermittent: A stream which has a period of zero flow for at least one week during most years. Where flow records are available, a stream with a 7Q2 flow of less than 0.1 cubic feet per second is considered intermittent.

☐ Intermittent w/ perennial pools: An intermittent stream which maintains persistent pools even when flow in the stream is less than 0.1 cubic feet per second.

X Perennial: A stream which flows continuously throughout the year. Perennial streams have a 7Q2 equal to or greater than 0.1 cubic feet per second.

☐ Designated or unclassified tidal stream: A stream that is tidally influenced. If you checked this box, you will need to contact the Water Quality Standards Group and evaluate whether or not a bathing beach is located along the tidal stream and whether or not a bathing beach is located along the estuary, bay or Gulf water that the tidal stream flows into.

3. Streamflow

Use USGS gage data (if a gage is located at a site or within a quarter mile of a site) or use the Stream Flow (Discharge) Measurement Form and follow the procedures outlined in the most recent TCEQ Surface Water Quality Monitoring Procedures, Volume 1, RG-415. If USGS gage data is used for a site, include that information as an attachment and list the streamflow on the sampling date below. If the stream flow taken at one site is representative of the flow at another site(s), then that flow can be used as the observed flow and should be documented below. If the stream flow measured at one site is different from another site, then stream flow should be taken at both sites. ~~0.01~~ ~~0.02~~ cfs MES 0.21 cfs

4. Water Quality Data (Field Parameters)

Field parameters should be collected in accordance with the procedures outlined in the most recent TCEQ Surface Water Quality Monitoring Procedures, Volume 1.

Air Temp 31 °C Water Temp 27 °C Secchi 0.302 m

5. Riparian Zone (Mark dominant categories with L (Left Bank) and R (Right Bank). Bank orientation is determined by the investigator facing downstream.)

R,L Forest	____ Urban	____ Rip rap
____ Shrub dominated corridor	____ Pasture	____ Concrete
____ Herbaceous marsh	____ Row crops	Other (specify): ____
____ Mowed/maintained corridor	____ Denuded/Eroded bank	

6. Ease of bank access to the water body: ☐ Easy ☐ Moderately easy ☐ Moderately difficult X Difficult

7. Please describe access opportunities or explain why the site is not easily accessible (Attach photos for documentation):

only one point of easy access, at bridge; rest is quite steep

8. Dominant Primary Substrate

☐ Cobble ☐ Sand ☐ Silt X Mud/Clay ☐ Gravel ☐ Bedrock ☐ Rip rap ☐ Concrete ~~N/A~~ MES

QC JB 6/25

E MES 6/24

Field Data Sheets – Basic RUAA Survey

Stream Name Navasota river below lake Limestone Site: 3
Date: 5/29/10 Time: 0955 - 1105

B. Primary Contact Water Recreation Evaluation:
- Primary contact recreation draft definition: Water recreation activities, such as wading by children, swimming, water skiing, diving, tubing, surfing, and whitewater kayaking, canoeing, and rafting, involving a significant risk of ingestion of water.

1. Were water recreation activities that involve a significant risk of ingestion (full body immersion) observed at this site?
☐ Yes ☒ No primary contact recreation activities were observed
a. Check the following boxes of primary contact recreation activities observed at the time of the sampling event at the site (Attach photos of the activities or lack of activities).

☐ Wading-Children	☐ Tubing	☒ No primary contact activities that commonly occur were observed
☐ Wading-Adults	☐ Surfing	
☐ Swimming	☐ Whitewater-kayaking, canoeing, rafting	
☐ Water skiing	☐ Other: _____	
☐ Diving	☐ frequent public swimming-created by publicly owned land or commercial operations	

b. Check the number of individuals observed at the site: ☒ None ☐ 1-10 ☐ 11-20 ☐ 20-50 ☐ greater than 50

c. Check the following that apply regarding the individuals proximity to the water body.
☐ Water in mouth or nose of the individual ☐ Primary touch: Individual's body (or portion) immersed in water
☐ Secondary touch: fishing, pets and related contact with water ☐ Individual is in a boat touching water
☐ Individual is on shore near water within 8 meters (25ft) of water ☐ Individual is well away from water between 8 and 30 meters (100 ft) ☒ Not applicable

2. If primary contact recreation activities are not observed, describe the physical characteristics of the water body that may hinder the frequency of primary contact (depth, etc.) (Attach photos, etc. for documentation). Very deep water, steep ~~st~~ banks in many areas

3. Describe if there is public access (e.g. parks, roads, etc.) (Attach photos, maps, etc. for documentation). can drive under bridge, open areas without fences

4. Is an area with primary contact recreation activities or a bathing beach (e.g. state/local parks with swimming, etc.) located near (e.g. within 5 miles upstream and downstream) this site? No

C. Secondary Contact Water Recreation Evaluation:
- Secondary contact recreation 1: Water recreation activities, such as fishing, commercial and recreational boating, and limited body contact incidental to shoreline activity, not involving a significant risk of water ingestion and that commonly occur.
- Secondary contact recreation 2: Water recreation activities, such as fishing, commercial and recreational boating, and limited body contact incidental to shoreline activity, not involving a significant risk of water ingestion but that occur less frequently than for secondary contact recreation 1 due to (1) physical characteristics of the water body and/or (2) limited public access.

1. Were water recreation activities observed at the site, but the nature of the recreation does not involve a significant risk of ingestion (e.g. secondary contact recreation activities)? ☐ Yes ☒ No secondary contact recreation activities were observed
a. Check the following boxes of secondary contact recreation activities that were observed at the time of the sampling event at the site (Attach photos of activities or lack of activities).
☐ Fishing
☐ Boating-commercial, recreational
☐ Non-whitewater-kayaking, rafting, canoeing
☒ No secondary contact recreation activities were observed
☐ Other secondary contact activities: _____

Field Data Sheets – Basic RUAA Survey

Stream Name Navasota River below Lake Limestone Site: 3
Date: 5/29/10 Time: 0955 - 1105

b. Check the number of individuals observed at the site.
X None ☐ 1-10 ☐ 11-20 ☐ 20-50 ☐ greater than 50

c. Check the following that apply regarding the individuals proximity to the water body.
☐ Secondary touch: fishing, pets and related contact with water ☐ In a boat touching water
☐ Body on shore near water within 8 meters (25ft) of water ☐ Body well away from water between 8 and 30 meters (100 ft) ☒ N/A

2. If secondary contact recreation activities are not observed, describe the physical characteristics of the water body that may hinder the frequency of secondary contact (Attach photos, etc. for documentation).
no boat ramps - makeshift or otherwise & steep banks, downed trees across water

3. If secondary contact recreation activities are observed, how often do water recreational activities occur that do not involve a significant risk of water ingestion? ☐ frequently ☐ infrequently ☒ N/A
Please describe how often the activities occur? ☐ Unknown ☐ Never ☐ Daily ☐ Monthly ☐ Yearly

4. If infrequently, what is the reason? ☐ physical characteristics of the water body ☐ limited public access ☐ other
If other, list reasons: N/A

5. Describe the physical characteristics of the water body that hinders the frequency of secondary contact recreation (depth, etc.) (Attach photos or depth measurements, etc. for documentation).
same as before

6. Describe why there is limited public access (e.g. lack of roads, river or stream banks overgrown, etc.) (Attach photos, maps, etc. for documentation).
path/road under bridge not paved, fences on adjacent property

D. Noncontact Recreation Evaluation

Noncontact recreation applies to water bodies where recreation activities do not involve a significant risk of water ingestion, and where primary and secondary contact recreation uses do not occur because of unsafe conditions, such as barge traffic.

1. Provide site-specific information and documentation (including photographs) regarding unsafe conditions, recreation activities, and presence or absence of water recreation activities.

Field Data Sheets – Basic RUAA Survey

Stream Name Navasota River below Lake Limestone Site: 3
Date: 5/29/10 FDS Page 3 of 8 Time: 0955-1105

E. Stream Channel and Substantial Pools
Please check the following which best describes the river or stream: ☐ Wadeable ☒ Non-wadeable

1. Wadeable Streams
Determine whether or not the average depth at the thalweg is greater than 0.5 meters and if there are substantial pools with a depth of 1 meter or greater. Walk an approximately 300 meter reach (total) at the site and take the following measurements within the 300 meter reach. Measurements should be taken during base flow conditions (sustained or typical dry, warm-weather flows between rainfall events, excluding unusual antecedent conditions of drought or wet weather

Also, take photos facing upstream, downstream, left bank, and right bank at the 30 meters, 150 meters, and 300 meters.
Photos #s (30 meters) Upstream____ Downstream____ Left Bank ____ Right Bank____
Photos #s (150 meters) Upstream____ Downstream____ Left Bank ____ Right Bank____
Photos #s (300 meters) Upstream____ Downstream____ Left Bank ____ Right Bank____

a) Substantial pools - Measure the length of each pool (if > 10 pools only measure 10 pools), the width (at the widest point), and the deepest depth. A substantial pool is considered a pool greater than 10 meters in length for the purposes of a Basic RUAA Survey. If depth and/or width measurements were not attainable, explain why.

	Length (meters)	Width (meters)	Depth (meters)
Pool 1		21M	
Pool 2	40M	21M	
Pool 3	120M	19M	
Pool 4	90M	20M	
Pool 5			
Pool 6			
Pool 7			
Pool 8			
Pool 9			
Pool 10			

b)Average depth at the thalweg –Take depth measurements approximately every 30 meters to calculate an average depth at the thalweg (at least 10 measurements needed). If depth and/or width measurements were not attainable, explain why.

Distance	Depth (meters)
30 meters	
60 meters	
90 meters	
120 meters	
150 meters	
180 meters	
210 meters	
240 meters	
270 meters	
300 meters	
Average	

Field Data Sheets – Basic RUAA Survey

Stream Name: Navasota River below Lake Limestone Site: 3
Date: 5/29/10 Time: 0955 - 1105

c) Stream width - Measure (1) the width at one point which represents the typical average width of the 300 meter reach; (2) the width at the narrowest point of the stream within the 300 meter reach; and (3) the width at the widest point of the stream within the 300 meter reach.

Measurement Type	Width (meters)
Typical Average Width of 300 meter reach	
Width at narrowest point of the stream within 300 meter reach	
Width at the widest point of the stream within 300 meter reach	

d) Is there sufficient water within a 300 meter stream reach during base flow conditions to support primary contact recreation? ☒ Yes ☐ No
COMMENTS:

2. Non-wadeable Streams
If accessible, take 10 width measurements which represent typical widths of the 300 meter reach. If the water is too deep and not accessible record the estimated average width of the water body.

Also, take photos facing upstream, downstream, left bank, and right bank at .
Photos #s (30 meters) Upstream ✓ Downstream ✓ Left Bank ✓ Right Bank ✓ 3
Photos #s (150 meters) Upstream ✓ Downstream ✓ Left Bank ✓ Right Bank ✓ 2
Photos #s (300 meters) Upstream ✓ Downstream ✓ Left Bank ✓ Right Bank ✓ 1

# Measurements	Width (meters)
1	21m
2	21m
3	19m
4	20M
5	19m
6	13m
7	16M
8	24m
9	19m
10	21m

Navasota **Field Data Sheets – Basic RUAA Survey**

Stream Name: River below lake Limestone Site: 3

Date: 5/29/10 Time: 0955 - 1105

F. Additional RUAA Information

1. Check the following activities observed over the site reach.

- ☐ Drinking or water in mouth
- ☐ Bathing
- ☐ Walking
- ☐ Jogging/running
- ☐ Bicycling
- ☐ Standing
- ☐ Sitting
- ☐ Lying down/sleeping
- ☐ Playing on shoreline
- ☐ Picnicking
- ☐ Motorcycle/ATV
- ☐ Hunting/Trapping
- ☐ Wildlife watching
- ☒ None
- ☐ Other: _____

2. Are there permanent or long-term hydrologic modifications that are constructed and operated in a way that affects the recreational uses? ☒ Yes ☐ No (If yes, please provide supporting documentation and photos.)

Comments: bridge

3. Check any channel obstructions that apply (Attach photos). ☒ fallen trees & debris

- ☐ Culverts
- ☐ Barbed wire
- ☐ Utility pipe
- ☐ Fences
- ☐ Dams
- ☒ Other (specify): old bridge posts in channel, 2 land pieces that create a narrow & shallow channel at bridge
- ☐ Log jams
- ☐ Thick vegetation
- ☐ Rip rap
- ☐ Low bridges
- ☐ Water control structure
- ☐ None

4. Check all surrounding conditions that promote recreational activities (Attach photos of evidence or unusual items of interest).

- ☐ Campgrounds
- ☐ Playgrounds
- ☒ Rural area
- ☐ Residential
- ☐ National forests
- ☐ Urban/suburban location
- ☐ Golf Course
- ☐ Sports Field
- ☐ Stairs/walkway
- ☐ Boating access (ramps)
- ☐ Beach
- ☒ Bridge crossing
- ☐ Commercial boating
- ☐ Trails/paths (hiking/biking)
- ☐ Paved parking lot
- ☐ Unimproved parking lot
- ☒ Roads (paved/unpaved)
- ☐ Populated area
- ☐ Docks or rafts
- ☐ Commercial outfitter
- ☐ Nearby school
- ☐ Power Line Corridor
- ☐ Parks (national/city/county/state)
- ☐ Public Property
- ☐ Other: _____
- ☐ None of the Above

Comments: _____

5. Check all surrounding conditions that impede recreational activities (Attach photos of evidence or unusual items of interest).

- ☒ Private Property
- ☒ No trespass sign
- ☐ Wildlife
- ☒ Steep slopes
- ☐ No public access
- ☐ No roads
- ☐ Fence
- ☐ Barge/ship traffic
- ☐ Industrial
- ☐ None of the Above
- ☐ Other: _____

Comments: _____

6. Check any indications of human use (Attach photos).

- ☒ Roads
- ☐ Rope swings
- ☐ Dock/platform
- ☒ Foot paths/prints
- ☐ Other: _____
- ☐ RV/ATV Tracks
- ☐ Camping Sites
- ☐ Fire pit/ring
- ☒ Fishing Tackle
- ☐ NPDES Discharge
- ☐ Gates on corridor
- ☐ Children's toys
- ☐ Remnant's of Kid's play
- ☐ Organized event
- ☐ No Human Presence

Comments: beer cans, folding chair, bait boxes/ cartons

Navasota **Field Data Sheets – Basic RUAA Survey**

Stream Name: river below Lake Limestone Site: 3

Date: 5/29/10 Time: 0955 - 1105

7. Check all water characteristics that apply (Attach photos).

Aquatic Vegetation: ☒ absent ☐ rare ☐ common ☐ abundant

Algae Cover: ☒ absent ☐ rare ☐ common ☐ abundant

Odor: ☒ none ☐ rare ☐ common ☐ abundant

Color: ☐ clear ☐ green ☐ red ☒ brown ☐ black

Bottom Deposit: ☐ sludge ☐ solids ☐ fine sediments ☐ none ☐ other ☒ unknown

Water Surface: ☐ clear ☒ scum ☐ foam ☐ debris ☐ oil

Other:

8. Vertebrates Observed within 300 meter reach

Snakes	☒ None	☐ slight presence	☐ moderate presence	☐ large presence
Water Dependent Birds	☒ None	☐ slight presence	☐ moderate presence	☐ large presence
Alligators	☒ None	☐ slight presence	☐ moderate presence	☐ large presence

Comments:

9. Mammals Observed within 300 meter reach

Wild	☒ None	☐ slight presence	☐ moderate presence	☐ large presence
Domesticated Pets	☒ None	☐ slight presence	☐ moderate presence	☐ large presence
Livestock	☒ None	☐ slight presence	☐ moderate presence	☐ large presence
Feral Hogs	☒ None	☐ slight presence	☐ moderate presence	☐ large presence

Comments:

10. Evidence of wild animals or evidence of birds, cattle, hogs, etc.

☒ Tracks ☐ Fecal droppings ☒ Bird nests → swallows

11. Garbage Observed

Large garbage in the channel	☒ None	☐ Rare	☐ Common	☐ Abundant
Small garbage in the channel	☒ None	☐ Rare	☐ Common	☐ Abundant
Bank Garbage	☐ None	☐ Rare	☒ Common	☐ Abundant

Briefly describe the kinds of garbage observed: lots of beer cans, food wrappers, old furniture, cardboard boxes, bags of trash

12. Is the site located in a wildlife preserve with large wildlife (i.e waterfowl) population? ☐ Yes ☒ No

13. Please document any other relevant information regarding recreational activities and the water body in general (for example, area outside of the stream reach evaluated).

Field Data Sheet - Basic RUAA Survey

Stream Flow (Discharge) Measurement

Stream: Navasota river below lake limestone Date: 5.29.2010

Site: 3 Site

Description: US 190 @ Navasota

Time Begin: Time End: Meter Type: Sontek Flowtracker

Observers: Stream Width*: Section Width (W):

Observations:

Section Midpoint (ft) (m)	Section Depth (ft) (m) (cm) (D)	Observational Depth** (ft)(m)	Velocity (V)		Flow (Q) (m^3/s) (ft^3/s) Q = (W)(D)(V)
			At Point (ft/s)(m/s)	Average (ft/s)(m/s)	

Non-wadeable stream, no flow taken w/ Flowtracker
used Flow boat (M9)

Field Data Sheets – Basic RUAA Survey

(should be completed for each site)

Data Collectors & Contact Information:	
Date & Time: 5.29.10	County Name: Brazos / ~~Grimes~~ Madison
Stream Name: Navasota River below Lake Limestone	
Segment No. or nearest downstream Segment No.: 1209	
Description of Site: #4 - Soggy Bottom ATV Ranch	

At any point during the Basic RUAA Survey it becomes apparent that primary contact recreation is clearly the use for the water body the investigator should stop conducting the UAA.

No Access (private property) tried w/ owner (out of town) & leasing tenant

A. Stream Characteristics:

1. Check the following channel flow status that applies.

☐ dry ☐ no flow ☐ low ☐ normal ☐ high ☐ flooded

2. Check the following stream type that applies on the day of the survey:

☐ Ephemeral: A stream which flows only during or immediately after a rainfall event, and contains no refuge pools capable of sustaining a viable community of aquatic organisms.

☐ Intermittent: A stream which has a period of zero flow for at least one week during most years. Where flow records are available, a stream with a 7Q2 flow of less than 0.1 cubic feet per second is considered intermittent.

☐ Intermittent w/ perennial pools: An intermittent stream which maintains persistent pools even when flow in the stream is less than 0.1 cubic feet per second.

☐ Perennial: A stream which flows continuously throughout the year. Perennial streams have a 7Q2 equal to or greater than 0.1 cubic feet per second.

☐ Designated or unclassified tidal stream: A stream that is tidally influenced. If you checked this box, you will need to contact the Water Quality Standards Group and evaluate whether or not a bathing beach is located along the tidal stream and whether or not a bathing beach is located along the estuary, bay or Gulf water that the tidal stream flows into.

3. Streamflow

Use USGS gage data (if a gage is located at a site or within a quarter mile of a site) or use the Stream Flow (Discharge) Measurement Form and follow the procedures outlined in the most recent TCEQ Surface Water Quality Monitoring Procedures, Volume 1, RG-415. If USGS gage data is used for a site, include that information as an attachment and list the streamflow on the sampling date below. If the stream flow taken at one site is representative of the flow at another site(s), then that flow can be used as the observed flow and should be documented below. If the stream flow measured at one site is different from another site, then stream flow should be taken at both sites. _____ cfs

4. Water Quality Data (Field Parameters)

Field parameters should be collected in accordance with the procedures outlined in the most recent TCEQ Surface Water Quality Monitoring Procedures, Volume 1.

Air Temp _____° C Water Temp _____° C

5. Riparian Zone (Mark dominant categories with L (Left Bank) and R (Right Bank). Bank orientation is determined by the investigator facing downstream.)

_____ Forest	_____ Urban	_____ Rip rap
_____ Shrub dominated corridor	_____ Pasture	_____ Concrete
_____ Herbaceous marsh	_____ Row crops	Other (specify): _____
_____ Mowed/maintained corridor	_____ Denuded/Eroded bank	

6. Ease of bank access to the water body: ☐ Easy ☐ Moderately easy ☐ Moderately difficult ☐ Difficult

7. Please describe access opportunities or explain why the site is not easily accessible (Attach photos for documentation):

_____

_____

8. Dominant Primary Substrate

☐ Cobble ☐ Sand ☐ Silt ☐ Mud/Clay ☐ Gravel ☐ Bedrock ☐ Rip rap ☐ Concrete

EJB 6/25

Field Data Sheet - Basic RUAA Survey

Stream Flow (Discharge) Measurement

Stream: Nava Sota River (1209) Date: 5-29-2010

Site: #4 Site

Description: Soggy Bottom ATV Ranch

Time Begin: _____ Time End: _____ Meter Type: _____

Observers: _____ Stream Width*: _____ Section Width (W): _____

Observations: _____

Section Midpoint (ft) (m)	Section Depth (ft) (m) (cm) (D)	Observational Depth** (ft)(m)	Velocity (V)		Flow (Q) (m^3/s) (ft^3/s) Q = (W)(D)(V)
			At Point (ft/s)(m/s)	Average (ft/s)(m/s)	

5

Field Data Sheets – Basic RUAA Survey

(should be completed for each site)

Data Collectors & Contact Information: C. Gauthier, M. Shepard, R. Thompson, L. Benavides	
Date & Time: 5.29.2010 13:38-1445	County Name: Grimes / Brazos
Stream Name: Navasota River below lake Limestone	
Segment No. or nearest downstream Segment No.: 1209	
Description of Site: Democrat Rd @ Navasota	

At any point during the Basic RUAA Survey it becomes apparent that primary contact recreation is clearly the use for the water body the investigator should stop conducting the UAA.

A. Stream Characteristics:

1. Check the following channel flow status that applies.

☐ dry ☐ no flow ☒ low ☐ normal ☐ high ☐ flooded

2. Check the following stream type that applies on the day of the survey:

☐ Ephemeral: A stream which flows only during or immediately after a rainfall event, and contains no refuge pools capable of sustaining a viable community of aquatic organisms.

☐ Intermittent: A stream which has a period of zero flow for at least one week during most years. Where flow records are available, a stream with a 7Q2 flow of less than 0.1 cubic feet per second is considered intermittent.

☐ Intermittent w/ perennial pools: An intermittent stream which maintains persistent pools even when flow in the stream is less than 0.1 cubic feet per second.

☒ Perennial: A stream which flows continuously throughout the year. Perennial streams have a 7Q2 equal to or greater than 0.1 cubic feet per second.

☐ Designated or unclassified tidal stream: A stream that is tidally influenced. If you checked this box, you will need to contact the Water Quality Standards Group and evaluate whether or not a bathing beach is located along the tidal stream and whether or not a bathing beach is located along the estuary, bay or Gulf water that the tidal stream flows into.

3. Streamflow

Use USGS gage data (if a gage is located at a site or within a quarter mile of a site) or use the Stream Flow (Discharge) Measurement Form and follow the procedures outlined in the most recent TCEQ Surface Water Quality Monitoring Procedures, Volume 1, RG-415. If USGS gage data is used for a site, include that information as an attachment and list the streamflow on the sampling date below. If the stream flow taken at one site is representative of the flow at another site(s), then that flow can be used as the observed flow and should be documented below. If the stream flow measured at one site is different from another site, then stream flow should be taken at both sites. ~~22.82~~ cfs ~~77.42~~ 61.85 cfs MES

4. Water Quality Data (Field Parameters)

Field parameters should be collected in accordance with the procedures outlined in the most recent TCEQ Surface Water Quality Monitoring Procedures, Volume 1.

Air Temp ~~36~~ 35 °C Water Temp 30 °C Secchi 0.218 m

5. Riparian Zone (Mark dominant categories with L (Left Bank) and R (Right Bank). Bank orientation is determined by the investigator facing downstream.)

L,R Forest	____ Urban	____ Rip rap
____ Shrub dominated corridor	____ Pasture	____ Concrete
____ Herbaceous marsh	____ Row crops	Other (specify): ____
____ Mowed/maintained corridor	____ Denuded/Eroded bank	

6. Ease of bank access to the water body: ☒ Easy ☐ Moderately easy ☐ Moderately difficult ☐ Difficult

7. Please describe access opportunities or explain why the site is not easily accessible (Attach photos for documentation): make-shift boat ramp to water, bridge crossing.

8. Dominant Primary Substrate

☐ Cobble ☐ Sand ☐ Silt ☒ Mud/Clay ☐ Gravel ☐ Bedrock ☐ Rip rap ☐ Concrete

E MES 6/24
QC JB 6/25

Field Data Sheets – Basic RUAA Survey

Stream Name Navasota river below lake Limestone Site: ~~4~~ 5
Date: 5-29-2010 Time: 1338-1445

B. Primary Contact Water Recreation Evaluation:
- Primary contact recreation draft definition: Water recreation activities, such as wading by children, swimming, water skiing, diving, tubing, surfing, and whitewater kayaking, canoeing, and rafting, involving a significant risk of ingestion of water.

1. Were water recreation activities that involve a significant risk of ingestion (full body immersion) observed at this site?
X Yes ☐ No primary contact recreation activities were observed
a. Check the following boxes of primary contact recreation activities observed at the time of the sampling event at the site (Attach photos of the activities or lack of activities).

☐ Wading-Children ☐ Tubing ☐ No primary contact activities that commonly occur were observed
☐ Wading-Adults ☐ Surfing
X Swimming ☐ Whitewater-kayaking, canoeing, rafting
☐ Water skiing ☐ Other: _____
☐ Diving ☐ frequent public swimming-created by publicly owned land or commercial operations

b. Check the number of individuals observed at the site: ☐ None X 1-10 ☐ 11-20 ☐ 20-50 ☐ greater than 50

c. Check the following that apply regarding the individuals proximity to the water body.
☐ Water in mouth or nose of the individual X Primary touch: Individual's body (or portion) immersed in water
☐ Secondary touch: fishing, pets and related contact with water ☐ Individual is in a boat touching water
☐ Individual is on shore near water within 8 meters (25ft) of water ☐ Individual is well away from water between 8 and 30 meters (100 ft) ☐ Not applicable

2. If primary contact recreation activities are not observed, describe the physical characteristics of the water body that may hinder the frequency of primary contact (depth, etc.) (Attach photos, etc. for documentation).
N/A

3. Describe if there is public access (e.g. parks, roads, etc.) (Attach photos, maps, etc. for documentation).
~~make ship~~ make-shift boat ramp adjacent to bridge crossing

4. Is an area with primary contact recreation activities or a bathing beach (e.g. state/local parks with swimming, etc.) located near (e.g. within 5 miles upstream and downstream) this site? ~~N/A~~ NO

C. Secondary Contact Water Recreation Evaluation:
- Secondary contact recreation 1: Water recreation activities, such as fishing, commercial and recreational boating, and limited body contact incidental to shoreline activity, not involving a significant risk of water ingestion and that commonly occur.
- Secondary contact recreation 2: Water recreation activities, such as fishing, commercial and recreational boating, and limited body contact incidental to shoreline activity, not involving a significant risk of water ingestion but that occur less frequently than for secondary contact recreation 1 due to (1) physical characteristics of the water body and/or (2) limited public access.

1. Were water recreation activities observed at the site, but the nature of the recreation does not involve a significant risk of ingestion (e.g. secondary contact recreation activities)? ☐ Yes X No secondary contact recreation activities were observed
a. Check the following boxes of secondary contact recreation activities that were observed at the time of the sampling event at the site (Attach photos of activities or lack of activities).
☐ Fishing
☐ Boating-commercial, recreational
☐ Non-whitewater-kayaking, rafting, canoeing
X No secondary contact recreation activities were observed
☐ Other secondary contact activities: _____

Field Data Sheets – Basic RUAA Survey

Stream Name Navasota river below lake Limestone Site: #5
Date: 5-29-2010 Time: 1338-1445

b. Check the number of individuals observed at the site.
X None ☒ 1-10 ☐ 11-20 ☐ 20-50 ☐ greater than 50

c. Check the following that apply regarding the individuals proximity to the water body.
☐ Secondary touch: fishing, pets and related contact with water ☐ In a boat touching water
☐ Body on shore near water within 8 meters (25ft) of water ☐ Body well away from water between 8 and 30 meters (100 ft) ☒ N/A

2. If secondary contact recreation activities are not observed, describe the physical characteristics of the water body that may hinder the frequency of secondary contact (Attach photos, etc. for documentation).
none, individual participating in primary contact recreation.

3. If secondary contact recreation activities are observed, how often do water recreational activities occur that do not involve a significant risk of water ingestion? ☐ frequently ☐ infrequently ☒ unknown YES N/A
Please describe how often the activities occur? X Unknown ☐ Never ☐ Daily ☐ Monthly ☐ Yearly

4. If infrequently, what is the reason? ☐ physical characteristics of the water body ☐ limited public access ☐ other
If other, list reasons: N/A

5. Describe the physical characteristics of the water body that hinders the frequency of secondary contact recreation (depth, etc.) (Attach photos or depth measurements, etc. for documentation).
none

6. Describe why there is limited public access (e.g. lack of roads, river or stream banks overgrown, etc.) (Attach photos, maps, etc. for documentation).
~~none~~ same

D. Noncontact Recreation Evaluation

Noncontact recreation applies to water bodies where recreation activities do not involve a significant risk of water ingestion, and where primary and secondary contact recreation uses do not occur because of unsafe conditions, such as barge traffic.

1. Provide site-specific information and documentation (including photographs) regarding unsafe conditions, recreation activities, and presence or absence of water recreation activities.

Field Data Sheets – Basic RUAA Survey

Stream Name Navasota river below lake Limestone Site: # 5
Date: 5-29-2010 FDS Page 3 of 8 Time: 1338-1445

E. Stream Channel and Substantial Pools
Please check the following which best describes the river or stream: ☐ Wadeable ☑ Non-wadeable

1. Wadeable Streams N/A
Determine whether or not the average depth at the thalweg is greater than 0.5 meters and if there are substantial pools with a depth of 1 meter or greater. Walk an approximately 300 meter reach (total) at the site and take the following measurements within the 300 meter reach. Measurements should be taken during base flow conditions (sustained or typical dry, warm-weather flows between rainfall events, excluding unusual antecedent conditions of drought or wet weather

Also, take photos facing upstream, downstream, left bank, and right bank at the 30 meters, 150 meters, and 300 meters.
Photos #s (30 meters) Upstream____ Downstream____ Left Bank ____ Right Bank____
Photos #s (150 meters) Upstream____ Downstream____ Left Bank ____ Right Bank____
Photos #s (300 meters) Upstream____ Downstream____ Left Bank ____ Right Bank____

a) Substantial pools - Measure the length of each pool (if > 10 pools only measure 10 pools), the width (at the widest point), and the deepest depth. A substantial pool is considered a pool greater than 10 meters in length for the purposes of a Basic RUAA Survey. If depth and/or width measurements were not attainable, explain why.

	Length (meters)	Width (meters)	Depth (meters)
Pool 1			
Pool 2			
Pool 3			
Pool 4			
Pool 5			
Pool 6			
Pool 7			
Pool 8			
Pool 9			
Pool 10			

b)Average depth at the thalweg –Take depth measurements approximately every 30 meters to calculate an average depth at the thalweg (at least 10 measurements needed). If depth and/or width measurements were not attainable, explain why.

Distance	Depth (meters)
30 meters	
60 meters	
90 meters	
120 meters	
150 meters	
180 meters	
210 meters	
240 meters	
270 meters	
300 meters	
Average	

Field Data Sheets – Basic RUAA Survey

Stream Name Navasota River below lake Limestone Site: # 5
Date: 5.29.2010 Time: 1338-1445

c) Stream width - Measure (1) the width at one point which represents the typical average width of the 300 meter reach; (2) the width at the narrowest point of the stream within the 300 meter reach; and (3) the width at the widest point of the stream within the 300 meter reach.

Measurement Type	Width (meters)
Typical Average Width of 300 meter reach	
Width at narrowest point of the stream within 300 meter reach	
Width at the widest point of the stream within 300 meter reach	

d) Is there sufficient water within a 300 meter stream reach during base flow conditions to support primary contact recreation? ☑ Yes ☐ No
COMMENTS:

2. Non-wadeable Streams
If accessible, take 10 width measurements which represent typical widths of the 300 meter reach. If the water is too deep and not accessible record the estimated average width of the water body.

Also, take photos facing upstream, downstream, left bank, and right bank at .
Photos #s (30 meters) Upstream ✓ Downstream ✓ Left Bank ✓ Right Bank ✓ 3rd
Photos #s (150 meters) Upstream ✓ Downstream ✓ Left Bank ✓ Right Bank ✓ 1st
Photos #s (300 meters) Upstream ____ Downstream ____ Left Bank ✓ Right Bank ✓ 2nd

all pics not taken due to thick vegetation (& steep banks) impeding access/ view of water

# Measurements	Width (meters)
1	18
2	19
3	21
4	21m
5	23m
6	21m
7	22m
8	28m
9	28m
10	33m

Nemasota **Field Data Sheets – Basic RUAA Survey**

Stream Name river below lake limestone Site: # 5

Date: 5·29·2010 Time: 1338-1445

F. Additional RUAA Information

1. Check the following activities observed over the site reach.

- ☐ Drinking or water in mouth
- ☐ Bathing
- ☐ Walking
- ☐ Jogging/running
- ☐ Bicycling
- ☐ Standing
- ☐ Sitting
- ☐ Lying down/sleeping
- ☐ Playing on shoreline
- ☐ Picnicking
- ☐ Motorcycle/ATV
- ☐ Hunting/Trapping
- ☐ Wildlife watching
- ☒ None
- ☐ Other: _____

2. Are there permanent or long-term hydrologic modifications that are constructed and operated in a way that affects the recreational uses? ☐ Yes ☒ No (If yes, please provide supporting documentation and photos.)

Comments: _____

3. Check any channel obstructions that apply (Attach photos).

- ☐ Culverts
- ☐ Barbed wire
- ☐ Utility pipe
- ☐ Fences
- ☐ Dams
- ☒ Other (specify): trees lying in the water
- ☐ Log jams
- ☐ Thick vegetation
- ☐ Rip rap
- ☐ Low bridges
- Water control structure
- ☐ None

4. Check all surrounding conditions that promote recreational activities (Attach photos of evidence or unusual items of interest).

- ☐ Campgrounds
- ☐ Playgrounds
- ☒ Rural area
- ☐ Residential
- ☐ National forests
- ☐ Urban/suburban location
- ☐ Golf Course
- ☐ Sports Field
- ☐ Stairs/walkway
- ☒ Boating access (ramps)
- ☐ Beach
- ☒ Bridge crossing
- ☐ Commercial boating
- ☐ Trails/paths (hiking/biking)
- ☐ Paved parking lot
- ☐ Unimproved parking lot
- ☒ Roads (paved/unpaved)
- ☐ Populated area
- ☐ Docks or rafts
- ☐ Commercial outfitter
- ☐ Nearby school
- ☐ Power Line Corridor
- ☐ Parks (national/city/county/state)
- ☐ Public Property
- ☐ Other: _____
- ☐ None of the Above

Comments: _____

5. Check all surrounding conditions that impede recreational activities (Attach photos of evidence or unusual items of interest).

- ☒ Private Property
- ☐ No trespass sign
- ☐ Wildlife
- ☒ Steep slopes
- ☐ No public access
- ☐ No roads
- ☐ Fence
- ☐ Barge/ship traffic
- ☐ Industrial
- ☐ None of the Above
- ☐ Other: _____

Comments: _____

6. Check any indications of human use (Attach photos).

- ☐ Roads
- ☒ Rope swings
- ☐ Dock/platform
- ☒ Foot paths/prints
- ☐ RV/ATV Tracks
- ☐ Camping Sites
- ☒ Fire pit/ring
- ☒ Fishing Tackle
- ☐ NPDES Discharge
- ☐ Gates on corridor
- ☐ Children's toys
- ☐ Remnant's of Kid's play
- ☐ Organized event
- ☐ No Human Presence
- ☒ Other: boat ramp (make-shift)

Comments: rope swing downstream of bridge, shot up metal, gunshell, shot up up tree, foot prints, walking or ATV trail

Navasota **Field Data Sheets – Basic RUAA Survey**

Stream Name: river below lake limestone Site: # 5

Date: 5.29.2010 Time: 1330-1445

7. Check all water characteristics that apply (Attach photos).

Aquatic Vegetation: X absent ☐ rare ☐ common ☐ abundant

Algae Cover: X absent ☐ rare ☐ common ☐ abundant

Odor: X none ☐ rare ☐ common ☐ abundant

Color: ☐ clear ☐ green ☐ red X brown ☐ black

Bottom Deposit: ☐ sludge ☐ solids X fine sediments ☐ none ☐ other

Water Surface: X clear ☐ scum ☐ foam ☐ debris ☐ oil

Other:

8. Vertebrates Observed within 300 meter reach

Snakes X None ☐ slight presence ☐ moderate presence ☐ large presence

Water Dependent Birds X None ☐ slight presence ☐ moderate presence ☐ large presence

Alligators X None ☐ slight presence ☐ moderate presence ☐ large presence

Comments:

9. Mammals Observed within 300 meter reach

Wild X None ☐ slight presence ☐ moderate presence ☐ large presence

Domesticated Pets X None ☐ slight presence ☐ moderate presence ☐ large presence

Livestock X None ☐ slight presence ☐ moderate presence ☐ large presence

Feral Hogs X None ☐ slight presence ☐ moderate presence ☐ large presence

Comments:

10. Evidence of wild animals or evidence of birds, cattle, hogs, etc.

X Tracks ☐ Fecal droppings ☐ Bird nests

raccoon.

11. Garbage Observed

Large garbage in the channel X None ☐ Rare ☐ Common ☐ Abundant

Small garbage in the channel X None ☐ Rare ☐ Common ☐ Abundant

Bank Garbage ☐ None ☐ Rare X Common ☐ Abundant

Briefly describe the kinds of garbage observed: beverage containers, broken beer bottles, tires on make-shift boat ramp

12. Is the site located in a wildlife preserve with large wildlife (i.e waterfowl) population? ☐ Yes X No

13. Please document any other relevant information regarding recreational activities and the water body in general (for example, area outside of the stream reach evaluated).

Field Data Sheet - Basic RUAA Survey

Stream Flow (Discharge) Measurement

Stream: Navasota river below lake Limestone Date: 5.29.2010

Site: # 5 Site

Description: Domocrat Rd @ Navasota

Time Begin: Time End: Meter Type: Sontek Flowtracker

Observers: R. Thompson & L. Benavides Stream Width*: Section Width (W):

Observations:

Flow Boat

Section Midpoint (ft) (m)	Section Depth (ft) (m) (cm) (D)	Observational Depth** (ft)(m)	Velocity (V)		Flow (Q) (m^3/s) (ft^3/s) Q = (W)(D)(V)
			At Point (ft/s)(m/s)	Average (ft/s)(m/s)	

Field Data Sheets – Basic RUAA Survey

(should be completed for each site)

30.73906 -96.16280

Data Collectors & Contact Information:	C. Gauthier, M. Shepard, L. Benavides, R. Thompson
Date & Time: 5-28-10 09:30 - 1100	County Name: Brazos / Grimes
Stream Name: Navasota River below Lake Limestone	
Segment No. or nearest downstream Segment No.: 1209	
Description of Site: # 6 - Birdwell Property	

At any point during the Basic RUAA Survey it becomes apparent that primary contact recreation is clearly the use for the water body the investigator should stop conducting the UAA.

A. Stream Characteristics:

1. Check the following channel flow status that applies.

_ dry _ no flow X low _ normal _ high _ flooded

2. Check the following stream type that applies on the day of the survey:

_ Ephemeral: A stream which flows only during or immediately after a rainfall event, and contains no refuge pools capable of sustaining a viable community of aquatic organisms.

_ Intermittent: A stream which has a period of zero flow for at least one week during most years. Where flow records are available, a stream with a 7Q2 flow of less than 0.1 cubic feet per second is considered intermittent.

_ Intermittent w/ perennial pools: An intermittent stream which maintains persistent pools even when flow in the stream is less than 0.1 cubic feet per second.

✓ Perennial: A stream which flows continuously throughout the year. Perennial streams have a 7Q2 equal to or greater than 0.1 cubic feet per second.

_ Designated or unclassified tidal stream: A stream that is tidally influenced. If you checked this box, you will need to contact the Water Quality Standards Group and evaluate whether or not a bathing beach is located along the tidal stream and whether or not a bathing beach is located along the estuary, bay or Gulf water that the tidal stream flows into.

3. Streamflow

Use USGS gage data (if a gage is located at a site or within a quarter mile of a site) or use the Stream Flow (Discharge) Measurement Form and follow the procedures outlined in the most recent TCEQ Surface Water Quality Monitoring Procedures, Volume 1, RG-415. If USGS gage data is used for a site, include that information as an attachment and list the streamflow on the sampling date below. If the stream flow taken at one site is representative of the flow at another site(s), then that flow can be used as the observed flow and should be documented below. If the stream flow measured at one site is different from another site, then stream flow should be taken at both sites. ~~13.707~~ cfs MES 44.272

4. Water Quality Data (Field Parameters)

Field parameters should be collected in accordance with the procedures outlined in the most recent TCEQ Surface Water Quality Monitoring Procedures, Volume 1.

Air Temp 31 °C Water Temp 27 °C secchi: 162cm 0.162m

5. Riparian Zone (Mark dominant categories with L (Left Bank) and R (Right Bank). Bank orientation is determined by the investigator facing downstream.)

R&L

X Forest	_ Urban	_ Rip rap
_ Shrub dominated corridor	_ Pasture	_ Concrete
_ Herbaceous marsh	_ Row crops	Other (specify): _
_ Mowed/maintained corridor	_ Denuded/Eroded bank	

6. Ease of bank access to the water body: N/A X Easy _ Moderately easy X Moderately difficult _ Difficult

7. Please describe access opportunities or explain why the site is not easily accessible (Attach photos for documentation):

Private property: gently sloping bank at this access adjacent to off-road traffic.

8. Dominant Primary Substrate

_ Cobble _ Sand _ Silt ✓ Mud/Clay _ Gravel _ Bedrock _ Rip rap _ Concrete

E MES 6/24

QC JB 6/25

Field Data Sheets – Basic RUAA Survey

Stream Name Navasota Site: 6
Date: 5·28·10 Time: 0930-1100

B. Primary Contact Water Recreation Evaluation:
- Primary contact recreation draft definition: Water recreation activities, such as wading by children, swimming, water skiing, diving, tubing, surfing, and whitewater kayaking, canoeing, and rafting, involving a significant risk of ingestion of water.

1. Were water recreation activities that involve a significant risk of ingestion (full body immersion) observed at this site?
_ Yes ✓ No primary contact recreation activities were observed

a. Check the following boxes of primary contact recreation activities observed at the time of the sampling event at the site (Attach photos of the activities or lack of activities).

_ Wading-Children
_ Wading-Adults
_ Swimming
_ Water skiing
_ Diving
_ Tubing
_ Surfing
_ Whitewater-kayaking, canoeing, rafting
_ Other: _____
_ frequent public swimming-created by publicly owned land or commercial operations
✓ No primary contact activities that commonly occur were observed

b. Check the number of individuals observed at the site: ✓ None _ 1-10 _ 11-20 _ 20-50 _ greater than 50

c. Check the following that apply regarding the individuals proximity to the water body.
_ Water in mouth or nose of the individual _ Primary touch: Individual's body (or portion) immersed in water
_ Secondary touch: fishing, pets and related contact with water _ Individual is in a boat touching water
_ Individual is on shore near water within 8 meters (25ft) of water _ Individual is well away from water between 8 and 30 meters (100 ft) ✓ Not applicable

2. If primary contact recreation activities are not observed, describe the physical characteristics of the water body that may hinder the frequency of primary contact (depth, etc.) (Attach photos, etc. for documentation).
deep water in some areas/mid-channel, debris in channel

3. Describe if there is public access (e.g. parks, roads, etc.) (Attach photos, maps, etc. for documentation).
no public access, private property.

4. Is an area with primary contact recreation activities or a bathing beach (e.g. state/local parks with swimming, etc.) located near (e.g. within 5 miles upstream and downstream) this site? NO

C. Secondary Contact Water Recreation Evaluation:
- Secondary contact recreation 1: Water recreation activities, such as fishing, commercial and recreational boating, and limited body contact incidental to shoreline activity, not involving a significant risk of water ingestion and that commonly occur.
- Secondary contact recreation 2: Water recreation activities, such as fishing, commercial and recreational boating, and limited body contact incidental to shoreline activity, not involving a significant risk of water ingestion but that occur less frequently than for secondary contact recreation 1 due to (1) physical characteristics of the water body and/or (2) limited public access.

1. Were water recreation activities observed at the site, but the nature of the recreation does not involve a significant risk of ingestion (e.g. secondary contact recreation activities)? _ Yes ✓ No secondary contact recreation activities were observed

a. Check the following boxes of secondary contact recreation activities that were observed at the time of the sampling event at the site (Attach photos of activities or lack of activities).

_ Fishing
_ Boating-commercial, recreational
_ Non-whitewater-kayaking, rafting, canoeing
✓ No secondary contact recreation activities were observed
Other secondary contact activities: _____

Field Data Sheets – Basic RUAA Survey

Stream Name Navasota Site: Le
Date: 5.28.10 Time: 0930-1100

b. Check the number of individuals observed at the site.
✓ None ☐ 1-10 ☐ 11-20 ☐ 20-50 ☐ greater than 50

c. Check the following that apply regarding the individuals proximity to the water body.
✓ Secondary touch: fishing, pets and related contact with water ☐ In a boat touching water
☐ Body on shore near water within 8 meters (25ft) of water ☐ Body well away from water between 8 and 30 meters (100 ft) dog swimming in water

2. If secondary contact recreation activities are not observed, describe the physical characteristics of the water body that may hinder the frequency of secondary contact (Attach photos, etc. for documentation).
fallen trees and debris in water

3. If secondary contact recreation activities are observed, how often do water recreational activities occur that do not involve a significant risk of water ingestion? ☐ frequently ☐ infrequently ☑ unknown
Please describe how often the activities occur? ✓ Unknown ☐ Never ☐ Daily ☐ Monthly ☐ Yearly

4. If infrequently, what is the reason? ☐ physical characteristics of the water body ☐ limited public access ☐ other
If other, list reasons: N/A

5. Describe the physical characteristics of the water body that hinders the frequency of secondary contact recreation (depth, etc.) (Attach photos or depth measurements, etc. for documentation).
Same as above

6. Describe why there is limited public access (e.g. lack of roads, river or stream banks overgrown, etc.) (Attach photos, maps, etc. for documentation).
Same as above

D. Noncontact Recreation Evaluation

Noncontact recreation applies to water bodies where recreation activities do not involve a significant risk of water ingestion, and where primary and secondary contact recreation uses do not occur because of unsafe conditions, such as barge traffic.

1. Provide site-specific information and documentation (including photographs) regarding unsafe conditions, recreation activities, and presence or absence of water recreation activities.

Field Data Sheets – Basic RUAA Survey

Stream Name Navasota Site: 6
Date: 5/28/10 ~~FDS Page 3 of 8~~ Time: 0930-1700

E. Stream Channel and Substantial Pools
Please check the following which best describes the river or stream: ~~X~~ Wadeable X Non-wadeable

1. Wadeable Streams
Determine whether or not the average depth at the thalweg is greater than 0.5 meters and if there are substantial pools with a depth of 1 meter or greater. Walk an approximately 300 meter reach (total) at the site and take the following measurements within the 300 meter reach. Measurements should be taken during base flow conditions (sustained or typical dry, warm-weather flows between rainfall events, excluding unusual antecedent conditions of drought or wet weather

Also, take photos facing upstream, downstream, left bank, and right bank at the 30 meters, 150 meters, and 300 meters.
Photos #s (30 meters) Upstream ✓ Downstream ✓ Left Bank ✓ Right Bank ✓ 1
Photos #s (150 meters) Upstream ✓ Downstream ✓ Left Bank ✓ Right Bank ✓ 2
Photos #s (300 meters) Upstream ✓ Downstream ✓ Left Bank ✓ Right Bank ✓ 3

a) Substantial pools - Measure the length of each pool (if > 10 pools only measure 10 pools), the width (at the widest point), and the deepest depth. A substantial pool is considered a pool greater than 10 meters in length for the purposes of a Basic RUAA Survey. If depth and/or width measurements were not attainable, explain why. N/A

	Length (meters)	Width (meters)	Depth (meters)
Pool 1			
Pool 2			
Pool 3			
Pool 4			
Pool 5			
Pool 6			
Pool 7			
Pool 8			
Pool 9			
Pool 10			

b)Average depth at the thalweg –Take depth measurements approximately every 30 meters to calculate an average depth at the thalweg (at least 10 measurements needed). If depth and/or width measurements were not attainable, explain why.

Distance	(ft) Depth	(meters)
30 meters	4.3	1.3 m
60 meters	>7	>2.13
90 meters	>6	>1.83
120 meters	>5.3	>1.61
150 meters	1.18	0.36
180 meters	1.4	0.43
210 meters	>5.1	>1.55
240 meters	>6.5	>1.98
270 meters	>5	>1.52
300 meters	>5	>1.52
Average		>1.423

← stairs / BBQ / fish spot

Non-wadeable for much of stream, but wadeable measurements taken.

Field Data Sheets – Basic RUAA Survey

Stream Name Navasota Site: 6
Date: 5/28/10 Time: 0930-1100

c) Stream width - Measure (1) the width at one point which represents the typical average width of the 300 meter reach; (2) the width at the narrowest point of the stream within the 300 meter reach; and (3) the width at the widest point of the stream within the 300 meter reach.

Measurement Type	(ft) Width	(meters)
Typical Average Width of 300 meter reach	64	19.5
Width at narrowest point of the stream within 300 meter reach		19
Width at the widest point of the stream within 300 meter reach		36m

d) Is there sufficient water within a 300 meter stream reach during base flow conditions to support primary contact recreation? X Yes ☐ No
COMMENTS:

2. Non-wadeable Streams N/A
If accessible, take 10 width measurements which represent typical widths of the 300 meter reach. If the water is too deep and not accessible record the estimated average width of the water body.

Also, take photos facing upstream, downstream, left bank, and right bank at .
Photos #s (30 meters) Upstream____ Downstream____ Left Bank ____ Right Bank____
Photos #s (150 meters) Upstream____ Downstream____ Left Bank ____ Right Bank____
Photos #s (300 meters) Upstream____ Downstream____ Left Bank ____ Right Bank____

# Measurements	Width (meters)
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	

Field Data Sheets – Basic RUAA Survey

Stream Name Navasota Site: 4
Date: 5.28.10 Time: 0930-1100

F. Additional RUAA Information

1. Check the following activities observed over the site reach.

- ☐ Drinking or water in mouth
- ☐ Bathing
- ☐ Walking
- ☐ Jogging/running
- ☐ Bicycling
- ☐ Standing
- ☐ Sitting
- ☐ Lying down/sleeping
- ☐ Playing on shoreline
- ☐ Picnicking
- ☐ Motorcycle/ATV
- ☐ Hunting/Trapping
- ☐ Wildlife watching
- ☑ None
- ☐ Other: _____

2. Are there permanent or long-term hydrologic modifications that are constructed and operated in a way that affects the recreational uses? ☐ Yes ☑ No (If yes, please provide supporting documentation and photos.)
Comments: _____

3. Check any channel obstructions that apply (Attach photos).

- ☐ Culverts
- ☐ Barbed wire
- ☐ Utility pipe
- ☐ Fences
- ☐ Dams
- ☑ Other (specify): downed trees
- ☐ Log jams
- ☐ Thick vegetation
- ☐ Rip rap
- ☐ Low bridges
- ☐ Water control structure
- None

4. Check all surrounding conditions that promote recreational activities (Attach photos of evidence or unusual items of interest).

- ☐ Campgrounds
- ☐ Playgrounds
- ☑ Rural area
- ☑ Residential
- ☐ National forests
- ☐ Urban/suburban location
- ☐ Golf Course
- ☐ Sports Field
- ☑ Stairs/walkway
- ☐ Boating access (ramps)
- ☐ Beach
- ☐ Bridge crossing
- ☐ Commercial boating ATV
- ☑ Trails/paths (hiking/biking)
- ☐ Paved parking lot
- ☐ Unimproved parking lot
- ☐ Roads (paved/unpaved)
- ☐ Populated area
- ☐ Docks or rafts
- ☐ Commercial outfitter
- ☐ Nearby school
- ☐ Power Line Corridor
- ☐ Parks (national/city/county/state)
- ☐ Public Property
- ☐ Other: _____
- ☐ None of the Above

Comments: privately owned land, improved sandy area

5. Check all surrounding conditions that impede recreational activities (Attach photos of evidence or unusual items of interest).

- ☑ Private Property
- ☐ No trespass sign
- ☐ Wildlife
- ☑ Steep slopes
- ☑ No public access
- ☐ No roads
- ☑ Fence
- ☐ Barge/ship traffic
- ☐ Industrial
- ☐ None of the Above
- ☐ Other: _____

Comments: _____

6. Check any indications of human use (Attach photos).

- ☐ Roads
- ☐ Rope swings
- ☐ Dock/platform
- ☐ Foot paths/prints
- ☑ Other: stairs from reinforced flattened area
- ☑ RV/ATV Tracks
- ☐ Camping Sites
- ☐ Fire pit/ring
- ☐ Fishing Tackle
- ☐ NPDES Discharge
- ☐ Gates on corridor
- ☐ Children's toys
- ☐ Remnant's of Kid's play
- ☐ Organized event
- ☐ No Human Presence

Comments: _____

Field Data Sheets – Basic RUAA Survey

Stream Name Navasota River Site: #6
Date: 5.28.10 Time: 0930 - 1100

7. Check all water characteristics that apply (Attach photos).

Aquatic Vegetation: X absent _ rare _ common _ abundant
Algae Cover: X absent _ rare _ common _ abundant
Odor: X none _ rare _ common _ abundant
Color: _ clear _ green _ red X brown _ black
Bottom Deposit: _ sludge _ solids X fine sediments _ none _ other
Water Surface: X clear _ scum _ foam _ debris _ oil
Other:
dead animal odor near water

8. Vertebrates Observed within 300 meter reach

Snakes X None _ slight presence _ moderate presence _ large presence
Water Dependent Birds _ None X slight presence _ moderate presence _ large presence
Alligators X None _ slight presence _ moderate presence _ large presence
Comments: One

9. Mammals Observed within 300 meter reach

Wild X None _ slight presence _ moderate presence _ large presence
Domesticated Pets _ None X slight presence _ moderate presence _ large presence
Livestock X None _ slight presence _ moderate presence _ large presence
Feral Hogs X None _ slight presence _ moderate presence _ large presence
Comments: one of landowner's dogs using waterway.

10. Evidence of wild animals or evidence of birds, cattle, hogs, etc.

X Tracks _ Fecal droppings _ Bird nests
raccoon and deer, possum

11. Garbage Observed

Large garbage in the channel X None _ Rare _ Common _ Abundant
Small garbage in the channel X None _ Rare _ Common _ Abundant
Bank Garbage X None _ Rare _ Common _ Abundant
Briefly describe the kinds of garbage observed:

12. Is the site located in a wildlife preserve with large wildlife (i.e waterfowl) population? _ Yes X No

13. Please document any other relevant information regarding recreational activities and the water body in general (for example, area outside of the stream reach evaluated).

Field Data Sheet - Basic RUAA Survey

Stream Flow (Discharge) Measurement

Stream: Navasota River (1209) Date: 5-28-2010

Site: # 6 Site

Description: Birdwell Property

Time Begin: 1006 Time End: 1030 Meter Type: Sontek Flowtracker

Observers: C Gauthier R. Thompson Stream Width*: 64 ft Section Width (W): 3.2'

Observations: substate sandy near banks

Section Midpoint (ft) (m)	Section Depth (ft) (m) (cm) (D)	Observational Depth** (ft)(m)	Velocity (V) At Point (ft/s)(m/s)	Velocity (V) Average (ft/s)(m/s)	Flow (Q) (m^3/s) (ft^3/s) Q = (W)(D)(V)
1.6	0.25		0.02		
4.8	0.30		0.41		
8.0	~~0.41~~ 0.60		0.72		
11.2	0.60		0.76		
14.4	0.60		0.73		
17.6	0.50		0.97		
20.8	0.60		0.74		
24.0	0.80		0.87		
27.2	0.80		0.74		
30.4	0.80		0.76		
33.6	1.20		0.81		
36.8	1.30		0.80		
40.0	1.50		0.75		
43.2	1.70		0.80		
46.4	1.70		0.94		
49.6	1.60		0.80		
52.8	1.70		0.74		
56.0	1.60		0.43		
59.2	1.40		0.17		
62.4	0.30		-0.01		

← taken just downstream of bend in bank

Total Q: 13.707

7

Field Data Sheets – Basic RUAA Survey

(should be completed for each site)

Data Collectors & Contact Information: C. Gauthier, R. Thompson, L. Benavides, M. Shepard	
Date & Time: 5.29.2010 14:58-1530	County Name: Grimes / Brazos
Stream Name: Navasota River below Lake Limestone	
Segment No. or nearest downstream Segment No.: 1209	
Description of Site: CR 162 @ Navasota	

At any point during the Basic RUAA Survey it becomes apparent that primary contact recreation is clearly the use for the water body the investigator should stop conducting the UAA.

A. Stream Characteristics:

1. Check the following channel flow status that applies.

☐ dry ☐ no flow ☒ low ☐ normal ☐ high ☐ flooded

2. Check the following stream type that applies on the day of the survey:

Ephemeral: A stream which flows only during or immediately after a rainfall event, and contains no refuge pools capable of sustaining a viable community of aquatic organisms.

☐ Intermittent: A stream which has a period of zero flow for at least one week during most years. Where flow records are available, a stream with a 7Q2 flow of less than 0.1 cubic feet per second is considered intermittent.

☐ Intermittent w/ perennial pools: An intermittent stream which maintains persistent pools even when flow in the stream is less than 0.1 cubic feet per second.

☒ Perennial: A stream which flows continuously throughout the year. Perennial streams have a 7Q2 equal to or greater than 0.1 cubic feet per second.

☐ Designated or unclassified tidal stream: A stream that is tidally influenced. If you checked this box, you will need to contact the Water Quality Standards Group and evaluate whether or not a bathing beach is located along the tidal stream and whether or not a bathing beach is located along the estuary, bay or Gulf water that the tidal stream flows into.

3. Streamflow

Use USGS gage data (if a gage is located at a site or within a quarter mile of a site) or use the Stream Flow (Discharge) Measurement Form and follow the procedures outlined in the most recent TCEQ Surface Water Quality Monitoring Procedures, Volume 1, RG-415. If USGS gage data is used for a site, include that information as an attachment and list the streamflow on the sampling date below. If the stream flow taken at one site is representative of the flow at another site(s), then that flow can be used as the observed flow and should be documented below. If the stream flow measured at one site is different from another site, then stream flow should be taken at both sites. _____ cfs Flow similar to that at site #5, not taken here

4. Water Quality Data (Field Parameters)

Field parameters should be collected in accordance with the procedures outlined in the most recent TCEQ Surface Water Quality Monitoring Procedures, Volume 1.

Air Temp 31.6 °C Water Temp ~~32~~ 30 °C Secchi 0.192 m

5. Riparian Zone (Mark dominant categories with L (Left Bank) and R (Right Bank). Bank orientation is determined by the investigator facing downstream.)

L,R	Forest	_____	Urban	_____	Rip rap
_____	Shrub dominated corridor	_____	Pasture	_____	Concrete
_____	Herbaceous marsh	_____	Row crops	Other (specify):	_____
_____	Mowed/maintained corridor	_____	Denuded/Eroded bank		

6. Ease of bank access to the water body: ☐ Easy ☐ Moderately easy ☐ Moderately difficult ☒ Difficult

7. Please describe access opportunities or explain why the site is not easily accessible (Attach photos for documentation):

except at bridge crossing

8. Dominant Primary Substrate

☐ Cobble ☐ Sand ☐ Silt ☒ Mud/Clay ☐ Gravel ☐ Bedrock ☐ Rip rap ☐ Concrete

QC SB 6/28
EMBS 6/24

Field Data Sheets – Basic RUAA Survey

Stream Name Navasota River below lake Limestone Site: B 7
Date: 5.29.2010 Time: 1458-1530

B. Primary Contact Water Recreation Evaluation:
- Primary contact recreation draft definition: Water recreation activities, such as wading by children, swimming, water skiing, diving, tubing, surfing, and whitewater kayaking, canoeing, and rafting, involving a significant risk of ingestion of water.

1. Were water recreation activities that involve a significant risk of ingestion (full body immersion) observed at this site?
☐ Yes ☒ No primary contact recreation activities were observed
a. Check the following boxes of primary contact recreation activities observed at the time of the sampling event at the site (Attach photos of the activities or lack of activities).

☐ Wading-Children	☐ Tubing	☒ No primary contact activities that commonly occur were observed
☐ Wading-Adults	☐ Surfing	
☐ Swimming	☐ Whitewater-kayaking, canoeing, rafting	
☐ Water skiing	☐ Other: _____	
☐ Diving	☐ frequent public swimming-created by publicly owned land or commercial operations	

b. Check the number of individuals observed at the site: ☒ None ☐ 1-10 ☐ 11-20 ☐ 20-50 ☐ greater than 50

c. Check the following that apply regarding the individuals proximity to the water body.
☐ Water in mouth or nose of the individual ☐ Primary touch: Individual's body (or portion) immersed in water
☐ Secondary touch: fishing, pets and related contact with water ☐ Individual is in a boat touching water
☐ Individual is on shore near water within 8 meters (25ft) of water ☐ Individual is well away from water between 8 and 30 meters (100 ft) ☒ Not applicable

2. If primary contact recreation activities are not observed, describe the physical characteristics of the water body that may hinder the frequency of primary contact (depth, etc.) (Attach photos, etc. for documentation).
log jam beneath bridge, steep banks, fallen trees in water

3. Describe if there is public access (e.g. parks, roads, etc.) (Attach photos, maps, etc. for documentation).
bridge crossing

4. Is an area with primary contact recreation activities or a bathing beach (e.g. state/local parks with swimming, etc.) located near (e.g. within 5 miles upstream and downstream) this site? NO

C. Secondary Contact Water Recreation Evaluation:
- Secondary contact recreation 1: Water recreation activities, such as fishing, commercial and recreational boating, and limited body contact incidental to shoreline activity, not involving a significant risk of water ingestion and that commonly occur.
- Secondary contact recreation 2: Water recreation activities, such as fishing, commercial and recreational boating, and limited body contact incidental to shoreline activity, not involving a significant risk of water ingestion but that occur less frequently than for secondary contact recreation 1 due to (1) physical characteristics of the water body and/or (2) limited public access.

1. Were water recreation activities observed at the site, but the nature of the recreation does not involve a significant risk of ingestion (e.g. secondary contact recreation activities)? ☐ Yes ☒ No secondary contact recreation activities were observed
a. Check the following boxes of secondary contact recreation activities that were observed at the time of the sampling event at the site (Attach photos of activities or lack of activities).
☐ Fishing
☐ Boating-commercial, recreational
☐ Non-whitewater-kayaking, rafting, canoeing
☒ No secondary contact recreation activities were observed
☐ Other secondary contact activities: _____

Field Data Sheets – Basic RUAA Survey

Stream Name Nowasota River below lake Limestone Site: 8 7
Date: 5.29.2010 Time: 1455-1530

b. Check the number of individuals observed at the site.
X None ☐ 1-10 ☐ 11-20 ☐ 20-50 ☐ greater than 50

c. Check the following that apply regarding the individuals proximity to the water body. N/A
☐ Secondary touch: fishing, pets and related contact with water ☐ In a boat touching water
☐ Body on shore near water within 8 meters (25ft) of water ☐ Body well away from water between 8 and 30 meters (100 ft)

2. If secondary contact recreation activities are not observed, describe the physical characteristics of the water body that may hinder the frequency of secondary contact (Attach photos, etc. for documentation).
see above

3. If secondary contact recreation activities are observed, how often do water recreational activities occur that do not involve a significant risk of water ingestion? ☐ frequently ☐ infrequently ☒ unknown
Please describe how often the activities occur? X Unknown ☐ Never ☐ Daily ☐ Monthly ☐ Yearly

4. If infrequently, what is the reason? ☐ physical characteristics of the water body ☐ limited public access ☐ other
If other, list reasons: N/A

5. Describe the physical characteristics of the water body that hinders the frequency of secondary contact recreation (depth, etc.) (Attach photos or depth measurements, etc. for documentation).
same as above

6. Describe why there is limited public access (e.g. lack of roads, river or stream banks overgrown, etc.) (Attach photos, maps, etc. for documentation).
same as above

D. Noncontact Recreation Evaluation

Noncontact recreation applies to water bodies where recreation activities do not involve a significant risk of water ingestion, and where primary and secondary contact recreation uses do not occur because of unsafe conditions, such as barge traffic.

1. Provide site-specific information and documentation (including photographs) regarding unsafe conditions, recreation activities, and presence or absence of water recreation activities.

Field Data Sheets – Basic RUAA Survey

Stream Name Navasota River below Lake Limestone Site: 8 7
Date: 5.29.2010 FDS Page 3 of 8 Time: 1458-1530

E. Stream Channel and Substantial Pools
Please check the following which best describes the river or stream: ☐ Wadeable ☑ Non-wadeable

1. Wadeable Streams n/a
Determine whether or not the average depth at the thalweg is greater than 0.5 meters and if there are substantial pools with a depth of 1 meter or greater. Walk an approximately 300 meter reach (total) at the site and take the following measurements within the 300 meter reach. Measurements should be taken during base flow conditions (sustained or typical dry, warm-weather flows between rainfall events, excluding unusual antecedent conditions of drought or wet weather

Also, take photos facing upstream, downstream, left bank, and right bank at the 30 meters, 150 meters, and 300 meters.
Photos #s (30 meters) Upstream____ Downstream____ Left Bank ____ Right Bank____
Photos #s (150 meters) Upstream____ Downstream____ Left Bank ____ Right Bank____
Photos #s (300 meters) Upstream____ Downstream____ Left Bank ____ Right Bank____

a) Substantial pools - Measure the length of each pool (if > 10 pools only measure 10 pools), the width (at the widest point), and the deepest depth. A substantial pool is considered a pool greater than 10 meters in length for the purposes of a Basic RUAA Survey. If depth and/or width measurements were not attainable, explain why.

	Length (meters)	Width (meters)	Depth (meters)
Pool 1			
Pool 2			
Pool 3			
Pool 4			
Pool 5			
Pool 6			
Pool 7			
Pool 8			
Pool 9			
Pool 10			

b)Average depth at the thalweg –Take depth measurements approximately every 30 meters to calculate an average depth at the thalweg (at least 10 measurements needed). If depth and/or width measurements were not attainable, explain why.

Distance	Depth (meters)
30 meters	
60 meters	
90 meters	
120 meters	
150 meters	
180 meters	
210 meters	
240 meters	
270 meters	
300 meters	
Average	

Field Data Sheets – Basic RUAA Survey

Stream Name Navasota river below lake Limestone Site: 8 7
Date: 5·29·2010 Time: 1458-1530

c) Stream width - Measure (1) the width at one point which represents the typical average width of the 300 meter reach; (2) the width at the narrowest point of the stream within the 300 meter reach; and (3) the width at the widest point of the stream within the 300 meter reach.

Measurement Type	Width (meters)
Typical Average Width of 300 meter reach	
Width at narrowest point of the stream within 300 meter reach	
Width at the widest point of the stream within 300 meter reach	

d) Is there sufficient water within a 300 meter stream reach during base flow conditions to support primary contact recreation? ☒ Yes ☐ No
COMMENTS:

2. Non-wadeable Streams
If accessible, take 10 width measurements which represent typical widths of the 300 meter reach. If the water is too deep and not accessible record the estimated average width of the water body.

Also, take photos facing upstream, downstream, left bank, and right bank at .
Photos #s (~~30 meters~~) Upstream ✓ Downstream ✓ Left Bank ✓ Right Bank ✓ bridge
Photos #s (150 meters) Upstream____ Downstream____ Left Bank____ Right Bank____
Photos #s (300 meters) Upstream____ Downstream____ Left Bank____ Right Bank____

# Measurements	Width (meters)
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	

widths (m) ~~could see~~ MES
20.2 upstream of bridge
22.8 downstream of bridge

(m) (ft)
0.73 ~~depth~~ 2.4 upstream of bridge at bridge
0.61 2.0 downstream at bridge
- much deeper away from bridge

- could not access full 300 m due to overgrown, steep banks & too deep of water to wade up or down of bridge

Navasota **Field Data Sheets – Basic RUAA Survey**

Stream Name: River below lake Limestone Site: 8 7

Date: 5-29-2010 Time: 1458-1530

F. Additional RUAA Information

1. Check the following activities observed over the site reach.

- ☐ Drinking or water in mouth
- ☐ Bathing
- ☐ Walking
- ☐ Jogging/running
- ☐ Bicycling
- ☐ Standing
- ☐ Sitting
- ☐ Lying down/sleeping
- ☐ Playing on shoreline
- ☐ Picnicking
- ☐ Motorcycle/ATV
- ☐ Hunting/Trapping
- ☐ Wildlife watching
- ☒ None
- ☐ Other: _____

2. Are there permanent or long-term hydrologic modifications that are constructed and operated in a way that affects the recreational uses? ☐ Yes ☒ No (If yes, please provide supporting documentation and photos.)

Comments: _____

3. Check any channel obstructions that apply (Attach photos).

- ☐ Culverts
- ☐ Barbed wire
- ☐ Utility pipe
- ☐ Fences
- ☐ Dams
- ☒ Other (specify): fallen trees in channel
- ☒ Log jams
- ☐ Thick vegetation
- ☐ Rip rap
- ☐ Low bridges
- ☐ Water control structure
- ☐ None

4. Check all surrounding conditions that promote recreational activities (Attach photos of evidence or unusual items of interest).

- ☐ Campgrounds
- ☐ Playgrounds
- ☑ Rural area
- ☐ Residential
- ☐ National forests
- ☐ Urban/suburban location
- ☐ Golf Course
- ☐ Sports Field
- ☐ Stairs/walkway
- ☐ Boating access (ramps)
- ☐ Beach
- ☑ Bridge crossing
- ☐ Commercial boating
- ☐ Trails/paths (hiking/biking)
- ☐ Paved parking lot
- ☐ Unimproved parking lot
- ☑ Roads (paved/unpaved)
- ☐ Populated area
- ☐ Docks or rafts
- ☐ Commercial outfitter
- ☐ Nearby school
- ☐ Power Line Corridor
- ☐ Parks (national/city/county/state)
- ☐ Public Property
- ☐ Other: _____
- ☐ None of the Above

Comments: _____

5. Check all surrounding conditions that impede recreational activities (Attach photos of evidence or unusual items of interest).

- ☑ Private Property
- ☐ No trespass sign
- ☐ Wildlife
- ☑ Steep slopes
- ☐ No public access
- ☐ No roads
- ☑ Fence barbed wire fences parallel to bridge
- ☐ Barge/ship traffic
- ☐ Industrial
- ☐ None of the Above
- ☐ Other: _____

Comments: _____

6. Check any indications of human use (Attach photos).

- ☐ Roads
- ☐ Rope swings
- ☐ Dock/platform
- ☐ Foot paths/prints
- ☐ RV/ATV Tracks
- ☐ Camping Sites
- ☐ Fire pit/ring
- ☑ Fishing Tackle
- ☐ NPDES Discharge
- ☐ Gates on corridor
- ☐ Children's toys
- ☐ Remnant's of Kid's play
- ☐ Organized event
- ☐ No Human Presence
- ☒ Other: ~~shot~~ gun shell, fishing bobber,

Comments: _____

Navasota **Field Data Sheets – Basic RUAA Survey**

Stream Name: River below Lake Limestone Site: 7

Date: 5-29-2016 Time: 1458-1530

7. Check all water characteristics that apply (Attach photos).

Aquatic Vegetation: ☑ absent ☐ rare ☐ common ☐ abundant

Algae Cover: ☑ absent ☐ rare ☐ common ☐ abundant

Odor: ☑ none ☐ rare ☐ common ☐ abundant

Color: ☐ clear ☐ green ☐ red ☑ brown ☐ black

Bottom Deposit: ☐ sludge ☐ solids ☑ fine sediments ☐ none ☐ other

Water Surface: ☑ clear ☐ scum ☐ foam ☐ debris ☐ oil

Other:

8. Vertebrates Observed within 300 meter reach

Snakes	☑ None	☐ slight presence	☐ moderate presence	☐ large presence
Water Dependent Birds	☑ None	☐ slight presence	☐ moderate presence	☐ large presence
Alligators	☑ None	☐ slight presence	☐ moderate presence	☐ large presence

Comments:

9. Mammals Observed within 300 meter reach

Wild	☑ None	☐ slight presence	☐ moderate presence	☐ large presence
Domesticated Pets	☑ None	☐ slight presence	☐ moderate presence	☐ large presence
Livestock	☑ None	☐ slight presence	☐ moderate presence	☐ large presence
Feral Hogs	☑ None	☐ slight presence	☐ moderate presence	☐ large presence

Comments:

10. Evidence of wild animals or evidence of birds, cattle, hogs, etc.

☑ Tracks ☐ Fecal droppings ☐ Bird nests

11. Garbage Observed

Large garbage in the channel	☐ None	☐ Rare	☑ Common	☐ Abundant
Small garbage in the channel	☐ None	☑ Rare	☐ Common	☐ Abundant
Bank Garbage	☐ None	☑ Rare	☐ Common	☐ Abundant

chair, tires, food wrappers, drink containers

Briefly describe the kinds of garbage observed:

12. Is the site located in a wildlife preserve with large wildlife (i.e waterfowl) population? ☐ Yes ☑ No

13. Please document any other relevant information regarding recreational activities and the water body in general (for example, area outside of the stream reach evaluated).

Field Data Sheet - Basic RUAA Survey

Stream Flow (Discharge) Measurement

Stream: Navasota river below lake limestone Date: 9.29.2010

Site: 8 7 Site

Description: CR 162 @ Navasota

Time Begin: _____ Time End: _____ Meter Type: Sontek Flowtracker

Observers: _____ Stream Width*: _____ Section Width (W): _____

Observations: _____

Section Midpoint (ft) (m)	Section Depth (ft) (m) (cm) (D)	Observational Depth** (ft)(m)	Velocity (V)		Flow (Q) (m^3/s) (ft^3/s) Q = (W)(D)(V)
			At Point (ft/s)(m/s)	Average (ft/s)(m/s)	

Flow similar to that at site #5, not taken here
- non wadeable

Field Data Sheets – Basic RUAA Survey

(should be completed for each site)

Data Collectors & Contact Information: M. Shepard, C. Gauthier, R. Thompson, L. Benavides	
Date & Time: 5/30/10	County Name: Brazos / Grimes
Stream Name: Navasota River below Lake Limestone	
Segment No. or nearest downstream Segment No.: 1209	
Description of Site: #8 - Dudley Property North	

At any point during the Basic RUAA Survey it becomes apparent that primary contact recreation is clearly the use for the water body the investigator should stop conducting the UAA.

No access – property owner never gave permission

A. Stream Characteristics:

1. Check the following channel flow status that applies.
_ dry _ no flow _ low _ normal _ high _ flooded

2. Check the following stream type that applies on the day of the survey:
_ Ephemeral: A stream which flows only during or immediately after a rainfall event, and contains no refuge pools capable of sustaining a viable community of aquatic organisms.
_ Intermittent: A stream which has a period of zero flow for at least one week during most years. Where flow records are available, a stream with a 7Q2 flow of less than 0.1 cubic feet per second is considered intermittent.
_ Intermittent w/ perennial pools: An intermittent stream which maintains persistent pools even when flow in the stream is less than 0.1 cubic feet per second.
_ Perennial: A stream which flows continuously throughout the year. Perennial streams have a 7Q2 equal to or greater than 0.1 cubic feet per second.
_ Designated or unclassified tidal stream: A stream that is tidally influenced. If you checked this box, you will need to contact the Water Quality Standards Group and evaluate whether or not a bathing beach is located along the tidal stream and whether or not a bathing beach is located along the estuary, bay or Gulf water that the tidal stream flows into.

3. Streamflow
Use USGS gage data (if a gage is located at a site or within a quarter mile of a site) or use the Stream Flow (Discharge) Measurement Form and follow the procedures outlined in the most recent TCEQ Surface Water Quality Monitoring Procedures, Volume 1, RG-415. If USGS gage data is used for a site, include that information as an attachment and list the streamflow on the sampling date below. If the stream flow taken at one site is representative of the flow at another site(s), then that flow can be used as the observed flow and should be documented below. If the stream flow measured at one site is different from another site, then stream flow should be taken at both sites. _____ cfs

4. Water Quality Data (Field Parameters)
Field parameters should be collected in accordance with the procedures outlined in the most recent TCEQ Surface Water Quality Monitoring Procedures, Volume 1.
Air Temp _____ ° C Water Temp _____ ° C

5. Riparian Zone (Mark dominant categories with L (Left Bank) and R (Right Bank). Bank orientation is determined by the investigator facing downstream.)

_____ Forest	_____ Urban	_____ Rip rap
_____ Shrub dominated corridor	_____ Pasture	_____ Concrete
_____ Herbaceous marsh	_____ Row crops	Other (specify): _____
_____ Mowed/maintained corridor	_____ Denuded/Eroded bank	

6. Ease of bank access to the water body: _ Easy _ Moderately easy _ Moderately difficult _ Difficult

7. Please describe access opportunities or explain why the site is not easily accessible (Attach photos for documentation):

_____

_____

8. Dominant Primary Substrate
_ Cobble _ Sand _ Silt _ Mud/Clay _ Gravel _ Bedrock _ Rip rap _ Concrete

Field Data Sheets – Basic RUAA Survey

(should be completed for each site)

Data Collectors & Contact Information: C. Gauthier, R. Thompson, L. Bernardes, M. Shepard	
Date & Time: 5.29.2010 1610-1630	County Name: Grimes / Brazos
Stream Name: Navasota River below Lake Limestone	
Segment No. or nearest downstream Segment No.: 1209	
Description of Site: Roede Rd @ Navasota	

At any point during the Basic RUAA Survey it becomes apparent that primary contact recreation is clearly the use for the water body the investigator should stop conducting the UAA.

A. Stream Characteristics:

1. Check the following channel flow status that applies.

☐ dry ☐ no flow ☑ low ☐ normal ☐ high ☐ flooded

2. Check the following stream type that applies on the day of the survey:

☐ Ephemeral: A stream which flows only during or immediately after a rainfall event, and contains no refuge pools capable of sustaining a viable community of aquatic organisms.

☐ Intermittent: A stream which has a period of zero flow for at least one week during most years. Where flow records are available, a stream with a 7Q2 flow of less than 0.1 cubic feet per second is considered intermittent.

☐ Intermittent w/ perennial pools: An intermittent stream which maintains persistent pools even when flow in the stream is less than 0.1 cubic feet per second.

☑ Perennial: A stream which flows continuously throughout the year. Perennial streams have a 7Q2 equal to or greater than 0.1 cubic feet per second.

☐ Designated or unclassified tidal stream: A stream that is tidally influenced. If you checked this box, you will need to contact the Water Quality Standards Group and evaluate whether or not a bathing beach is located along the tidal stream and whether or not a bathing beach is located along the estuary, bay or Gulf water that the tidal stream flows into.

3. Streamflow

Use USGS gage data (if a gage is located at a site or within a quarter mile of a site) or use the Stream Flow (Discharge) Measurement Form and follow the procedures outlined in the most recent TCEQ Surface Water Quality Monitoring Procedures, Volume 1, RG-415. If USGS gage data is used for a site, include that information as an attachment and list the streamflow on the sampling date below. If the stream flow taken at one site is representative of the flow at another site(s), then that flow can be used as the observed flow and should be documented below. If the stream flow measured at one site is different from another site, then stream flow should be taken at both sites. ___/___ cfs

No flow taken, too deep (>3ft) & unable to do flow boat

4. Water Quality Data (Field Parameters)

Field parameters should be collected in accordance with the procedures outlined in the most recent TCEQ Surface Water Quality Monitoring Procedures, Volume 1.

Air Temp 36 °C Water Temp 32 °C Secchi 0.220 m

5. Riparian Zone (Mark dominant categories with L (Left Bank) and R (Right Bank). Bank orientation is determined by the investigator facing downstream.)

L,R Forest	___ Urban	___ Rip rap
___ Shrub dominated corridor	___ Pasture	___ Concrete
___ Herbaceous marsh	___ Row crops	Other (specify): ___
___ Mowed/maintained corridor	___ Denuded/Eroded bank	

6. Ease of bank access to the water body: ☒ Easy ☐ Moderately easy ☐ Moderately difficult ☐ Difficult

7. Please describe access opportunities or explain why the site is not easily accessible (Attach photos for documentation):

Rose road dead ends into Navasota River, a couple spots to get in, private property up & down - fenced to river

8. Dominant Primary Substrate

☐ Cobble ☐ Sand ☐ Silt ☐ Mud/Clay ☐ Gravel ☐ Bedrock ☐ Rip rap ☐ Concrete ☒ unknown

QC JB 6/29
E MES 6/24

Field Data Sheets – Basic RUAA Survey

Stream Name Navasota River below Lake Limestone Site: 6 9
Date: 5.29.2010 Time: 1610-1630

B. Primary Contact Water Recreation Evaluation:
- Primary contact recreation draft definition: Water recreation activities, such as wading by children, swimming, water skiing, diving, tubing, surfing, and whitewater kayaking, canoeing, and rafting, involving a significant risk of ingestion of water.

1. Were water recreation activities that involve a significant risk of ingestion (full body immersion) observed at this site?
☐ Yes ☒ No primary contact recreation activities were observed
a. Check the following boxes of primary contact recreation activities observed at the time of the sampling event at the site (Attach photos of the activities or lack of activities).

☐ Wading-Children	☐ Tubing	☒ No primary contact activities that commonly occur were observed
☐ Wading-Adults	☐ Surfing	
☐ Swimming	☐ Whitewater-kayaking, canoeing, rafting	
☐ Water skiing	☐ Other: _____	
☐ Diving	☐ frequent public swimming-created by publicly owned land or commercial operations	

b. Check the number of individuals observed at the site: ☒ None ☐ 1-10 ☐ 11-20 ☐ 20-50 ☐ greater than 50

c. Check the following that apply regarding the individuals proximity to the water body.
☐ Water in mouth or nose of the individual ☐ Primary touch: Individual's body (or portion) immersed in water
☐ Secondary touch: fishing, pets and related contact with water ☐ Individual is in a boat touching water
☐ Individual is on shore near water within 8 meters (25ft) of water ☐ Individual is well away from water between 8 and 30 meters (100 ft) ☒ Not applicable

2. If primary contact recreation activities are not observed, describe the physical characteristics of the water body that may hinder the frequency of primary contact (depth, etc.) (Attach photos, etc. for documentation).
water flowing fast, water depth >3-ft upstream of dam/spillway

3. Describe if there is public access (e.g. parks, roads, etc.) (Attach photos, maps, etc. for documentation).
Rose road dead ends into river, unpaved parking area at dead end.

4. Is an area with primary contact recreation activities or a bathing beach (e.g. state/local parks with swimming, etc.) located near (e.g. within 5 miles upstream and downstream) this site? ~~N/A~~ NO

C. Secondary Contact Water Recreation Evaluation:
- Secondary contact recreation 1: Water recreation activities, such as fishing, commercial and recreational boating, and limited body contact incidental to shoreline activity, not involving a significant risk of water ingestion and that commonly occur.
- Secondary contact recreation 2: Water recreation activities, such as fishing, commercial and recreational boating, and limited body contact incidental to shoreline activity, not involving a significant risk of water ingestion but that occur less frequently than for secondary contact recreation 1 due to (1) physical characteristics of the water body and/or (2) limited public access.

1. Were water recreation activities observed at the site, but the nature of the recreation does not involve a significant risk of ingestion (e.g. secondary contact recreation activities)? ☐ Yes ☒ No secondary contact recreation activities were observed
a. Check the following boxes of secondary contact recreation activities that were observed at the time of the sampling event at the site (Attach photos of activities or lack of activities).
☐ Fishing
☐ Boating-commercial, recreational
☐ Non-whitewater-kayaking, rafting, canoeing
☒ No secondary contact recreation activities were observed
☐ Other secondary contact activities: _____

Field Data Sheets – Basic RUAA Survey

Stream Name Navasota River below Lake Limestone Site: 8 9
Date: 5.29.2010 Time: 1610-1630

b. Check the number of individuals observed at the site.
X None ☐ 1-10 ☐ 11-20 ☐ 20-50 ☐ greater than 50

c. Check the following that apply regarding the individuals proximity to the water body. N/A
☐ Secondary touch: fishing, pets and related contact with water ☐ In a boat touching water
☐ Body on shore near water within 8 meters (25ft) of water ☐ Body well away from water between 8 and 30 meters (100 ft)

2. If secondary contact recreation activities are not observed, describe the physical characteristics of the water body that may hinder the frequency of secondary contact (Attach photos, etc. for documentation).
Same as above; some downed trees in channel, no area for boat launching

3. If secondary contact recreation activities are observed, how often do water recreational activities occur that do not involve a significant risk of water ingestion? ☐ frequently ☐ infrequently ☒ unknown N/A
Please describe how often the activities occur? X Unknown ☐ Never ☐ Daily ☐ Monthly ☐ Yearly

4. If infrequently, what is the reason? ☐ physical characteristics of the water body ☐ limited public access ☐ other
If other, list reasons: N/A

5. Describe the physical characteristics of the water body that hinders the frequency of secondary contact recreation (depth, etc.) (Attach photos or depth measurements, etc. for documentation).
Same as above

6. Describe why there is limited public access (e.g. lack of roads, river or stream banks overgrown, etc.) (Attach photos, maps, etc. for documentation).
Same as above

D. Noncontact Recreation Evaluation

Noncontact recreation applies to water bodies where recreation activities do not involve a significant risk of water ingestion, and where primary and secondary contact recreation uses do not occur because of unsafe conditions, such as barge traffic.

1. Provide site-specific information and documentation (including photographs) regarding unsafe conditions, recreation activities, and presence or absence of water recreation activities.

Field Data Sheets – Basic RUAA Survey

Stream Name Navasota River below Lake Limestone Site: 8 9
Date: 5.29.2010 FDS Page 3 of 8 Time: 1610-1630

E. Stream Channel and Substantial Pools
Please check the following which best describes the river or stream: ☐ Wadeable ☒ Non-wadeable

1. Wadeable Streams N/A
Determine whether or not the average depth at the thalweg is greater than 0.5 meters and if there are substantial pools with a depth of 1 meter or greater. Walk an approximately 300 meter reach (total) at the site and take the following measurements within the 300 meter reach. Measurements should be taken during base flow conditions (sustained or typical dry, warm-weather flows between rainfall events, excluding unusual antecedent conditions of drought or wet weather

Also, take photos facing upstream, downstream, left bank, and right bank at the 30 meters, 150 meters, and 300 meters.
Photos #s (30 meters) Upstream____ Downstream____ Left Bank ____ Right Bank____
Photos #s (150 meters) Upstream____ Downstream____ Left Bank ____ Right Bank____
Photos #s (300 meters) Upstream____ Downstream____ Left Bank ____ Right Bank____

a) Substantial pools - Measure the length of each pool (if > 10 pools only measure 10 pools), the width (at the widest point), and the deepest depth. A substantial pool is considered a pool greater than 10 meters in length for the purposes of a Basic RUAA Survey. If depth and/or width measurements were not attainable, explain why.

	Length (meters)	Width (meters)	Depth (meters)
Pool 1			
Pool 2			
Pool 3			
Pool 4			
Pool 5			
Pool 6			
Pool 7			
Pool 8			
Pool 9			
Pool 10			

b)Average depth at the thalweg –Take depth measurements approximately every 30 meters to calculate an average depth at the thalweg (at least 10 measurements needed). If depth and/or width measurements were not attainable, explain why.

Distance	Depth (meters)
30 meters	
60 meters	
90 meters	
120 meters	
150 meters	
180 meters	
210 meters	
240 meters	
270 meters	
300 meters	
Average	

Field Data Sheets – Basic RUAA Survey

Stream Name Navasota river below lake Limestone Site: B 9
Date: 5.29.2010 Time: 1610-1630

c) Stream width - Measure (1) the width at one point which represents the typical average width of the 300 meter reach; (2) the width at the narrowest point of the stream within the 300 meter reach; and (3) the width at the widest point of the stream within the 300 meter reach.

Measurement Type	Width (meters)
Typical Average Width of 300 meter reach	
Width at narrowest point of the stream within 300 meter reach	
Width at the widest point of the stream within 300 meter reach	

d) Is there sufficient water within a 300 meter stream reach during base flow conditions to support primary contact recreation? ☒ Yes ☐ No
COMMENTS:

2. Non-wadeable Streams
If accessible, take 10 width measurements which represent typical widths of the 300 meter reach. If the water is too deep and not accessible record the estimated average width of the water body.

Also, take photos facing upstream, downstream, left bank, and right bank at .
Photos #s (30 meters) Upstream ✓ Downstream ✓ Left Bank ✓ Right Bank ✓ at dam
Photos #s (150 meters) Upstream____ Downstream____ Left Bank ____ Right Bank____
Photos #s (300 meters) Upstream____ Downstream____ Left Bank ____ Right Bank____

# Measurements	Width (meters)	
1	20m	upstream of dam
2	21m	downstream
3	20m	upstream
4		
5		
6		
7		
8		
9		
10		

depth > 3 ft.

- unable to walk banks due to fences, thick vegetation, & steep slope, & water was too deep to wade

Stream Name Nawasota River below Lake Limestone **Field Data Sheets – Basic RUAA Survey** Site: 6 9
Date: 5.29.2010 Time: 1610-1630

F. Additional RUAA Information

1. Check the following activities observed over the site reach.

- ☐ Drinking or water in mouth
- ☐ Bathing
- ☐ Walking
- ☐ Jogging/running
- ☐ Bicycling
- ☐ Standing
- ☐ Sitting
- ☐ Lying down/sleeping
- ☐ Playing on shoreline
- ☐ Picnicking
- ☐ Motorcycle/ATV
- ☐ Hunting/Trapping
- ☐ Wildlife watching
- ☒ None
- ☐ Other: _____

2. Are there permanent or long-term hydrologic modifications that are constructed and operated in a way that affects the recreational uses? ☒ Yes ☐ No (If yes, please provide supporting documentation and photos.)
Comments: dam across river

3. Check any channel obstructions that apply (Attach photos). upstream of dam

- ☐ Culverts
- ☐ Barbed wire
- ☐ Utility pipe
- ☐ Fences
- ☐ Dams
- ☐ Other (specify): _____
- ☑ Log jams
- ☐ Thick vegetation
- ☐ Rip rap
- ☐ Low bridges
- Water control structure
- ☐ None

4. Check all surrounding conditions that promote recreational activities (Attach photos of evidence or unusual items of interest).

- ☐ Campgrounds
- ☐ Playgrounds
- ☑ Rural area
- ☑ Residential dam rose
- ☐ National forests
- ☐ Urban/suburban location
- ☐ Golf Course
- ☐ Sports Field
- ☐ Stairs/walkway
- ☐ Boating access (ramps)
- ☐ Beach
- ☐ Bridge crossing
- ☐ Commercial boating
- ☐ Trails/paths (hiking/biking)
- ☐ Paved parking lot
- ☑ Unimproved parking lot
- ☑ Roads (paved/unpaved) Rose Rd.
- ☐ Populated area
- ☐ Docks or rafts
- ☐ Commercial outfitter
- ☐ Nearby school
- ☐ Power Line Corridor
- ☐ Parks (national/city/county/state)
- ☐ Public Property
- ☐ Other: _____
- ☐ None of the Above

Comments: _____

5. Check all surrounding conditions that impede recreational activities (Attach photos of evidence or unusual items of interest).

- ☒ Private Property
- ☐ No trespass sign
- ☐ Wildlife
- ☐ Steep slopes
- ☐ No public access
- ☐ No roads
- ☒ Fence
- ☐ Barge/ship traffic
- ☐ Industrial
- ☐ None of the Above
- ☐ Other: _____

Comments: dam and fast-flowing water

6. Check any indications of human use (Attach photos).

- ☐ Roads
- ☐ Rope swings
- ☐ Dock/platform
- ☐ Foot paths/prints
- ☐ RV/ATV Tracks
- ☐ Camping Sites
- ☒ Fire pit/ring
- ☐ Fishing Tackle
- ☐ NPDES Discharge
- ☐ Gates on corridor
- ☐ Children's toys
- ☐ Remnant's of Kid's play
- ☐ Organized event
- ☐ No Human Presence
- ☒ Other: shotgun shells, target

Comments: firepit, trash, piece of a chair

Navasota **Field Data Sheets – Basic RUAA Survey**

Stream Name River below Lake Limestone Site: 8 9

Date: 5·29·2010 Time: 1610-1630

7. Check all water characteristics that apply (Attach photos).

Aquatic Vegetation: X absent ☐ rare ☐ common ☐ abundant some in man made channel to pumping Station

Algae Cover: X absent ☐ rare ☐ common ☐ abundant

Odor: X none ☐ rare ☐ common ☐ abundant

Color: ☐ clear ☐ green ☐ red X brown ☐ black

Bottom Deposit: ☐ sludge ☐ solids ☐ fine sediments ☐ none ☐ other unknown

Water Surface: X clear ☐ scum ☐ foam ☐ debris ☐ oil

Other:

8. Vertebrates Observed within 300 meter reach

Snakes	X None	☐ slight presence	☐ moderate presence	☐ large presence
Water Dependent Birds	X None	☐ slight presence	☐ moderate presence	☐ large presence
Alligators	X None	☐ slight presence	☐ moderate presence	☐ large presence

Comments:

9. Mammals Observed within 300 meter reach

Wild	X None	☐ slight presence	☐ moderate presence	☐ large presence
Domesticated Pets	X None	☐ slight presence	☐ moderate presence	☐ large presence
Livestock	X None	☐ slight presence	☐ moderate presence	☐ large presence
Feral Hogs	X None	☐ slight presence	☐ moderate presence	☐ large presence

Comments:

10. Evidence of wild animals or evidence of birds, cattle, hogs, etc.

☐ Tracks X Fecal droppings ☐ Bird nests

11. Garbage Observed

Large garbage in the channel	X None	☐ Rare	☐ Common	☐ Abundant
Small garbage in the channel	☐ None	X Rare	☐ Common	☐ Abundant
Bank Garbage	☐ None	☐ Rare	X Common	☐ Abundant

beverage containers

Briefly describe the kinds of garbage observed: In parking area food wrappers, bait canisters.

12. Is the site located in a wildlife preserve with large wildlife (i.e waterfowl) population? ☐ Yes X No

13. Please document any other relevant information regarding recreational activities and the water body in general (for example, area outside of the stream reach evaluated).

Field Data Sheet - Basic RUAA Survey

Stream Flow (Discharge) Measurement

Stream: Navasota river below lake limestone Date:

Site: B 9 Site

Description: Reese Rd @ Navasota

Time Begin: Time End: Meter Type: Sontek Flowtracker

Observers: Stream Width*: Section Width (W):

Observations:

Section Midpoint (ft) (m)	Section Depth (ft) (m) (cm) (D)	Observational Depth** (ft)(m)	Velocity (V)		Flow (Q) (m^3/s) (ft^3/s) Q = (W)(D)(V)
			At Point (ft/s)(m/s)	Average (ft/s)(m/s)	

No flow taken too deep

Field Data Sheets – Basic RUAA Survey

(should be completed for each site)

Data Collectors & Contact Information:	
Date & Time: 5/30/10	County Name: Grimes/Brazos
Stream Name: Navasota River Below Lake Limestone	
Segment No. or nearest downstream Segment No.: 1209	
Description of Site: #10 - Dudley Property South	

At any point during the Basic RUAA Survey it becomes apparent that primary contact recreation is clearly the use for the water body the investigator should stop conducting the UAA.

No access – no ~~landowner~~ landowner permission given

A. Stream Characteristics:

1. Check the following channel flow status that applies.

☐ dry ☐ no flow ☐ low ☐ normal ☐ high ☐ flooded

2. Check the following stream type that applies on the day of the survey:

☐ Ephemeral: A stream which flows only during or immediately after a rainfall event, and contains no refuge pools capable of sustaining a viable community of aquatic organisms.

☐ Intermittent: A stream which has a period of zero flow for at least one week during most years. Where flow records are available, a stream with a 7Q2 flow of less than 0.1 cubic feet per second is considered intermittent.

☐ Intermittent w/ perennial pools: An intermittent stream which maintains persistent pools even when flow in the stream is less than 0.1 cubic feet per second.

☐ Perennial: A stream which flows continuously throughout the year. Perennial streams have a 7Q2 equal to or greater than 0.1 cubic feet per second.

☐ Designated or unclassified tidal stream: A stream that is tidally influenced. If you checked this box, you will need to contact the Water Quality Standards Group and evaluate whether or not a bathing beach is located along the tidal stream and whether or not a bathing beach is located along the estuary, bay or Gulf water that the tidal stream flows into.

3. Streamflow

Use USGS gage data (if a gage is located at a site or within a quarter mile of a site) or use the Stream Flow (Discharge) Measurement Form and follow the procedures outlined in the most recent TCEQ Surface Water Quality Monitoring Procedures, Volume 1, RG-415. If USGS gage data is used for a site, include that information as an attachment and list the streamflow on the sampling date below. If the stream flow taken at one site is representative of the flow at another site(s), then that flow can be used as the observed flow and should be documented below. If the stream flow measured at one site is different from another site, then stream flow should be taken at both sites. _____ cfs

4. Water Quality Data (Field Parameters)

Field parameters should be collected in accordance with the procedures outlined in the most recent TCEQ Surface Water Quality Monitoring Procedures, Volume 1.

Air Temp _____° C Water Temp _____° C

5. Riparian Zone (Mark dominant categories with L (Left Bank) and R (Right Bank). Bank orientation is determined by the investigator facing downstream.)

_____ Forest	_____ Urban	_____ Rip rap
_____ Shrub dominated corridor	_____ Pasture	_____ Concrete
_____ Herbaceous marsh	_____ Row crops	Other (specify): _____
_____ Mowed/maintained corridor	_____ Denuded/Eroded bank	

6. Ease of bank access to the water body: ☐ Easy ☐ Moderately easy ☐ Moderately difficult ☐ Difficult

7. Please describe access opportunities or explain why the site is not easily accessible (Attach photos for documentation):

_____

_____

8. Dominant Primary Substrate

☐ Cobble ☐ Sand ☐ Silt ☐ Mud/Clay ☐ Gravel ☐ Bedrock ☐ Rip rap ☐ Concrete

11

Field Data Sheets – Basic RUAA Survey

(should be completed for each site)

Data Collectors & Contact Information: C Gauthier M. Shepard R. Thompson L. Benavides	
Date & Time: 5·29·2010 16:52 - 17:28	County Name: Grimes / Brazos
Stream Name: Navasota bet river below lake limestone	
Segment No. or nearest downstream Segment No.: 1209	
Description of Site: SH 30 @ Navasota	

At any point during the Basic RUAA Survey it becomes apparent that primary contact recreation is clearly the use for the water body the investigator should stop conducting the UAA.

A. Stream Characteristics:

1. Check the following channel flow status that applies.

☐ dry ☐ no flow ☒ low ☐ normal ☐ high ☐ flooded

2. Check the following stream type that applies on the day of the survey:

☐ Ephemeral: A stream which flows only during or immediately after a rainfall event, and contains no refuge pools capable of sustaining a viable community of aquatic organisms.

☐ Intermittent: A stream which has a period of zero flow for at least one week during most years. Where flow records are available, a stream with a 7Q2 flow of less than 0.1 cubic feet per second is considered intermittent.

☐ Intermittent w/ perennial pools: An intermittent stream which maintains persistent pools even when flow in the stream is less than 0.1 cubic feet per second.

☒ Perennial: A stream which flows continuously throughout the year. Perennial streams have a 7Q2 equal to or greater than 0.1 cubic feet per second.

☐ Designated or unclassified tidal stream: A stream that is tidally influenced. If you checked this box, you will need to contact the Water Quality Standards Group and evaluate whether or not a bathing beach is located along the tidal stream and whether or not a bathing beach is located along the estuary, bay or Gulf water that the tidal stream flows into.

3. Streamflow

Use USGS gage data (if a gage is located at a site or within a quarter mile of a site) or use the Stream Flow (Discharge) Measurement Form and follow the procedures outlined in the most recent TCEQ Surface Water Quality Monitoring Procedures, Volume 1, RG-415. If USGS gage data is used for a site, include that information as an attachment and list the streamflow on the sampling date below. If the stream flow taken at one site is representative of the flow at another site(s), then that flow can be used as the observed flow and should be documented below. If the stream flow measured at one site is different from another site, then stream flow should be taken at both sites. ___ cfs

4. Water Quality Data (Field Parameters)

Field parameters should be collected in accordance with the procedures outlined in the most recent TCEQ Surface Water Quality Monitoring Procedures, Volume 1.

Air Temp 35 °C Water Temp 30 32 °C Secchi 0.154 m

5. Riparian Zone (Mark dominant categories with L (Left Bank) and R (Right Bank). Bank orientation is determined by the investigator facing downstream.)

L, R Forest	___ Urban	___ Rip rap
___ Shrub dominated corridor	___ Pasture	___ Concrete
___ Herbaceous marsh	___ Row crops	Other (specify): ___
___ Mowed/maintained corridor	___ Denuded/Eroded bank	

6. Ease of bank access to the water body: ☒ Easy ☐ Moderately easy ☐ Moderately difficult ☐ Difficult

7. Please describe access opportunities or explain why the site is not easily accessible (Attach photos for documentation):

access road off hwy to beneath the bridge

8. Dominant Primary Substrate

☐ Cobble ☐ Sand ☐ Silt ☒ Mud/Clay ☐ Gravel ☐ Bedrock ☐ Rip rap ☐ Concrete

QC SB 6/25

E WES 6/24

Field Data Sheets – Basic RUAA Survey

Stream Name Navasota River below Lake Limestone Site: # 11
Date: 5.29.2010 Time: 1652-1725

B. Primary Contact Water Recreation Evaluation:
- Primary contact recreation draft definition: Water recreation activities, such as wading by children, swimming, water skiing, diving, tubing, surfing, and whitewater kayaking, canoeing, and rafting, involving a significant risk of ingestion of water.

1. Were water recreation activities that involve a significant risk of ingestion (full body immersion) observed at this site?
☐ Yes ☒ No primary contact recreation activities were observed
a. Check the following boxes of primary contact recreation activities observed at the time of the sampling event at the site (Attach photos of the activities or lack of activities).

☐ Wading-Children ☐ Tubing ☒ No primary contact activities that commonly occur were observed
☐ Wading-Adults ☐ Surfing
☐ Swimming ☐ Whitewater-kayaking, canoeing, rafting
☐ Water skiing ☐ Other: _____
☐ Diving ☐ frequent public swimming-created by publicly owned land or commercial operations

b. Check the number of individuals observed at the site: ☒ None ☐ 1-10 ☐ 11-20 ☐ 20-50 ☐ greater than 50

c. Check the following that apply regarding the individuals proximity to the water body.
☐ Water in mouth or nose of the individual ☐ Primary touch: Individual's body (or portion) immersed in water
☐ Secondary touch: fishing, pets and related contact with water ☐ Individual is in a boat touching water
☐ Individual is on shore near water within 8 meters (25ft) of water ☐ Individual is well away from water between 8 and 30 meters (100 ft) ☒ Not applicable

2. If primary contact recreation activities are not observed, describe the physical characteristics of the water body that may hinder the frequency of primary contact (depth, etc.) (Attach photos, etc. for documentation).
depth,

3. Describe if there is public access (e.g. parks, roads, etc.) (Attach photos, maps, etc. for documentation).
access road from hwy under bridge

4. Is an area with primary contact recreation activities or a bathing beach (e.g. state/local parks with swimming, etc.) located near (e.g. within 5 miles upstream and downstream) this site? ~~N/A~~ No

C. Secondary Contact Water Recreation Evaluation:
- Secondary contact recreation 1: Water recreation activities, such as fishing, commercial and recreational boating, and limited body contact incidental to shoreline activity, not involving a significant risk of water ingestion and that commonly occur.
- Secondary contact recreation 2: Water recreation activities, such as fishing, commercial and recreational boating, and limited body contact incidental to shoreline activity, not involving a significant risk of water ingestion but that occur less frequently than for secondary contact recreation 1 due to (1) physical characteristics of the water body and/or (2) limited public access.

1. Were water recreation activities observed at the site, but the nature of the recreation does not involve a significant risk of ingestion (e.g. secondary contact recreation activities)? ☒ Yes ☐ No secondary contact recreation activities were observed
a. Check the following boxes of secondary contact recreation activities that were observed at the time of the sampling event at the site (Attach photos of activities or lack of activities).

☒ Fishing
☐ Boating-commercial, recreational
☐ Non-whitewater-kayaking, rafting, canoeing
☐ No secondary contact recreation activities were observed
☐ Other secondary contact activities: _____

Field Data Sheets – Basic RUAA Survey

Stream Name Navasota river below lake Limestone Site: 7 11
Date: 5·29·2010 Time: 1652-1725

b. Check the number of individuals observed at the site.
☒ None ☒ 1-10 ☐ 11-20 ☐ 20-50 ☐ greater than 50 7

c. Check the following that apply regarding the individuals proximity to the water body. N/A
☒ Secondary touch: fishing, pets and related contact with water ☐ In a boat touching water
☐ Body on shore near water within 8 meters (25ft) of water ☐ Body well away from water between 8 and 30 meters (100 ft)

2. If secondary contact recreation activities are not observed, describe the physical characteristics of the water body that may hinder the frequency of secondary contact (Attach photos, etc. for documentation).
~~Same as above~~ N/A

3. If secondary contact recreation activities are observed, how often do water recreational activities occur that do not involve a significant risk of water ingestion? ☒ frequently ☐ infrequently ~~☐ unknown~~
Please describe how often the activities occur? ☒ Unknown ☐ Never ☐ Daily ☐ Monthly ☐ Yearly

4. If infrequently, what is the reason? ☐ physical characteristics of the water body ☐ limited public access ☐ other
If other, list reasons: N/A

5. Describe the physical characteristics of the water body that hinders the frequency of secondary contact recreation (depth, etc.) (Attach photos or depth measurements, etc. for documentation).
~~Same as above~~ N/A

6. Describe why there is limited public access (e.g. lack of roads, river or stream banks overgrown, etc.) (Attach photos, maps, etc. for documentation).
~~Same as above~~ N/A

D. Noncontact Recreation Evaluation

Noncontact recreation applies to water bodies where recreation activities do not involve a significant risk of water ingestion, and where primary and secondary contact recreation uses do not occur because of unsafe conditions, such as barge traffic.

1. Provide site-specific information and documentation (including photographs) regarding unsafe conditions, recreation activities, and presence or absence of water recreation activities.

Field Data Sheets – Basic RUAA Survey

Stream Name Navasota river below Lake Limestone Site: 7 11
Date: 5.29.2010 FDS Page 3 of 8 Time: 1652-1725

E. Stream Channel and Substantial Pools
Please check the following which best describes the river or stream: ☐ Wadeable ☒ Non-wadeable

1. Wadeable Streams
Determine whether or not the average depth at the thalweg is greater than 0.5 meters and if there are substantial pools with a depth of 1 meter or greater. Walk an approximately 300 meter reach (total) at the site and take the following measurements within the 300 meter reach. Measurements should be taken during base flow conditions (sustained or typical dry, warm-weather flows between rainfall events, excluding unusual antecedent conditions of drought or wet weather

Also, take photos facing upstream, downstream, left bank, and right bank at the 30 meters, 150 meters, and 300 meters.
1 Photos #s (30 meters) Upstream ✓ Downstream ✓ Left Bank ✓ Right Bank ✓ 25 m up from bridge
3 Photos #s (150 meters) Upstream ✓ Downstream ✓ Left Bank ✓ Right Bank ✓ 60 m downstream
2 Photos #s (300 meters) Upstream ✓ Downstream ✓ Left Bank ✓ Right Bank ✓ bridge

a) Substantial pools - Measure the length of each pool (if > 10 pools only measure 10 pools), the width (at the widest point), and the deepest depth. A substantial pool is considered a pool greater than 10 meters in length for the purposes of a Basic RUAA Survey. If depth and/or width measurements were not attainable, explain why.

	Length (meters)	Width (meters)	Depth (meters)
Pool 1			
Pool 2			
Pool 3			
Pool 4			
Pool 5			
Pool 6			
Pool 7			
Pool 8			
Pool 9			
Pool 10			

b)Average depth at the thalweg –Take depth measurements approximately every 30 meters to calculate an average depth at the thalweg (at least 10 measurements needed). If depth and/or width measurements were not attainable, explain why.

Distance	Depth (meters)
30 meters	
60 meters	
90 meters	
120 meters	
150 meters	
180 meters	
210 meters	
240 meters	
270 meters	
300 meters	
Average	

Field Data Sheets – Basic RUAA Survey

Stream Name Navasota River below Lake Limestone Site: # 11
Date: 5·29·2010 Time: 1652-1725

c) Stream width - Measure (1) the width at one point which represents the typical average width of the 300 meter reach; (2) the width at the narrowest point of the stream within the 300 meter reach; and (3) the width at the widest point of the stream within the 300 meter reach.

Measurement Type	Width (meters)
Typical Average Width of 300 meter reach	
Width at narrowest point of the stream within 300 meter reach	
Width at the widest point of the stream within 300 meter reach	

d) Is there sufficient water within a 300 meter stream reach during base flow conditions to support primary contact recreation? ☒ Yes ☐ No
COMMENTS:

2. Non-wadeable Streams
If accessible, take 10 width measurements which represent typical widths of the 300 meter reach. If the water is too deep and not accessible record the estimated average width of the water body.

Also, take photos facing upstream, downstream, left bank, and right bank at .
Photos #s (30 meters) Upstream____ Downstream____ Left Bank ____ Right Bank____ see wadeable
Photos #s (150 meters) Upstream____ Downstream____ Left Bank ____ Right Bank____
Photos #s (300 meters) Upstream____ Downstream____ Left Bank ____ Right Bank____

# Measurements	Width (meters)
1	36m
2	34m
3	
4	
5	
6	
7	
8	
9	
10	

60 m upstream
25 m downstream

unable to do Full 300m due to overgrown banks

Navasota **Field Data Sheets – Basic RUAA Survey** 11

Stream Name: River below lake Limestone Site: X

Date: 5·29·2010 Time: 1652-1725

F. Additional RUAA Information

1. Check the following activities observed over the site reach.

- ☐ Drinking or water in mouth
- ☐ Bathing
- ☐ Walking
- ☐ Jogging/running
- ☐ Bicycling
- ☐ Standing
- ☒ Sitting
- ☒ Lying down/sleeping
- ☐ Playing on shoreline
- ☐ Picnicking
- ☐ Motorcycle/ATV
- ☐ Hunting/Trapping
- ☐ Wildlife watching
- ☒ None
- ☐ Other: _____

2. Are there permanent or long-term hydrologic modifications that are constructed and operated in a way that affects the recreational uses? ☐ Yes ☑ No (If yes, please provide supporting documentation and photos.)

Comments: _____

3. Check any channel obstructions that apply (Attach photos).

- ☐ Culverts
- ☐ Barbed wire
- ☐ Utility pipe
- ☐ Fences
- ☐ Dams
- ☐ Other (specify): _____
- ☐ Log jams
- ☐ Thick vegetation
- ☐ Rip rap
- ☐ Low bridges
- ☐ Water control structure
- ☒ None

4. Check all surrounding conditions that promote recreational activities (Attach photos of evidence or unusual items of interest).

- ☐ Campgrounds
- ☐ Playgrounds
- ☑ Rural area
- ☐ Residential
- ☐ National forests
- ☐ Urban/suburban location
- ☐ Golf Course
- ☐ Sports Field
- ☐ Stairs/walkway
- ☐ Boating access (ramps)
- ☐ Beach
- ☑ Bridge crossing
- ☐ Commercial boating
- ☐ Trails/paths (hiking/biking)
- ☐ Paved parking lot
- ☑ Unimproved parking lot
- ☑ Roads (paved/unpaved)
- ☐ Populated area
- ☐ Docks or rafts
- ☐ Commercial outfitter
- ☐ Nearby school
- ☐ Power Line Corridor
- ☐ Parks (national/city/county/state)
- ☐ Public Property
- ☐ Other: _____
- ☐ None of the Above

Comments: _____

5. Check all surrounding conditions that impede recreational activities (Attach photos of evidence or unusual items of interest).

- ☑ Private Property
- ☐ No trespass sign
- ☐ Wildlife
- ☑ Steep slopes
- ☐ No public access
- ☐ No roads
- ☑ Fence
- ☐ Barge/ship traffic
- ☐ Industrial
- ☐ None of the Above
- ☐ Other: _____

Comments: _____

6. Check any indications of human use (Attach photos).

- ☑ Roads
- ☐ Rope swings
- ☐ Dock/platform
- ☑ Foot paths/prints
- ☐ Other: _____
- ☐ RV/ATV Tracks
- ☐ Camping Sites
- ☑ Fire pit/ring
- ☑ Fishing Tackle
- ☐ NPDES Discharge
- ☐ Gates on corridor
- ☐ Children's toys
- ☐ Remnant's of Kid's play
- ☐ Organized event
- ☐ No Human Presence

Comments: food and beverage containers on banks, fire pit, air mattress.

Navasota **Field Data Sheets – Basic RUAA Survey**

Stream Name: River below lake Limestone Site: #11

Date: 5·29·2010 Time: 1652-1725

7. Check all water characteristics that apply (Attach photos).

Aquatic Vegetation: X absent ☐ rare ☐ common ☐ abundant

Algae Cover: X absent ☐ rare ☐ common ☐ abundant

Odor: X none ☐ rare ☐ common ☐ abundant

Color: ☐ clear ☐ green ☐ red X brown ☐ black

Bottom Deposit: ☐ sludge ☐ solids X fine sediments ☐ none ☐ other

Water Surface: X clear ☐ scum ☐ foam ☐ debris ☐ oil

Other:

8. Vertebrates Observed within 300 meter reach

Snakes X None ☐ slight presence ☐ moderate presence ☐ large presence

Water Dependent Birds X None ☐ slight presence ☐ moderate presence ☐ large presence

Alligators X None ☐ slight presence ☐ moderate presence ☐ large presence

Comments:

9. Mammals Observed within 300 meter reach

Wild X None ☐ slight presence ☐ moderate presence ☐ large presence

Domesticated Pets X None ☐ slight presence ☐ moderate presence ☐ large presence

Livestock X None ☐ slight presence ☐ moderate presence ☐ large presence

Feral Hogs X None ☐ slight presence ☐ moderate presence ☐ large presence

Comments:

10. Evidence of wild animals or evidence of birds, cattle, hogs, etc.

☐ Tracks ☐ Fecal droppings ☐ Bird nests

11. Garbage Observed

Large garbage in the channel X None ☐ Rare ☐ Common ☐ Abundant

Small garbage in the channel X None ☐ Rare ☐ Common ☐ Abundant

Bank Garbage ☐ None ☐ Rare X Common ☐ Abundant

Briefly describe the kinds of garbage observed: food and beverage containers, empty drums, bait cans, cast net, fishing lines.

12. Is the site located in a wildlife preserve with large wildlife (i.e waterfowl) population? ☐ Yes X No

13. Please document any other relevant information regarding recreational activities and the water body in general (for example, area outside of the stream reach evaluated).

Field Data Sheet - Basic RUAA Survey

Stream Flow (Discharge) Measurement

Stream: Nawasota River below Lake Limestone Date:

Site: 7 11 Site

Description: SM 30 @ Nawasota

Time Begin: Time End: Meter Type: Sontek Flowtracker

Observers: Stream Width*: Section Width (W):

Observations:

Section Midpoint (ft) (m)	Section Depth (ft) (m) (cm) (D)	Observational Depth** (ft)(m)	Velocity (V)		Flow (Q) (m^3/s) (ft^3/s) Q = (W)(D)(V)
			At Point (ft/s)(m/s)	Average (ft/s)(m/s)	

not wadeable

12

Field Data Sheets – Basic RUAA Survey

(should be completed for each site)

Data Collectors & Contact Information: L. Ray, K. Conda, J. Wrast, C. Greene	
Date & Time: 5/30/10 1230-1337	County Name: Brazos/Grimes
Stream Name: Navasota River below Lake Limestone	
Segment No. or nearest downstream Segment No.: 1209	
Description of Site: #12 - Tonkaway Ranch	

At any point during the Basic RUAA Survey it becomes apparent that primary contact recreation is clearly the use for the water body the investigator should stop conducting the UAA.

A. Stream Characteristics:

1. Check the following channel flow status that applies.

_ dry _ no flow ✓ low _ normal _ high _ flooded

2. Check the following stream type that applies on the day of the survey:

_ Ephemeral: A stream which flows only during or immediately after a rainfall event, and contains no refuge pools capable of sustaining a viable community of aquatic organisms.

_ Intermittent: A stream which has a period of zero flow for at least one week during most years. Where flow records are available, a stream with a 7Q2 flow of less than 0.1 cubic feet per second is considered intermittent.

_ Intermittent w/ perennial pools: An intermittent stream which maintains persistent pools even when flow in the stream is less than 0.1 cubic feet per second.

✓ Perennial: A stream which flows continuously throughout the year. Perennial streams have a 7Q2 equal to or greater than 0.1 cubic feet per second.

_ Designated or unclassified tidal stream: A stream that is tidally influenced. If you checked this box, you will need to contact the Water Quality Standards Group and evaluate whether or not a bathing beach is located along the tidal stream and whether or not a bathing beach is located along the estuary, bay or Gulf water that the tidal stream flows into.

3. Streamflow

Use USGS gage data (if a gage is located at a site or within a quarter mile of a site) or use the Stream Flow (Discharge) Measurement Form and follow the procedures outlined in the most recent TCEQ Surface Water Quality Monitoring Procedures, Volume 1, RG-415. If USGS gage data is used for a site, include that information as an attachment and list the streamflow on the sampling date below. If the stream flow taken at one site is representative of the flow at another site(s), then that flow can be used as the observed flow and should be documented below. If the stream flow measured at one site is different from another site, then stream flow should be taken at both sites. 30.292 cfs

4. Water Quality Data (Field Parameters)

Field parameters should be collected in accordance with the procedures outlined in the most recent TCEQ Surface Water Quality Monitoring Procedures, Volume 1.

Air Temp 32.5 °C Water Temp 30 °C Secchi: 0.164

5. Riparian Zone (Mark dominant categories with L (Left Bank) and R (Right Bank). Bank orientation is determined by the investigator facing downstream.)

L,R Forest	_____ Urban	_____ Rip rap
_____ Shrub dominated corridor	_____ Pasture	_____ Concrete
_____ Herbaceous marsh	_____ Row crops	Other (specify): _____
_____ Mowed/maintained corridor	_____ Denuded/Eroded bank	

6. Ease of bank access to the water body: _ Easy _ Moderately easy _ Moderately difficult ✓ Difficult

7. Please describe access opportunities or explain why the site is not easily accessible (Attach photos for documentation): Private Property - Tonkaway Ranch is Considered a game preserve.

8. Dominant Primary Substrate

_ Cobble ✓ Sand _ Silt _ Mud/Clay _ Gravel _ Bedrock _ Rip rap _ Concrete

E MCS 6/
QC JD 6/20

Field Data Sheets – Basic RUAA Survey

Stream Name: Navasota Site: 12
Date: 5/30/16 Time: 1230-1337

B. Primary Contact Water Recreation Evaluation:
- Primary contact recreation draft definition: Water recreation activities, such as wading by children, swimming, water skiing, diving, tubing, surfing, and whitewater kayaking, canoeing, and rafting, involving a significant risk of ingestion of water.

1. Were water recreation activities that involve a significant risk of ingestion (full body immersion) observed at this site?
☐ Yes ☑ No primary contact recreation activities were observed

a. Check the following boxes of primary contact recreation activities observed at the time of the sampling event at the site (Attach photos of the activities or lack of activities).

☐ Wading-Children
☐ Wading-Adults
☐ Swimming
☐ Water skiing
☐ Diving
☐ Tubing
☐ Surfing
☐ Whitewater-kayaking, canoeing, rafting
☐ Other: _____
☐ frequent public swimming-created by publicly owned land or commercial operations
☑ No primary contact activities that commonly occur were observed

b. Check the number of individuals observed at the site: ☐ None ☑ 1-10 ☐ 11-20 ☐ 20-50 ☐ greater than 50
Landowners escort to water's edge

c. Check the following that apply regarding the individuals proximity to the water body.
☐ Water in mouth or nose of the individual ☐ Primary touch: Individual's body (or portion) immersed in water
☐ Secondary touch: fishing, pets and related contact with water ☐ Individual is in a boat touching water
☑ Individual is on shore near water within 8 meters (25ft) of water ☐ Individual is well away from water between 8 and 30 meters (100 ft) ☐ Not applicable

2. If primary contact recreation activities are not observed, describe the physical characteristics of the water body that may hinder the frequency of primary contact (depth, etc.) (Attach photos, etc. for documentation).
No characteristics will hinder Recreation except that it is on private property and away from any Roads numerous trees down

3. Describe if there is public access (e.g. parks, roads, etc.) (Attach photos, maps, etc. for documentation).
No public access, only unpaved road through Ranch

4. Is an area with primary contact recreation activities or a bathing beach (e.g. state/local parks with swimming, etc.) located near (e.g. within 5 miles upstream and downstream) this site? no

C. Secondary Contact Water Recreation Evaluation:
- Secondary contact recreation 1: Water recreation activities, such as fishing, commercial and recreational boating, and limited body contact incidental to shoreline activity, not involving a significant risk of water ingestion and that commonly occur.
- Secondary contact recreation 2: Water recreation activities, such as fishing, commercial and recreational boating, and limited body contact incidental to shoreline activity, not involving a significant risk of water ingestion but that occur less frequently than for secondary contact recreation 1 due to (1) physical characteristics of the water body and/or (2) limited public access.

1. Were water recreation activities observed at the site, but the nature of the recreation does not involve a significant risk of ingestion (e.g. secondary contact recreation activities)? Yes ☑ No secondary contact recreation activities were observed

a. Check the following boxes of secondary contact recreation activities that were observed at the time of the sampling event at the site (Attach photos of activities or lack of activities).

☐ Fishing
☐ Boating-commercial, recreational
☐ Non-whitewater-kayaking, rafting, canoeing
☑ No secondary contact recreation activities were observed
☐ Other secondary contact activities: _____

Field Data Sheets – Basic RUAA Survey

Stream Name: Pavasota Site: 12
Date: 5/30/10 Time: 1230-1337

b. Check the number of individuals observed at the site.
☐ None ☑ 1-10 ☐ 11-20 ☐ 20-50 ☐ greater than 50

c. Check the following that apply regarding the individuals proximity to the water body.
☐ Secondary touch: fishing, pets and related contact with water ☐ In a boat touching water
☑ Body on shore near water within 8 meters (25ft) of water ☐ Body well away from water between 8 and 30 meters (100 ft)

2. If secondary contact recreation activities are not observed, describe the physical characteristics of the water body that may hinder the frequency of secondary contact (Attach photos, etc. for documentation).

Same

3. If secondary contact recreation activities are observed, how often do water recreational activities occur that do not involve a significant risk of water ingestion? ☐ frequently ☐ infrequently
Please describe how often the activities occur? ☑ Unknown ☐ Never ☐ Daily ☐ Monthly ☐ Yearly

4. If infrequently, what is the reason? ☐ physical characteristics of the water body ☐ limited public access ☐ other
If other, list reasons: unknown

5. Describe the physical characteristics of the water body that hinders the frequency of secondary contact recreation (depth, etc.) (Attach photos or depth measurements, etc. for documentation).

Same

6. Describe why there is limited public access (e.g. lack of roads, river or stream banks overgrown, etc.) (Attach photos, maps, etc. for documentation).

Same

D. Noncontact Recreation Evaluation

Noncontact recreation applies to water bodies where recreation activities do not involve a significant risk of water ingestion, and where primary and secondary contact recreation uses do not occur because of unsafe conditions, such as barge traffic.

1. Provide site-specific information and documentation (including photographs) regarding unsafe conditions, recreation activities, and presence or absence of water recreation activities.

N/A

Field Data Sheets – Basic RUAA Survey

Stream Name Nawasota Site: 12
Date: 5/30/10 ~~FDS Page 3 of 8~~ Time: ~~10:45~~ 1230-1337

E. Stream Channel and Substantial Pools
Please check the following which best describes the river or stream: X Wadeable Non-wadeable

1. Wadeable Streams
Determine whether or not the average depth at the thalweg is greater than 0.5 meters and if there are substantial pools with a depth of 1 meter or greater. Walk an approximately 300 meter reach (total) at the site and take the following measurements within the 300 meter reach. Measurements should be taken during base flow conditions (sustained or typical dry, warm-weather flows between rainfall events, excluding unusual antecedent conditions of drought or wet weather

Also, take photos facing upstream, downstream, left bank, and right bank at the 30 meters, 150 meters, and 300 meters.
Photos #s (30 meters) Upstream ✓ Downstream ✓ Left Bank ✓ Right Bank ✓
Photos #s (150 meters) Upstream ✓ Downstream ✓ Left Bank ✓ Right Bank ✓
Photos #s (~~300~~ 165 meters) Upstream ✓ Downstream ✓ Left Bank ✓ Right Bank ✓

a) Substantial pools - Measure the length of each pool (if > 10 pools only measure 10 pools), the width (at the widest point), and the deepest depth. A substantial pool is considered a pool greater than 10 meters in length for the purposes of a Basic RUAA Survey. If depth and/or width measurements were not attainable, explain why.

	Length (meters)	Width (meters)	Depth (meters)
Pool 1			
Pool 2			
Pool 3			
Pool 4			
Pool 5			
Pool 6			
Pool 7			
Pool 8			
Pool 9			
Pool 10			

b)Average depth at the thalweg –Take depth measurements approximately every 30 meters to calculate an average depth at the thalweg (at least 10 measurements needed). If depth and/or width measurements were not attainable, explain why.

Distance	Depth (meters)	
30 meters	>4.4 ft	>1.34 m
60 meters	>4.4	>1.34 m
90 meters	3	0.91
120 meters	>4.4	>1.34 m
150 meters	2.3	0.70
180 meters	>4.4	>1.34 m
210 meters 165	>4.4	>1.34 m
240 meters		
270 meters		
300 meters		
Average		>1.19 m

Field Data Sheets – Basic RUAA Survey

Stream Name Navasota Site: 12
Date: 5/30/10 Time: 1230 - 1337

c) Stream width - Measure (1) the width at one point which represents the typical average width of the 300 meter reach; (2) the width at the narrowest point of the stream within the 300 meter reach; and (3) the width at the widest point of the stream within the 300 meter reach.

Measurement Type	Width (ft)	(meters)
Typical Average Width of 300 meter reach	49	14.9
Width at narrowest point of the stream within 300 meter reach	est 40	12.19
Width at the widest point of the stream within 300 meter reach	est 60	18.3

d) Is there sufficient water within a 300 meter stream reach during base flow conditions to support primary contact recreation? ☑ Yes ☐ No
COMMENTS:

2. Non-wadeable Streams N/A
If accessible, take 10 width measurements which represent typical widths of the 300 meter reach. If the water is too deep and not accessible record the estimated average width of the water body.

Also, take photos facing upstream, downstream, left bank, and right bank at .
Photos #s (30 meters) Upstream____ Downstream____ Left Bank ____ Right Bank____
Photos #s (150 meters) Upstream____ Downstream____ Left Bank ____ Right Bank____
Photos #s (300 meters) Upstream____ Downstream____ Left Bank ____ Right Bank____

# Measurements	Width (meters)
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	

Field Data Sheets – Basic RUAA Survey

Stream Name: Nawasota Site: 12
Date: 5/30/10 Time: 1230-1337

F. Additional RUAA Information

1. Check the following activities observed over the site reach.

- ☐ Drinking or water in mouth
- ☐ Bathing
- ☐ Walking
- ☐ Jogging/running
- ☐ Bicycling
- ☐ Standing
- ☐ Sitting
- ☐ Lying down/sleeping
- ☐ Playing on shoreline
- ☐ Picnicking
- ☐ Motorcycle/ATV
- ☐ Hunting/Trapping
- ☐ Wildlife watching
- ☑ None
- ☐ Other: _____

2. Are there permanent or long-term hydrologic modifications that are constructed and operated in a way that affects the recreational uses? ☐ Yes ☑ No (If yes, please provide supporting documentation and photos.)
Comments: _____

3. Check any channel obstructions that apply (Attach photos).

- ☐ Culverts
- ☐ Barbed wire
- ☐ Utility pipe
- ☐ Fences
- ☐ Dams
- ☑ Other (specify): fallen trees and debris
- ☐ Log jams
- ☐ Thick vegetation
- ☐ Rip rap
- ☐ Low bridges
- ☐ Water control structure
- ~~☑ None~~ MES

4. Check all surrounding conditions that promote recreational activities (Attach photos of evidence or unusual items of interest).

- ☐ Campgrounds
- ☐ Playgrounds
- ☑ Rural area
- ☐ Residential
- ☐ National forests
- ☐ Urban/suburban location
- ☐ Golf Course
- ☐ Sports Field
- ☐ Stairs/walkway
- ☐ Boating access (ramps)
- ☐ Beach
- ☐ Bridge crossing
- ☐ Commercial boating
- ☐ Trails/paths (hiking/biking)
- ☐ Paved parking lot
- ☐ Unimproved parking lot
- ☐ Roads (paved/unpaved)
- ☐ Populated area
- ☐ Docks or rafts
- ☐ Commercial outfitter
- ☐ Nearby school
- ☐ Power Line Corridor
- ☐ Parks (national/city/county/state)
- ☐ Public Property
- Other: _____
- ☐ None of the Above

Comments: _____

5. Check all surrounding conditions that impede recreational activities (Attach photos of evidence or unusual items of interest).

- ☑ Private Property
- ☐ No trespass sign
- ☐ Wildlife
- ☐ Steep slopes
- ☐ No public access
- ☐ No roads
- ☐ Fence
- ☐ Barge/ship traffic
- ☐ Industrial
- ☐ None of the Above
- ☐ Other: _____

Comments: _____

6. Check any indications of human use (Attach photos).

- ☐ Roads
- ☐ Rope swings
- ☐ Dock/platform
- ☐ Foot paths/prints
- ☐ Other: _____
- ☐ RV/ATV Tracks
- ☐ Camping Sites
- ☐ Fire pit/ring
- ☐ Fishing Tackle
- ☐ NPDES Discharge
- ☐ Gates on corridor
- ☐ Children's toys
- ☐ Remnant's of Kid's play
- ☐ Organized event
- ☑ No Human Presence

Comments: The landowner's escorted group to the River; however, at the River more of the above things were noted because it is on private property.

Field Data Sheets – Basic RUAA Survey

Stream Name: Navasota Site: 12
Date: 5/30/10 Time: 1230-1337

7. Check all water characteristics that apply (Attach photos).

Aquatic Vegetation:	✓ absent	rare	common	abundant
Algae Cover:	✓ absent	rare	common	abundant
Odor:	none	✓ rare	common	abundant
Color:	clear	green	red	✓ brown	black
Bottom Deposit:	sludge	solids	✓ fine sediments	none	other
Water Surface:	✓ clear	scum	foam	debris	oil

Other: Abundant log debris in River.

8. Vertebrates Observed within 300 meter reach

Snakes	✓ None	slight presence	moderate presence	large presence
Water Dependent Birds	None	✓ slight presence	moderate presence	large presence
Alligators	✓ None	slight presence	moderate presence	large presence

Two great Blue Herons

Comments:

9. Mammals Observed within 300 meter reach

Wild	✓ None	slight presence	moderate presence	large presence
Domesticated Pets	✓ None	slight presence	moderate presence	large presence
Livestock	✓ None	slight presence	moderate presence	large presence
Feral Hogs	✓ None	slight presence	moderate presence	large presence

Comments:

10. Evidence of wild animals or evidence of birds, cattle, hogs, etc.
✓ Tracks Fecal droppings Bird nests Racoons, deer

11. Garbage Observed

Large garbage in the channel	✓ None	Rare	Common	Abundant
Small garbage in the channel	✓ None	Rare	Common	Abundant
Bank Garbage	✓ None	Rare	Common	Abundant

Briefly describe the kinds of garbage observed:

12. Is the site located in a wildlife preserve with large wildlife (i.e waterfowl) population? ✓ Yes ~~No~~ LR 5/30/10

13. Please document any other relevant information regarding recreational activities and the water body in general (for example, area outside of the stream reach evaluated).

Tonkaway Ranch has signs that say large animal game preserve. Hunting takes place on property.

Field Data Sheet - Basic RUAA Survey
Stream Flow (Discharge) Measurement

Stream: Navasota River (1209) Date: 5/30/10
Site: # 12 Site
Description: Tonkaway Ranch
Time Begin: 1245 Time End: 1326 Meter Type: SinTek Flowtracker
Observers: L. Ray, K. Condra Stream Width*: 49.0 ft Section Width (W): 2.45
Observations:

Section Midpoint (ft) (m)	Section Depth (ft) (m) (cm) (D)	Observational Depth** (ft)(m)	Velocity (V) At Point (ft/s)(m/s)	Velocity (V) Average (ft/s)(m/s)	Flow (Q) (m^3/s) (ft^3/s) Q = (W)(D)(V)
1.225	0.65		~~0.27~~	0.27	
3.675	2.60		0.62		
6.125	2.65		0.38 0.51 0.49		
** 8.575	2.20			0.34	
** 11.025	2.20			0.28	
13.475	2.15			0.50	
15.925	2.0			0.51	
18.375	1.85			0.57	
20.825	1.60			0.61	
23.275	1.50			0.60	
25.725	1.20			0.58	
28.175	1.0			0.61	
30.625	0.90			0.81	
33.075	0.80			0.73	
35.525	0.70			0.50	
37.975	0.50			0.41	
40.425	100	Shallow			
42.875					
45.325					
47.775					

Note: Large chunk of log debris on bottom of River.

Total Q = 30.792

13

Field Data Sheets – Basic RUAA Survey

(should be completed for each site)

Data Collectors & Contact Information: K. Condra, L. Ray, J. Wrast, C. Green	
Date & Time: 5/30/10 1418 - 1447	County Name: Grimes / Brazos
Stream Name: Navasota River below Lake Limestone	
Segment No. or nearest downstream Segment No.: 1209	
Description of Site: Sulphur Springs Rd 1 @ Navasota	

At any point during the Basic RUAA Survey it becomes apparent that primary contact recreation is clearly the use for the water body the investigator should stop conducting the UAA.

A. Stream Characteristics:

1. Check the following channel flow status that applies.

☐ dry ☐ no flow ☒ low ☐ normal ☐ high ☐ flooded

2. Check the following stream type that applies on the day of the survey:

☐ Ephemeral: A stream which flows only during or immediately after a rainfall event, and contains no refuge pools capable of sustaining a viable community of aquatic organisms.

☐ Intermittent: A stream which has a period of zero flow for at least one week during most years. Where flow records are available, a stream with a 7Q2 flow of less than 0.1 cubic feet per second is considered intermittent.

☐ Intermittent w/ perennial pools: An intermittent stream which maintains persistent pools even when flow in the stream is less than 0.1 cubic feet per second.

☒ Perennial: A stream which flows continuously throughout the year. Perennial streams have a 7Q2 equal to or greater than 0.1 cubic feet per second.

☐ Designated or unclassified tidal stream: A stream that is tidally influenced. If you checked this box, you will need to contact the Water Quality Standards Group and evaluate whether or not a bathing beach is located along the tidal stream and whether or not a bathing beach is located along the estuary, bay or Gulf water that the tidal stream flows into.

3. Streamflow

Use USGS gage data (if a gage is located at a site or within a quarter mile of a site) or use the Stream Flow (Discharge) Measurement Form and follow the procedures outlined in the most recent TCEQ Surface Water Quality Monitoring Procedures, Volume 1, RG-415. If USGS gage data is used for a site, include that information as an attachment and list the streamflow on the sampling date below. If the stream flow taken at one site is representative of the flow at another site(s), then that flow can be used as the observed flow and should be documented below. If the stream flow measured at one site is different from another site, then stream flow should be taken at both sites. _____ cfs no flow taken, similar to #12

4. Water Quality Data (Field Parameters)

Field parameters should be collected in accordance with the procedures outlined in the most recent TCEQ Surface Water Quality Monitoring Procedures, Volume 1.

Air Temp 36 °C Water Temp 31 °C Secchi 0.560 m

5. Riparian Zone (Mark dominant categories with L (Left Bank) and R (Right Bank). Bank orientation is determined by the investigator facing downstream.)

L/R Forest	_____ Urban	_____ Rip rap
_____ Shrub dominated corridor	_____ Pasture	_____ Concrete
_____ Herbaceous marsh	_____ Row crops	Other (specify): _____
_____ Mowed/maintained corridor	_____ Denuded/Eroded bank	

6. Ease of bank access to the water body: ☐ Easy ☒ Moderately easy ☐ Moderately difficult ☐ Difficult

7. Please describe access opportunities or explain why the site is not easily accessible (Attach photos for documentation):

At the end of the road there is an unpaved parking lot: possible boat launching tracks

8. Dominant Primary Substrate

☐ Cobble ☒ Sand ☐ Silt ☒ Mud/Clay ☐ Gravel ☐ Bedrock ☐ Rip rap ☐ Concrete

KC

E NES 6/24
QC JB 6/20

Field Data Sheets – Basic RUAA Survey

Stream Name Navasota River below Lake Limestone Site: 8 13
Date: 5/30/10 Time: 1418-1447

B. Primary Contact Water Recreation Evaluation:
- Primary contact recreation draft definition: Water recreation activities, such as wading by children, swimming, water skiing, diving, tubing, surfing, and whitewater kayaking, canoeing, and rafting, involving a significant risk of ingestion of water.

1. Were water recreation activities that involve a significant risk of ingestion (full body immersion) observed at this site?
☐ Yes ☒ No primary contact recreation activities were observed
a. Check the following boxes of primary contact recreation activities observed at the time of the sampling event at the site (Attach photos of the activities or lack of activities).

☐ Wading-Children ☐ Tubing ☒ No primary contact activities that commonly occur were observed
☐ Wading-Adults ☐ Surfing
☐ Swimming ☐ Whitewater-kayaking, canoeing, rafting
☐ Water skiing ☐ Other: _____
☐ Diving ☐ frequent public swimming-created by publicly owned land or commercial operations

b. Check the number of individuals observed at the site: ☒ None ☐ 1-10 ☐ 11-20 ☐ 20-50 ☐ greater than 50

c. Check the following that apply regarding the individuals proximity to the water body.
☐ Water in mouth or nose of the individual ☐ Primary touch: Individual's body (or portion) immersed in water
☐ Secondary touch: fishing, pets and related contact with water ☐ Individual is in a boat touching water
☐ Individual is on shore near water within 8 meters (25ft) of water ☐ Individual is well away from water between 8 and 30 meters (100 ft) ☒ Not applicable

2. If primary contact recreation activities are not observed, describe the physical characteristics of the water body that may hinder the frequency of primary contact (depth, etc.) (Attach photos, etc. for documentation).
None, except the water is brown & people might not want to swim in it

3. Describe if there is public access (e.g. parks, roads, etc.) (Attach photos, maps, etc. for documentation).
Park at the end of the road at an unpaved parking lot. Possible boat launching. Tire tracks to the water

4. Is an area with primary contact recreation activities or a bathing beach (e.g. state/local parks with swimming, etc.) located near (e.g. within 5 miles upstream and downstream) this site? ~~N/A~~ No

C. Secondary Contact Water Recreation Evaluation:
- Secondary contact recreation 1: Water recreation activities, such as fishing, commercial and recreational boating, and limited body contact incidental to shoreline activity, not involving a significant risk of water ingestion and that commonly occur.
- Secondary contact recreation 2: Water recreation activities, such as fishing, commercial and recreational boating, and limited body contact incidental to shoreline activity, not involving a significant risk of water ingestion but that occur less frequently than for secondary contact recreation 1 due to (1) physical characteristics of the water body and/or (2) limited public access.

1. Were water recreation activities observed at the site, but the nature of the recreation does not involve a significant risk of ingestion (e.g. secondary contact recreation activities)? ☐ Yes ☒ No secondary contact recreation activities were observed
a. Check the following boxes of secondary contact recreation activities that were observed at the time of the sampling event at the site (Attach photos of activities or lack of activities).
☐ Fishing
☐ Boating-commercial, recreational
☐ Non-whitewater-kayaking, rafting, canoeing
☒ No secondary contact recreation activities were observed
☐ Other secondary contact activities: _____

Field Data Sheets – Basic RUAA Survey

Stream Name Nanasota river below lake Limestone Site: 8 13
Date: 5/30/10 Time: 1418-1447

b. Check the number of individuals observed at the site.
X None ☐ 1-10 ☐ 11-20 ☐ 20-50 ☐ greater than 50

c. Check the following that apply regarding the individuals proximity to the water body. n/a
☐ Secondary touch: fishing, pets and related contact with water ☐ In a boat touching water
☐ Body on shore near water within 8 meters (25ft) of water ☐ Body well away from water between 8 and 30 meters (100 ft)

6/24/10 KC

2. If secondary contact recreation activities are not observed, describe the physical characteristics of the water body that may hinder the frequency of secondary contact (Attach photos, etc. for documentation).
~~Same~~ None

3. If secondary contact recreation activities are observed, how often do water recreational activities occur that do not involve a significant risk of water ingestion? ☐ frequently ☐ infrequently N/A
Please describe how often the activities occur? X Unknown ☐ Never ☐ Daily ☐ Monthly ☐ Yearly

4. If infrequently, what is the reason? ☐ physical characteristics of the water body ☐ limited public access ☐ other
If other, list reasons: N/A

5. Describe the physical characteristics of the water body that hinders the frequency of secondary contact recreation (depth, etc.) (Attach photos or depth measurements, etc. for documentation).
Same

6. Describe why there is limited public access (e.g. lack of roads, river or stream banks overgrown, etc.) (Attach photos, maps, etc. for documentation).
Same

D. Noncontact Recreation Evaluation

Noncontact recreation applies to water bodies where recreation activities do not involve a significant risk of water ingestion, and where primary and secondary contact recreation uses do not occur because of unsafe conditions, such as barge traffic.

1. Provide site-specific information and documentation (including photographs) regarding unsafe conditions, recreation activities, and presence or absence of water recreation activities.
N/A

Field Data Sheets – Basic RUAA Survey

Stream Name Navasota River below lake limestone Site: 8 13
Date: 5/30/10 FDS Page 3 of 8 Time: 1418-1447

E. Stream Channel and Substantial Pools

Please check the following which best describes the river or stream: ☒ Wadeable ☐ Non-wadeable

1. Wadeable Streams

Determine whether or not the average depth at the thalweg is greater than 0.5 meters and if there are substantial pools with a depth of 1 meter or greater. Walk an approximately 300 meter reach (total) at the site and take the following measurements within the 300 meter reach. Measurements should be taken during base flow conditions (sustained or typical dry, warm-weather flows between rainfall events, excluding unusual antecedent conditions of drought or wet weather

Also, take photos facing upstream, downstream, left bank, and right bank at the 30 meters, 150 meters, and 300 meters.

Photos #s (30 meters) Upstream____ Downstream____ Left Bank____ Right Bank____
Photos #s (150 meters) Upstream_/_ Downstream_/_ Left Bank_/_ Right Bank_/_
Photos #s (300 meters) Upstream____ Downstream____ Left Bank____ Right Bank____

a) Substantial pools - Measure the length of each pool (if > 10 pools only measure 10 pools), the width (at the widest point), and the deepest depth. A substantial pool is considered a pool greater than 10 meters in length for the purposes of a Basic RUAA Survey. If depth and/or width measurements were not attainable, explain why.

	Length (meters)	Width (meters)	Depth (meters)
Pool 1			
Pool 2			
Pool 3			
Pool 4			
Pool 5			
Pool 6			
Pool 7			
Pool 8			
Pool 9			
Pool 10			

b)Average depth at the thalweg –Take depth measurements approximately every 30 meters to calculate an average depth at the thalweg (at least 10 measurements needed). If depth and/or width measurements were not attainable, explain why.

Distance	Depth (meters)	
30 meters		
60 meters		
90 meters		
120 meters	>4.4 ft	>1.34
150 meters	>4.4	>1.34
180 meters	>4.4	>1.34
210 meters		
240 meters		
270 meters		
300 meters		
Average		

Field Data Sheets – Basic RUAA Survey

Stream Name Navasota River below lake limestone Site: 8 13
Date: 5/30/10 Time: 1418 -1447

c) Stream width - Measure (1) the width at one point which represents the typical average width of the 300 meter reach; (2) the width at the narrowest point of the stream within the 300 meter reach; and (3) the width at the widest point of the stream within the 300 meter reach.

Sec 160m Up/Down Stream

Measurement Type	Width (meters)
Typical Average Width of 300 meter reach	21 meters
Width at narrowest point of the stream within 300 meter reach	
Width at the widest point of the stream within 300 meter reach	

Pics of flip flop, footprints, vehicles & possible boat launch tracks, 150, footprints to water, No trespassin fire pit

d) Is there sufficient water within a 300 meter stream reach during base flow conditions to support primary contact recreation? ☒ Yes ☐ No
COMMENTS:

2. Non-wadeable Streams n/a
If accessible, take 10 width measurements which represent typical widths of the 300 meter reach. If the water is too deep and not accessible record the estimated average width of the water body.

Also, take photos facing upstream, downstream, left bank, and right bank at .
Photos #s (30 meters) Upstream____ Downstream____ Left Bank ____ Right Bank____
Photos #s (150 meters) Upstream____ Downstream____ Left Bank ____ Right Bank____
Photos #s (300 meters) Upstream____ Downstream____ Left Bank ____ Right Bank____

# Measurements	Width (meters)
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	

Nawasota **Field Data Sheets – Basic RUAA Survey**

Stream Name River below Lake Limestone Site: 8 / 13

Date: 5/30/10 Time: 1418-1447

F. Additional RUAA Information

1. Check the following activities observed over the site reach.

- ☐ Drinking or water in mouth
- ☐ Bathing
- ☐ Walking
- ☐ Jogging/running
- ☐ Bicycling
- ☐ Standing
- ☐ Sitting
- ☐ Lying down/sleeping
- ☐ Playing on shoreline
- ☐ Picnicking
- ☐ Motorcycle/ATV
- ☐ Hunting/Trapping
- ☐ Wildlife watching
- ☒ None
- ☐ Other: _____

2. Are there permanent or long-term hydrologic modifications that are constructed and operated in a way that affects the recreational uses? ☐ Yes ☒ No (If yes, please provide supporting documentation and photos.)

Comments: _____

3. Check any channel obstructions that apply (Attach photos).

- ☐ Culverts
- ☐ Barbed wire
- ☐ Utility pipe
- ☐ Fences
- ☐ Dams
- ☐ Other (specify): _____
- ☐ Log jams
- ☐ Thick vegetation
- ☒ Rip rap
- ☐ Low bridges
- Water control structure
- ~~☒ None~~

4. Check all surrounding conditions that promote recreational activities (Attach photos of evidence or unusual items of interest).

- ☐ Campgrounds
- ☐ Playgrounds
- ☒ Rural area
- ☐ Residential
- ☐ National forests
- ☐ Urban/suburban location
- ☐ Golf Course
- ☐ Sports Field
- ☐ Stairs/walkway
- ☐ Boating access (ramps)
- ☐ Beach
- ☐ Bridge crossing
- ☐ Commercial boating
- ☒ Trails/paths (hiking/biking)
- ☐ Paved parking lot
- ☒ Unimproved parking lot
- ☒ Roads (paved/unpaved) Dead end Rd.
- ☐ Populated area
- ☐ Docks or rafts
- ☐ Commercial outfitter
- ☐ Nearby school
- ☐ Power Line Corridor
- ☐ Parks (national/city/county/state)
- ☐ Public Property
- ☐ Other: _____
- ☐ None of the Above

Comments: _____

5. Check all surrounding conditions that impede recreational activities (Attach photos of evidence or unusual items of interest).

- ☐ Private Property
- ☒ No trespass sign
- ☐ Wildlife
- ☐ Steep slopes
- ☐ No public access
- ☐ No roads
- ☐ Fence
- ☐ Barge/ship traffic
- ☐ Industrial
- ☐ None of the Above
- ☐ Other: _____

Comments: _____

6. Check any indications of human use (Attach photos).

- ☒ Roads
- ☐ Rope swings
- ☐ Dock/platform
- ☒ Foot paths/prints
- ☐ Other: _____
- ☐ RV/ATV Tracks
- ☐ Camping Sites
- ☒ Fire pit/ring
- ☒ Fishing Tackle
- ☐ NPDES Discharge
- ☐ Gates on corridor
- ☐ Children's toys
- ☐ Remnant's of Kid's play
- ☐ Organized event
- ☐ No Human Presence

Comments: Worm Styrofoam container, fishing bobber, bait (dead on bank)

Navasota Field Data Sheets – Basic RUAA Survey

Stream Name river below lake limestone Site: 8 13

Date: 5/30/10 Time: 1418-1447

7. Check all water characteristics that apply (Attach photos).

Aquatic Vegetation: ☒ absent ☐ rare ☐ common ☐ abundant

Algae Cover: ☒ absent ☐ rare ☐ common ☐ abundant

Odor: ☐ none ☒ rare ☐ common ☐ abundant

Color: ☐ clear ☐ green ☐ red ☒ brown ☐ black

Bottom Deposit: ☒ sludge ☐ solids ☒ fine sediments ☐ none ☐ other

Water Surface: ☒ clear ☐ scum ☐ foam ☐ debris ☐ oil

Other:

Chunks of concrete in water

8. Vertebrates Observed within 300 meter reach

Snakes	☒ None	☐ slight presence	☐ moderate presence	☐ large presence
Water Dependent Birds	☒ None	☐ slight presence	☐ moderate presence	☐ large presence
Alligators	☒ None	☐ slight presence	☐ moderate presence	☐ large presence

Comments:

9. Mammals Observed within 300 meter reach

Wild	☒ None	☐ slight presence	☐ moderate presence	☐ large presence
Domesticated Pets	☒ None	☐ slight presence	☐ moderate presence	☐ large presence
Livestock	☒ None	☐ slight presence	☐ moderate presence	☐ large presence
Feral Hogs	☒ None	☐ slight presence	☐ moderate presence	☐ large presence

Comments:

10. Evidence of wild animals or evidence of birds, cattle, hogs, etc.

☒ Tracks ☐ Fecal droppings ☐ Bird nests raccoon, heron

11. Garbage Observed

Large garbage in the channel	☐ None	☒ Rare	☐ Common	☐ Abundant
Small garbage in the channel	☒ None	☐ Rare	☐ Common	☐ Abundant
Bank Garbage	☐ None	☐ Rare	☒ Common	☐ Abundant

Briefly describe the kinds of garbage observed: cups, beer case, ice bag, flip flops, beer bottles, bucket, fish bait container, cigarette packets fast food box

12. Is the site located in a wildlife preserve with large wildlife (i.e waterfowl) population? ☐ Yes ☒ No

13. Please document any other relevant information regarding recreational activities and the water body in general (for example, area outside of the stream reach evaluated).

There was a car ~~packet~~ parked at the end of the road but no person spotted. The trail was by the parking lot but had a 'NO TRESPASSING' sign posted on the tree at the trailhead. There is a smell of wood still burning in one of the 4 fire rings

Field Data Sheet - Basic RUAA Survey

Stream Flow (Discharge) Measurement

Stream: Navasota river below lake Limestone Date: 5/30/10

Site: 8 13 Site

Description: Sulphur Springs Rd 1 @ Navasota

Time Begin: _____ Time End: _____ Meter Type: _____

Observers: _____ Stream Width*: _____ Section Width (W): _____

Observations: _____

Section Midpoint (ft) (m)	Section Depth (ft) (m) (cm) (D)	Observational Depth** (ft)(m)	Velocity (V)		Flow (Q) (m^3/s) (ft^3/s) Q = (W)(D)(V)
			At Point (ft/s)(m/s)	Average (ft/s)(m/s)	

NO FLOW MEASURED

Flow is similar to Navasota #12 site

Field Data Sheets – Basic RUAA Survey

(should be completed for each site)

Data Collectors & Contact Information:	K. Candra, L. Ray, C. Green, J. Wrast
Date & Time: 5/30/10 1514 – 1537	County Name: GRIMES / BRAZOS
Stream Name: Navasota River Below Lake Limestone	
Segment No. or nearest downstream Segment No.: 1209	
Description of Site: SH 6	Site #14

At any point during the Basic RUAA Survey it becomes apparent that primary contact recreation is clearly the use for the water body the investigator should stop conducting the UAA.

A. Stream Characteristics:

1. Check the following channel flow status that applies.

_ dry _ no flow X low _ normal _ high _ flooded

2. Check the following stream type that applies on the day of the survey:

_ Ephemeral: A stream which flows only during or immediately after a rainfall event, and contains no refuge pools capable of sustaining a viable community of aquatic organisms.

_ Intermittent: A stream which has a period of zero flow for at least one week during most years. Where flow records are available, a stream with a 7Q2 flow of less than 0.1 cubic feet per second is considered intermittent.

_ Intermittent w/ perennial pools: An intermittent stream which maintains persistent pools even when flow in the stream is less than 0.1 cubic feet per second.

X Perennial: A stream which flows continuously throughout the year. Perennial streams have a 7Q2 equal to or greater than 0.1 cubic feet per second.

_ Designated or unclassified tidal stream: A stream that is tidally influenced. If you checked this box, you will need to contact the Water Quality Standards Group and evaluate whether or not a bathing beach is located along the tidal stream and whether or not a bathing beach is located along the estuary, bay or Gulf water that the tidal stream flows into.

3. Streamflow

Use USGS gage data (if a gage is located at a site or within a quarter mile of a site) or use the Stream Flow (Discharge) Measurement Form and follow the procedures outlined in the most recent TCEQ Surface Water Quality Monitoring Procedures, Volume 1, RG-415. If USGS gage data is used for a site, include that information as an attachment and list the streamflow on the sampling date below. If the stream flow taken at one site is representative of the flow at another site(s), then that flow can be used as the observed flow and should be documented below. If the stream flow measured at one site is different from another site, then stream flow should be taken at both sites. _____ cfs no flow taken, not wadeable

4. Water Quality Data (Field Parameters)

Field parameters should be collected in accordance with the procedures outlined in the most recent TCEQ Surface Water Quality Monitoring Procedures, Volume 1.

Air Temp 34 °C Water Temp 31 °C

Secchi tube 0.120 m

5. Riparian Zone (Mark dominant categories with L (Left Bank) and R (Right Bank). Bank orientation is determined by the investigator facing downstream.)

L/R Forest	_____ Urban	_____ Rip rap
_____ Shrub dominated corridor	_____ Pasture	_____ Concrete
_____ Herbaceous marsh	_____ Row crops	Other (specify): _____
_____ Mowed/maintained corridor	_____ Denuded/Eroded bank	

6. Ease of bank access to the water body: X Easy _ Moderately easy _ Moderately difficult _ Difficult

7. Please describe access opportunities or explain why the site is not easily accessible (Attach photos for documentation):

Park vehicle under the bridge, ~~go up~~ walk along pathway to the water. There is a dirt road from ~~N~~ South Hwy 6 that takes you under the bridge

8. Dominant Primary Substrate

_ Cobble _ Sand _ Silt X Mud/Clay _ Gravel _ Bedrock _ Rip rap _ Concrete

QC JB 6/25
E NB 6/30

Field Data Sheets – Basic RUAA Survey

Stream Name NAUASota Below Lake Limestone Site: 14
Date: 5/30/10 Time: 1514 – 1537

B. Primary Contact Water Recreation Evaluation:
- Primary contact recreation draft definition: Water recreation activities, such as wading by children, swimming, water skiing, diving, tubing, surfing, and whitewater kayaking, canoeing, and rafting, involving a significant risk of ingestion of water.

1. Were water recreation activities that involve a significant risk of ingestion (full body immersion) observed at this site?
☐ Yes ☑ No primary contact recreation activities were observed

a. Check the following boxes of primary contact recreation activities observed at the time of the sampling event at the site (Attach photos of the activities or lack of activities).

☐ Wading-Children
☐ Wading-Adults
☐ Swimming
☐ Water skiing
☐ Diving
☐ Tubing
☐ Surfing
☐ Whitewater-kayaking, canoeing, rafting
☐ Other: _____
☑ No primary contact activities that commonly occur were observed
☐ frequent public swimming-created by publicly owned land or commercial operations

b. Check the number of individuals observed at the site: ☑ None ☐ 1-10 ☐ 11-20 ☐ 20-50 ☐ greater than 50

c. Check the following that apply regarding the individuals proximity to the water body.
☐ Water in mouth or nose of the individual ☐ Primary touch: Individual's body (or portion) immersed in water
☐ Secondary touch: fishing, pets and related contact with water ☐ Individual is in a boat touching water
☐ Individual is on shore near water within 8 meters (25ft) of water ☐ Individual is well away from water between 8 and 30 meters (100 ft) ☑ Not applicable

2. If primary contact recreation activities are not observed, describe the physical characteristics of the water body that may hinder the frequency of primary contact (depth, etc.) (Attach photos, etc. for documentation).
People may not want to swim in it because the water is brown

3. Describe if there is public access (e.g. parks, roads, etc.) (Attach photos, maps, etc. for documentation).
~~Same~~ Take dirt road from Hwy 6 South under the bridge. Park under bridge & walk dirt path to the water

4. Is an area with primary contact recreation activities or a bathing beach (e.g. state/local parks with swimming, etc.) located near (e.g. within 5 miles upstream and downstream) this site? ~~N/A~~ No

C. Secondary Contact Water Recreation Evaluation:
- Secondary contact recreation 1: Water recreation activities, such as fishing, commercial and recreational boating, and limited body contact incidental to shoreline activity, not involving a significant risk of water ingestion and that commonly occur.
- Secondary contact recreation 2: Water recreation activities, such as fishing, commercial and recreational boating, and limited body contact incidental to shoreline activity, not involving a significant risk of water ingestion but that occur less frequently than for secondary contact recreation 1 due to (1) physical characteristics of the water body and/or (2) limited public access.

1. Were water recreation activities observed at the site, but the nature of the recreation does not involve a significant risk of ingestion (e.g. secondary contact recreation activities)? Yes ☑ No secondary contact recreation activities were observed

a. Check the following boxes of secondary contact recreation activities that were observed at the time of the sampling event at the site (Attach photos of activities or lack of activities).

☐ Fishing
☐ Boating-commercial, recreational
☐ Non-whitewater-kayaking, rafting, canoeing
☑ No secondary contact recreation activities were observed
☐ Other secondary contact activities: _____

Field Data Sheets – Basic RUAA Survey

Stream Name Nauvsota Site: 14
Date: 5/30/10 Time: 1514-1537

b. Check the number of individuals observed at the site.
X None ☐ 1-10 ☐ 11-20 ☐ 20-50 ☐ greater than 50

c. Check the following that apply regarding the individuals proximity to the water body. n/a
☐ Secondary touch: fishing, pets and related contact with water ☐ In a boat touching water
☐ Body on shore near water within 8 meters (25ft) of water ☐ Body well away from water between 8 and 30 meters (100 ft)

2. If secondary contact recreation activities are not observed, describe the physical characteristics of the water body that may hinder the frequency of secondary contact (Attach photos, etc. for documentation).
6/24/10 KC ~~Same~~ None

3. If secondary contact recreation activities are observed, how often do water recreational activities occur that do not involve a significant risk of water ingestion? ☐ frequently ☐ infrequently N/A
Please describe how often the activities occur? X Unknown ☐ Never ☐ Daily ☐ Monthly ☐ Yearly N/A

4. If infrequently, what is the reason? ☐ physical characteristics of the water body ☐ limited public access ☐ other
If other, list reasons: N/A

5. Describe the physical characteristics of the water body that hinders the frequency of secondary contact recreation (depth, etc.) (Attach photos or depth measurements, etc. for documentation).
Same

6. Describe why there is limited public access (e.g. lack of roads, river or stream banks overgrown, etc.) (Attach photos, maps, etc. for documentation).
Same

D. Noncontact Recreation Evaluation

Noncontact recreation applies to water bodies where recreation activities do not involve a significant risk of water ingestion, and where primary and secondary contact recreation uses do not occur because of unsafe conditions, such as barge traffic.

1. Provide site-specific information and documentation (including photographs) regarding unsafe conditions, recreation activities, and presence or absence of water recreation activities.
N/A

Field Data Sheets – Basic RUAA Survey

Stream Name Nauasota Site: 14
Date: 5/30/10 FDS Page 3 of 8 1514-1537

E. Stream Channel and Substantial Pool:
Please check the following which best describes the river or stream: | Wadeable X Non-wadeable

1. Wadeable Streams n/a
Determine whether or not the average depth at the thalweg is greater than 0.5 meters and if there are substantial pools with a depth of 1 meter or greater. Walk an approximately 300 meter reach (total) at the site and take the following measurements within the 300 meter reach. Measurements should be taken during base flow conditions (sustained or typical dry, warm-weather flows between rainfall events, excluding unusual antecedent conditions of drought or wet weather

Also, take photos facing upstream, downstream, left bank, and right bank at the 30 meters, 150 meters, and 300 meters.

~~Photos #s (30 meters) Upstream____ Downstream____ Left Bank ____ Right Bank____~~
under railroad — Photos #s (150 meters) Upstream ✓ Downstream ✓ Left Bank ✓ Right Bank ✓
~~Photos #s (300 meters) Upstream____ Downstream____ Left Bank____ Right Bank____~~

Pics of trail leading to river from parking lot, road leading to parking lot from Hwy 6

a) Substantial pools - Measure the length of each pool (if > 10 pools only measure 10 pools), the width (at the widest point), and the deepest depth. A substantial pool is considered a pool greater than 10 meters in length for the purposes of a Basic RUAA Survey. If depth and/or width measurements were not attainable, explain why.

	Length (meters)	Width (meters)	Depth (meters)
Pool 1			
Pool 2			
Pool 3			
Pool 4			
Pool 5			
Pool 6			
Pool 7			
Pool 8			
Pool 9			
Pool 10			

b)Average depth at the thalweg –Take depth measurements approximately every 30 meters to calculate an average depth at the thalweg (at least 10 measurements needed). If depth and/or width measurements were not attainable, explain why.

Distance	Depth (meters)
30 meters	
60 meters	
90 meters	
120 meters	
150 meters	
180 meters	
210 meters	
240 meters	
270 meters	
300 meters	
Average	

Field Data Sheets – Basic RUAA Survey

Stream Name Nauasota Site: 14
Date: 5/30/10 Time: 1514-1537

c) Stream width - Measure (1) the width at one point which represents the typical average width of the 300 meter reach; (2) the width at the narrowest point of the stream within the 300 meter reach; and (3) the width at the widest point of the stream within the 300 meter reach.

Measurement Type	Width (meters)
Typical Average Width of 300 meter reach	
Width at narrowest point of the stream within 300 meter reach	
Width at the widest point of the stream within 300 meter reach	

d) Is there sufficient water within a 300 meter stream reach during base flow conditions to support primary contact recreation? ☒ Yes ☐ No
COMMENTS:

2. Non-wadeable Streams
If accessible, take 10 width measurements which represent typical widths of the 300 meter reach. If the water is too deep and not accessible record the estimated average width of the water body.

Also, take photos facing upstream, downstream, left bank, and right bank at .
Photos #s (30 meters) Upstream____ Downstream____ Left Bank ____ Right Bank____
under railroad - Photos #s (150 meters) Upstream ✓ Downstream ✓ Left Bank ✓ Right Bank ✓
Photos #s (300 meters) Upstream____ Downstream____ Left Bank ____ Right Bank____

Pics of trail leading to river from parking lot, road leading to ~~potential~~ parking lot from Hwy 6

# Measurements	Width (meters)
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	

Not completed due to thick vegetation hindering access along banks

From bridge/railroad could see:
136m upstream
146m downstream

Across - 32 m - stream width @ bridge

Field Data Sheets – Basic RUAA Survey

Stream Name: NAUASOTA Site: 14
Date: 5/30/10 Time: 1514 – 1537

F. Additional RUAA Information

1. Check the following activities observed over the site reach.

- [ ] Drinking or water in mouth
- [ ] Bathing
- [ ] Walking
- [ ] Jogging/running
- [ ] Bicycling
- [ ] Standing
- [ ] Sitting
- [ ] Lying down/sleeping
- [ ] Playing on shoreline
- [ ] Picnicking
- [ ] Motorcycle/ATV
- [ ] Hunting/Trapping
- [ ] Wildlife watching
- [x] None
- [ ] Other: _____

2. Are there permanent or long-term hydrologic modifications that are constructed and operated in a way that affects the recreational uses? [ ] Yes [x] No (If yes, please provide supporting documentation and photos.)

Comments: _____

3. Check any channel obstructions that apply (Attach photos).

- [ ] Culverts
- [ ] Barbed wire
- [ ] Utility pipe
- [ ] Fences
- [ ] Dams
- [ ] Other (specify): _____
- [ ] Log jams
- [ ] Thick vegetation
- [ ] Rip rap
- [ ] Low bridges
- [ ] Water control structure
- [x] None

4. Check all surrounding conditions that promote recreational activities (Attach photos of evidence or unusual items of interest).

- [ ] Campgrounds
- [ ] Playgrounds
- [x] Rural area
- [ ] Residential
- [ ] National forests
- [ ] Urban/suburban location
- [ ] Golf Course
- [ ] Sports Field
- [ ] Stairs/walkway
- [ ] Boating access (ramps)
- [ ] Beach
- [x] Bridge crossing
- [ ] Commercial boating
- [ ] Trails/paths (hiking/biking)
- [ ] Paved parking lot
- [x] Unimproved parking lot
- [x] Roads (paved/unpaved)
- [ ] Populated area
- [ ] Docks or rafts
- [ ] Commercial outfitter
- [ ] Nearby school
- [ ] Power Line Corridor
- [ ] Parks (national/city/county/state)
- [ ] Public Property
- [ ] Other: _____
- [ ] None of the Above

Comments: _____

5. Check all surrounding conditions that impede recreational activities (Attach photos of evidence or unusual items of interest).

- [ ] Private Property
- [ ] No trespass sign
- [ ] Wildlife
- [ ] Steep slopes
- [ ] No public access
- [ ] No roads
- [ ] Fence
- [ ] Barge/ship traffic
- [ ] Industrial
- [x] None of the Above
- [ ] Other: _____

Comments: _____

6. Check any indications of human use (Attach photos).

- [x] Roads
- [ ] Rope swings
- [ ] Dock/platform
- [x] Foot paths/prints
- [ ] Other: _____
- [ ] RV/ATV Tracks
- [ ] Camping Sites
- [ ] Fire pit/ring
- [x] Fishing Tackle
- [ ] NPDES Discharge
- [ ] Gates on corridor
- [ ] Children's toys
- [ ] Remnant's of Kid's play
- [ ] Organized event
- [ ] No Human Presence

Comments: _____

Field Data Sheets – Basic RUAA Survey

Stream Name: Naquasota Site: 14
Date: 5/30/10 Time: 1514-1537

7. Check all water characteristics that apply (Attach photos).

Aquatic Vegetation: X absent _ rare _ common _ abundant
Algae Cover: X absent _ rare _ common _ abundant
Odor: _ none X rare _ common _ abundant
Color: X clear _ green _ red _ brown _ black
Bottom Deposit: _ sludge _ solids X fine sediments _ none _ other
Water Surface: X clear _ scum _ foam _ debris _ oil
Other:

8. Vertebrates Observed within 300 meter reach

Snakes	X None	_ slight presence	_ moderate presence	_ large presence
Water Dependent Birds	X None	_ slight presence	_ moderate presence	_ large presence
Alligators	X None	_ slight presence	_ moderate presence	_ large presence

Comments: saw snake skin along bank

9. Mammals Observed within 300 meter reach

Wild	X None	_ slight presence	_ moderate presence	_ large presence
Domesticated Pets	X None	_ slight presence	_ moderate presence	_ large presence
Livestock	X None	_ slight presence	_ moderate presence	_ large presence
Feral Hogs	X None	_ slight presence	_ moderate presence	_ large presence

Comments:

10. Evidence of wild animals or evidence of birds, cattle, hogs, etc.
_ Tracks _ Fecal droppings _ Bird nests

11. Garbage Observed

Large garbage in the channel	X None	_ Rare	_ Common	_ Abundant
Small garbage in the channel	X None	_ Rare	_ Common	_ Abundant
Bank Garbage	_ None	_ Rare	_ Common	X Abundant

Briefly describe the kinds of garbage observed: soda cans, drink cups, plastic, bags of trash

12. Is the site located in a wildlife preserve with large wildlife (i.e waterfowl) population? _ Yes X No

13. Please document any other relevant information regarding recreational activities and the water body in general (for example, area outside of the stream reach evaluated).
A vehicle was parked under the bridge with some rope in the truck. We saw possible drag marks of a canoe or kayak along the trail to the water.

Field Data Sheet - Basic RUAA Survey
Stream Flow (Discharge) Measurement

Stream: Navasota River Below Lake Limestone Date: 5/30/10
Site: #14 Site
Description: SH 6
Time Begin: ______ Time End: ______ Meter Type: Flowtracker Sontek
Observers: ______ Stream Width*: ______ Section Width (W): ______
Observations: ______

Section Midpoint (ft) (m)	Section Depth (ft) (m) (cm) (D)	Observational Depth** (ft)(m)	Velocity (V)		Flow (Q) (m^3/s) (ft^3/s) $Q = (W)(D)(V)$
			At Point (ft/s)(m/s)	Average (ft/s)(m/s)	

NO FLOW MEASURED

Not wadeable and similar to Navasota site ~~14~~ 12

15

Field Data Sheets – Basic RUAA Survey

(should be completed for each site)

Data Collectors & Contact Information:	M. Shepard, C. Gauthier, R. Thompson, L. Benavides
Date & Time: 5/29/10 1513 - 1553	County Name: Grimes/Brazos.
Stream Name: Navasota river below lake limestone	
Segment No. or nearest downstream Segment No.: 1209	
Description of Site: SH 105 @ Navasota	

At any point during the Basic RUAA Survey it becomes apparent that primary contact recreation is clearly the use for the water body the investigator should stop conducting the UAA.

A. Stream Characteristics:

1. Check the following channel flow status that applies.

☐ dry ☐ no flow ☒ low ☐ normal ☐ high ☐ flooded

2. Check the following stream type that applies on the day of the survey:

☐ Ephemeral: A stream which flows only during or immediately after a rainfall event, and contains no refuge pools capable of sustaining a viable community of aquatic organisms.

☐ Intermittent: A stream which has a period of zero flow for at least one week during most years. Where flow records are available, a stream with a 7Q2 flow of less than 0.1 cubic feet per second is considered intermittent.

☐ Intermittent w/ perennial pools: An intermittent stream which maintains persistent pools even when flow in the stream is less than 0.1 cubic feet per second.

☒ Perennial: A stream which flows continuously throughout the year. Perennial streams have a 7Q2 equal to or greater than 0.1 cubic feet per second.

☐ Designated or unclassified tidal stream: A stream that is tidally influenced. If you checked this box, you will need to contact the Water Quality Standards Group and evaluate whether or not a bathing beach is located along the tidal stream and whether or not a bathing beach is located along the estuary, bay or Gulf water that the tidal stream flows into.

3. Streamflow

Use USGS gage data (if a gage is located at a site or within a quarter mile of a site) or use the Stream Flow (Discharge) Measurement Form and follow the procedures outlined in the most recent TCEQ Surface Water Quality Monitoring Procedures, Volume 1, RG-415. If USGS gage data is used for a site, include that information as an attachment and list the streamflow on the sampling date below. If the stream flow taken at one site is representative of the flow at another site(s), then that flow can be used as the observed flow and should be documented below. If the stream flow measured at one site is different from another site, then stream flow should be taken at both sites. ___/___ cfs

4. Water Quality Data (Field Parameters)

Field parameters should be collected in accordance with the procedures outlined in the most recent TCEQ Surface Water Quality Monitoring Procedures, Volume 1.

Air Temp 32 °C Water Temp 31 °C Secchi 0.112 m

5. Riparian Zone (Mark dominant categories with L (Left Bank) and R (Right Bank). Bank orientation is determined by the investigator facing downstream.)

___ Forest	___ Urban	___ Rip rap
___ Shrub dominated corridor	R,L Pasture	___ Concrete
___ Herbaceous marsh	___ Row crops	Other (specify): ___
___ Mowed/maintained corridor	___ Denuded/Eroded bank	

6. Ease of bank access to the water body: ☐ Easy ☐ Moderately easy ☒ Moderately difficult ☐ Difficult

7. Please describe access opportunities or explain why the site is not easily accessible (Attach photos for documentation):

access depends on where at on stream, at bridge & a few other spots. worn footpath to water & along

8. Dominant Primary Substrate

☐ Cobble ☐ Sand ☐ Silt ☒ Mud/Clay ☐ Gravel ☐ Bedrock ☐ Rip rap ☐ Concrete

QC SB 6/28
E MES 6/24

Field Data Sheets – Basic RUAA Survey

Stream Name Nawasota River below Lake Limestone Site: ~~18~~ 15
Date: 5/29/10 Time: 1513 - 1553

B. Primary Contact Water Recreation Evaluation:
- Primary contact recreation draft definition: Water recreation activities, such as wading by children, swimming, water skiing, diving, tubing, surfing, and whitewater kayaking, canoeing, and rafting, involving a significant risk of ingestion of water.

1. Were water recreation activities that involve a significant risk of ingestion (full body immersion) observed at this site?
☐ Yes ☒ No primary contact recreation activities were observed
a. Check the following boxes of primary contact recreation activities observed at the time of the sampling event at the site (Attach photos of the activities or lack of activities).

☐ Wading-Children ☐ Tubing ☒ No primary contact activities that commonly occur were observed
☐ Wading-Adults ☐ Surfing
☐ Swimming ☐ Whitewater-kayaking, canoeing, rafting
☐ Water skiing ☐ Other: _____
☐ Diving ☐ frequent public swimming-created by publicly owned land or commercial operations

b. Check the number of individuals observed at the site: ☒ None ☐ 1-10 ☐ 11-20 ☐ 20-50 ☐ greater than 50

c. Check the following that apply regarding the individuals proximity to the water body.
☐ Water in mouth or nose of the individual ☐ Primary touch: Individual's body (or portion) immersed in water
☐ Secondary touch: fishing, pets and related contact with water ☐ Individual is in a boat touching water
☐ Individual is on shore near water within 8 meters (25ft) of water ☐ Individual is well away from water between 8 and 30 meters (100 ft) ☒ Not applicable

2. If primary contact recreation activities are not observed, describe the physical characteristics of the water body that may hinder the frequency of primary contact (depth, etc.) (Attach photos, etc. for documentation).
steep banks & slope into water, gets deep fast

3. Describe if there is public access (e.g. parks, roads, etc.) (Attach photos, maps, etc. for documentation).
can pull off road & drive along/under bridge

4. Is an area with primary contact recreation activities or a bathing beach (e.g. state/local parks with swimming, etc.) located near (e.g. within 5 miles upstream and downstream) this site? No

C. Secondary Contact Water Recreation Evaluation:
- Secondary contact recreation 1: Water recreation activities, such as fishing, commercial and recreational boating, and limited body contact incidental to shoreline activity, not involving a significant risk of water ingestion and that commonly occur.
- Secondary contact recreation 2: Water recreation activities, such as fishing, commercial and recreational boating, and limited body contact incidental to shoreline activity, not involving a significant risk of water ingestion but that occur less frequently than for secondary contact recreation 1 due to (1) physical characteristics of the water body and/or (2) limited public access.

1. Were water recreation activities observed at the site, but the nature of the recreation does not involve a significant risk of ingestion (e.g. secondary contact recreation activities)? ☐ Yes ☒ No secondary contact recreation activities were observed
a. Check the following boxes of secondary contact recreation activities that were observed at the time of the sampling event at the site (Attach photos of activities or lack of activities).
☐ Fishing
☐ Boating-commercial, recreational
☐ Non-whitewater-kayaking, rafting, canoeing
☒ No secondary contact recreation activities were observed
☒ Other secondary contact activities: _____

MBS

Field Data Sheets – Basic RUAA Survey

Stream Name Navasota River below Lake Limestone Site: 10 15
Date: 5/29/10 Time: 1513 - 1553

b. Check the number of individuals observed at the site.
X None ☐ 1-10 ☐ 11-20 ☐ 20-50 ☐ greater than 50

c. Check the following that apply regarding the individuals proximity to the water body.
☐ Secondary touch: fishing, pets and related contact with water ☐ In a boat touching water
☐ Body on shore near water within 8 meters (25ft) of water ☐ Body well away from water between 8 and 30 meters (100 ft) ☒ N/A

2. If secondary contact recreation activities are not observed, describe the physical characteristics of the water body that may hinder the frequency of secondary contact (Attach photos, etc. for documentation).
steep banks, no boat ramp

3. If secondary contact recreation activities are observed, how often do water recreational activities occur that do not involve a significant risk of water ingestion? ☐ frequently ☐ infrequently ☒ N/A
Please describe how often the activities occur? ☐ Unknown ☐ Never ☐ Daily ☐ Monthly ☐ Yearly

4. If infrequently, what is the reason? ☐ physical characteristics of the water body ☐ limited public access ☐ other
If other, list reasons: N/A

5. Describe the physical characteristics of the water body that hinders the frequency of secondary contact recreation (depth, etc.) (Attach photos or depth measurements, etc. for documentation).
same as before

6. Describe why there is limited public access (e.g. lack of roads, river or stream banks overgrown, etc.) (Attach photos, maps, etc. for documentation).
same as before

D. Noncontact Recreation Evaluation

Noncontact recreation applies to water bodies where recreation activities do not involve a significant risk of water ingestion, and where primary and secondary contact recreation uses do not occur because of unsafe conditions, such as barge traffic.

1. Provide site-specific information and documentation (including photographs) regarding unsafe conditions, recreation activities, and presence or absence of water recreation activities.

Field Data Sheets – Basic RUAA Survey

Stream Name Navasota River below Lake Limestone Site: ~~10~~ 15
Date: 5/29/10 FDS Page 3 of 8 Time: 1513 - 1553

E. Stream Channel and Substantial Pools
Please check the following which best describes the river or stream: ☐ Wadeable ☒ Non-wadeable

1. Wadeable Streams N/A
Determine whether or not the average depth at the thalweg is greater than 0.5 meters and if there are substantial pools with a depth of 1 meter or greater. Walk an approximately 300 meter reach (total) at the site and take the following measurements within the 300 meter reach. Measurements should be taken during base flow conditions (sustained or typical dry, warm-weather flows between rainfall events, excluding unusual antecedent conditions of drought or wet weather

Also, take photos facing upstream, downstream, left bank, and right bank at the 30 meters, 150 meters, and 300 meters.
Photos #s (30 meters) Upstream____ Downstream____ Left Bank ____ Right Bank____
Photos #s (150 meters) Upstream____ Downstream____ Left Bank ____ Right Bank____
Photos #s (300 meters) Upstream____ Downstream____ Left Bank ____ Right Bank____

a) Substantial pools - Measure the length of each pool (if > 10 pools only measure 10 pools), the width (at the widest point), and the deepest depth. A substantial pool is considered a pool greater than 10 meters in length for the purposes of a Basic RUAA Survey. If depth and/or width measurements were not attainable, explain why.

	Length (meters)	Width (meters)	Depth (meters)
Pool 1			
Pool 2			
Pool 3			
Pool 4			
Pool 5			
Pool 6			
Pool 7			
Pool 8			
Pool 9			
Pool 10			

b)Average depth at the thalweg –Take depth measurements approximately every 30 meters to calculate an average depth at the thalweg (at least 10 measurements needed). If depth and/or width measurements were not attainable, explain why.

Distance	Depth (meters)
30 meters	
60 meters	
90 meters	
120 meters	
150 meters	
180 meters	
210 meters	
240 meters	
270 meters	
300 meters	
Average	

Field Data Sheets – Basic RUAA Survey

Stream Name Navasota River below lake Limestone Site: ~~10~~ 15
Date: 5/29/10 Time: 1513 - 1553

c) Stream width - Measure (1) the width at one point which represents the typical average width of the 300 meter reach; (2) the width at the narrowest point of the stream within the 300 meter reach; and (3) the width at the widest point of the stream within the 300 meter reach.

Measurement Type	Width (meters)
Typical Average Width of 300 meter reach	
Width at narrowest point of the stream within 300 meter reach	
Width at the widest point of the stream within 300 meter reach	

d) Is there sufficient water within a 300 meter stream reach during base flow conditions to support primary contact recreation? ☒ Yes ☐ No
COMMENTS:

2. Non-wadeable Streams
If accessible, take 10 width measurements which represent typical widths of the 300 meter reach. If the water is too deep and not accessible record the estimated average width of the water body.

Also, take photos facing upstream, downstream, left bank, and right bank at .
Photos #s (30 meters) Upstream ✓ Downstream ✓ Left Bank ✓ Right Bank ✓
Photos #s (150 meters) Upstream ✓ Downstream ✓ Left Bank ✓ Right Bank ✓
Photos #s (300 meters) Upstream____ Downstream____ Left Bank ____ Right Bank____

No pics taken due to camera malfunction

# Measurements	Width (meters)
1	25m
2	30m
3	33m
4	34m
5	24m
6	27m
7	29m
8	19m
9	33m
10	33m

120m
↓
33m

Field Data Sheets – Basic RUAA Survey

Stream Name: Nawasota River below lake Limestone Site: ~~10~~ 15
Date: 5/29/10 Time: 1513 - 1553

F. Additional RUAA Information

1. Check the following activities observed over the site reach.

- ☐ Drinking or water in mouth
- ☐ Bathing
- ☐ Walking
- ☐ Jogging/running
- ☐ Bicycling
- ☐ Standing
- ☐ Sitting
- ☐ Lying down/sleeping
- ☐ Playing on shoreline
- ☐ Picnicking
- ☐ Motorcycle/ATV
- ☐ Hunting/Trapping
- ☐ Wildlife watching
- ☒ None
- ☐ Other: _____

2. Are there permanent or long-term hydrologic modifications that are constructed and operated in a way that affects the recreational uses? ☒ Yes ☐ No (If yes, please provide supporting documentation and photos.)

Comments: Bridge, river eroding banks around pr supports, supports changing flow

3. Check any channel obstructions that apply (Attach photos).

- ☐ Culverts
- ☐ Barbed wire
- ☐ Utility pipe
- ☐ Fences
- ☐ Dams
- ☒ Other (specify): fallen trees
- ☐ Log jams
- ☒ Thick vegetation
- ☐ Rip rap
- ☐ Low bridges
- Water control structure
- ☐ None

4. Check all surrounding conditions that promote recreational activities (Attach photos of evidence or unusual items of interest).

- ☐ Campgrounds
- ☐ Playgrounds
- ☒ Rural area
- ☐ Residential
- ☐ National forests
- ☐ Urban/suburban location
- ☐ Golf Course
- ☐ Sports Field
- ☐ Stairs/walkway
- ☐ Boating access (ramps)
- ☐ Beach
- ☒ Bridge crossing
- ☐ Commercial boating
- ☐ Trails/paths (hiking/biking)
- ☐ Paved parking lot
- ☐ Unimproved parking lot
- ☒ Roads (paved/unpaved)
- ☐ Populated area
- ☐ Docks or rafts
- ☐ Commercial outfitter
- ☐ Nearby school
- ☐ Power Line Corridor
- ☐ Parks (national/city/county/state)
- ☐ Public Property
- ☐ Other: _____
- ☐ None of the Above

Comments: _____

5. Check all surrounding conditions that impede recreational activities (Attach photos of evidence or unusual items of interest).

- ☒ Private Property
- ☒ No trespass sign
- ☐ Wildlife
- ☐ Steep slopes
- ☐ No public access
- ☐ No roads
- ☒ Fence on left bank only
- ☐ Barge/ship traffic
- ☐ Industrial
- ☐ None of the Above
- ☐ Other: _____

Comments: _____

6. Check any indications of human use (Attach photos).

- ☒ Roads
- ☐ Rope swings
- ☐ Dock/platform
- ☒ Foot paths/prints
- ☐ Other: _____
- ☐ RV/ATV Tracks
- ☐ Camping Sites
- ☒ Fire pit/ring
- ☒ Fishing Tackle
- ☐ NPDES Discharge
- ☐ Gates on corridor
- ☐ Children's toys
- ☐ Remnant's of Kid's play
- ☐ Organized event
- ☐ No Human Presence

Comments: _____

Navasota **Field Data Sheets – Basic RUAA Survey**

Stream Name below lake limestone Site: ~~10~~ 15

Date: 5/29/10 Time: 1513 - 1553

7. Check all water characteristics that apply (Attach photos).

Aquatic Vegetation: X absent ☐ rare ☐ common ☐ abundant

Algae Cover: X absent ☐ rare ☐ common ☐ abundant

Odor: X none ☐ rare ☐ common ☐ abundant

Color: ☐ clear ☐ green ☐ red X brown ☐ black

Bottom Deposit: ☐ sludge ☐ solids ☐ fine sediments X none ☐ other

Water Surface: ☐ clear ☐ scum ☐ foam X debris ☐ oil

Other: → some

8. Vertebrates Observed within 300 meter reach

Snakes	☐ None	X slight presence	☐ moderate presence	☐ large presence (1)
Water Dependent Birds	X None	☐ slight presence	☐ moderate presence	☐ large presence
Alligators	X None	☐ slight presence	☐ moderate presence	☐ large presence

Comments:

9. Mammals Observed within 300 meter reach

Wild	X None	☐ slight presence	☐ moderate presence	☐ large presence
Domesticated Pets	X None	☐ slight presence	☐ moderate presence	☐ large presence
Livestock	X None	☐ slight presence	☐ moderate presence	☐ large presence
Feral Hogs	X None	☐ slight presence	☐ moderate presence	☐ large presence

Comments:

10. Evidence of wild animals or evidence of birds, cattle, hogs, etc.

X Tracks ☐ Fecal droppings ☐ Bird nests

11. Garbage Observed

Large garbage in the channel	X None	☐ Rare	☐ Common	☐ Abundant
Small garbage in the channel	X None	☐ Rare	☐ Common	☐ Abundant
Bank Garbage	☐ None	☐ Rare	X Common	☐ Abundant

Briefly describe the kinds of garbage observed: drink containers, fishing tackle, food wrappers, boards

12. Is the site located in a wildlife preserve with large wildlife (i.e waterfowl) population? ☐ Yes X No

13. Please document any other relevant information regarding recreational activities and the water body in general (for example, area outside of the stream reach evaluated).

Field Data Sheet - Basic RUAA Survey
Stream Flow (Discharge) Measurement

Stream: Navasota River below lake Limestone Date: 5/29/10

Site: ~~10~~ 15 Site

Description: SH 105 @ Navasota

Time Begin: 1513 Time End: 1553 Meter Type: Sontek Flowtracker

Observers: _____ Stream Width*: _____ Section Width (W): _____

Observations: _____

Section Midpoint (ft) (m)	Section Depth (ft) (m) (cm) (D)	Observational Depth** (ft)(m)	Velocity (V)		Flow (Q) (m^3/s) (ft^3/s) Q = (W)(D)(V)
			At Point (ft/s)(m/s)	Average (ft/s)(m/s)	

No way to perform flow boat or wade flow. Fenced on opposite bank under bridge & too deep to get across.

1

Field Data Sheets – Basic RUAA Survey

(should be completed for each site)

Data Collectors & Contact Information:	J. Wurst, M. Shepard, R. Thompson, L. Benavides PL
Date & Time: 6/24/10 1005-1100	County Name: Robertson / Leon / Madison
Stream Name: Navasota river below lake Limestone	
Segment No. or nearest downstream Segment No.:	1209
Description of Site: US 79 @ Navasota	

At any point during the Basic RUAA Survey it becomes apparent that primary contact recreation is clearly the use for the water body the investigator should stop conducting the UAA.

A. Stream Characteristics:

1. Check the following channel flow status that applies.

☐ dry ☐ no flow ☐ low ☒ normal ☐ high ☐ flooded

2. Check the following stream type that applies on the day of the survey:

☐ Ephemeral: A stream which flows only during or immediately after a rainfall event, and contains no refuge pools capable of sustaining a viable community of aquatic organisms.

☐ Intermittent: A stream which has a period of zero flow for at least one week during most years. Where flow records are available, a stream with a 7Q2 flow of less than 0.1 cubic feet per second is considered intermittent.

☐ Intermittent w/ perennial pools: An intermittent stream which maintains persistent pools even when flow in the stream is less than 0.1 cubic feet per second.

☒ Perennial: A stream which flows continuously throughout the year. Perennial streams have a 7Q2 equal to or greater than 0.1 cubic feet per second.

☐ Designated or unclassified tidal stream: A stream that is tidally influenced. If you checked this box, you will need to contact the Water Quality Standards Group and evaluate whether or not a bathing beach is located along the tidal stream and whether or not a bathing beach is located along the estuary, bay or Gulf water that the tidal stream flows into.

3. Streamflow

Use USGS gage data (if a gage is located at a site or within a quarter mile of a site) or use the Stream Flow (Discharge) Measurement Form and follow the procedures outlined in the most recent TCEQ Surface Water Quality Monitoring Procedures, Volume 1, RG-415. If USGS gage data is used for a site, include that information as an attachment and list the streamflow on the sampling date below. If the stream flow taken at one site is representative of the flow at another site(s), then that flow can be used as the observed flow and should be documented below. If the stream flow measured at one site is different from another site, then stream flow should be taken at both sites. 21.6 cfs

4. Water Quality Data (Field Parameters)

Field parameters should be collected in accordance with the procedures outlined in the most recent TCEQ Surface Water Quality Monitoring Procedures, Volume 1.

Air Temp 30.0 °C Water Temp 28.5 °C Secchi 0.262 m

5. Riparian Zone (Mark dominant categories with L (Left Bank) and R (Right Bank). Bank orientation is determined by the investigator facing downstream.)

LR Forest	____ Urban	____ Rip rap
____ Shrub dominated corridor	____ Pasture	____ Concrete
____ Herbaceous marsh	____ Row crops	Other (specify): ____
____ Mowed/maintained corridor	____ Denuded/Eroded bank	

6. Ease of bank access to the water body: ☐ Easy ☒ Moderately easy ☐ Moderately difficult ☐ Difficult

7. Please describe access opportunities or explain why the site is not easily accessible (Attach photos for documentation): Soft Slippery Sand/mud banks. gravel drive going under bridge. Some deep ruts. easy water access under bridge

8. Dominant Primary Substrate

☐ Cobble ☒ Sand ☐ Silt ☐ Mud/Clay ☐ Gravel ☐ Bedrock ☐ Rip rap ☐ Concrete

E QC
JB TB
6/30 7/1

Field Data Sheets – Basic RUAA Survey

Stream Name: Navasota river below lake Limestone Site: 1
Date: 6/26/10 Time: 1005-1100

B. Primary Contact Water Recreation Evaluation:
- Primary contact recreation draft definition: Water recreation activities, such as wading by children, swimming, water skiing, diving, tubing, surfing, and whitewater kayaking, canoeing, and rafting, involving a significant risk of ingestion of water.

1. Were water recreation activities that involve a significant risk of ingestion (full body immersion) observed at this site?
☐ Yes ☒ No primary contact recreation activities were observed

a. Check the following boxes of primary contact recreation activities observed at the time of the sampling event at the site (Attach photos of the activities or lack of activities).

☐ Wading-Children
☐ Wading-Adults
☐ Swimming
☐ Water skiing
☐ Diving
☐ Tubing
☐ Surfing
☐ Whitewater-kayaking, canoeing, rafting
☐ Other: _____
☐ frequent public swimming-created by publicly owned land or commercial operations
☒ No primary contact activities that commonly occur were observed

b. Check the number of individuals observed at the site: ☒ None ☐ 1-10 ☐ 11-20 ☐ 20-50 ☐ greater than 50

c. Check the following that apply regarding the individuals proximity to the water body.
☐ Water in mouth or nose of the individual ☐ Primary touch: Individual's body (or portion) immersed in water
☐ Secondary touch: fishing, pets and related contact with water ☐ Individual is in a boat touching water
☐ Individual is on shore near water within 8 meters (25ft) of water ☐ Individual is well away from water between 8 and 30 meters (100 ft) ☒ Not applicable

2. If primary contact recreation activities are not observed, describe the physical characteristics of the water body that may hinder the frequency of primary contact (depth, etc.) (Attach photos, etc. for documentation).
turbid water, some riprap and debris in water

3. Describe if there is public access (e.g. parks, roads, etc.) (Attach photos, maps, etc. for documentation).
Good public access, gravel pull off from road to beneath the bridge.

4. Is an area with primary contact recreation activities or a bathing beach (e.g. state/local parks with swimming, etc.) located near (e.g. within 5 miles upstream and downstream) this site? No

C. Secondary Contact Water Recreation Evaluation:
- Secondary contact recreation 1: Water recreation activities, such as fishing, commercial and recreational boating, and limited body contact incidental to shoreline activity, not involving a significant risk of water ingestion and that commonly occur.
- Secondary contact recreation 2: Water recreation activities, such as fishing, commercial and recreational boating, and limited body contact incidental to shoreline activity, not involving a significant risk of water ingestion but that occur less frequently than for secondary contact recreation 1 due to (1) physical characteristics of the water body and/or (2) limited public access.

1. Were water recreation activities observed at the site, but the nature of the recreation does not involve a significant risk of ingestion (e.g. secondary contact recreation activities)? ☐ Yes ☒ No secondary contact recreation activities were observed

a. Check the following boxes of secondary contact recreation activities that were observed at the time of the sampling event at the site (Attach photos of activities or lack of activities).

☐ Fishing
☐ Boating-commercial, recreational
☐ Non-whitewater-kayaking, rafting, canoeing
☒ No secondary contact recreation activities were observed
☐ Other secondary contact activities: _____

Field Data Sheets – Basic RUAA Survey

Stream Name Nowasota river below lake limestone Site: 1
Date: 6/26/10 Time: 1005 - 1100

b. Check the number of individuals observed at the site.
X None ☐ 1-10 ☐ 11-20 ☐ 20-50 ☐ greater than 50

c. Check the following that apply regarding the individuals proximity to the water body.
☐ Secondary touch: fishing, pets and related contact with water ☐ In a boat touching water
☐ Body on shore near water within 8 meters (25ft) of water ☐ Body well away from water between 8 and 30 meters (100 ft) ☒ NA

2. If secondary contact recreation activities are not observed, describe the physical characteristics of the water body that may hinder the frequency of secondary contact (Attach photos, etc. for documentation).

Same

3. If secondary contact recreation activities are observed, how often do water recreational activities occur that do not involve a significant risk of water ingestion? ☐ frequently ☐ infrequently
Please describe how often the activities occur? ~~☒ Unknown~~ ☐ Never ☐ Daily ☐ Monthly ☐ Yearly N/A

4. If infrequently, what is the reason? ☐ physical characteristics of the water body ☐ limited public access ☐ other
If other, list reasons: N/A

5. Describe the physical characteristics of the water body that hinders the frequency of secondary contact recreation (depth, etc.) (Attach photos or depth measurements, etc. for documentation).

Same

6. Describe why there is limited public access (e.g. lack of roads, river or stream banks overgrown, etc.) (Attach photos, maps, etc. for documentation).

Same

D. Noncontact Recreation Evaluation

Noncontact recreation applies to water bodies where recreation activities do not involve a significant risk of water ingestion, and where primary and secondary contact recreation uses do not occur because of unsafe conditions, such as barge traffic.

1. Provide site-specific information and documentation (including photographs) regarding unsafe conditions, recreation activities, and presence or absence of water recreation activities.

Field Data Sheets – Basic RUAA Survey

Stream Name Navasota river below lake limestone Site: 1
Date: 6/26/10 FDS Page 3 of 8 Time: 1005-1100

E. Stream Channel and Substantial Pools
Please check the following which best describes the river or stream: ☐ Wadeable ☒ Non-wadeable

1. Wadeable Streams
Determine whether or not the average depth at the thalweg is greater than 0.5 meters and if there are substantial pools with a depth of 1 meter or greater. Walk an approximately 300 meter reach (total) at the site and take the following measurements within the 300 meter reach. Measurements should be taken during base flow conditions (sustained or typical dry, warm-weather flows between rainfall events, excluding unusual antecedent conditions of drought or wet weather

Also, take photos facing upstream, downstream, left bank, and right bank at the 30 meters, 150 meters, and 300 meters.

60 m Photos #s (~~30~~ meters) Upstream ✓ Downstream ✓ Left Bank ✓ Right Bank ✓
Photos #s (150 meters) Upstream ✓ Downstream ✓ Left Bank ✓ Right Bank ✓
Photos #s (300 meters) Upstream ✓ Downstream ✓ Left Bank ✓ Right Bank ✓

a) Substantial pools - Measure the length of each pool (if > 10 pools only measure 10 pools), the width (at the widest point), and the deepest depth. A substantial pool is considered a pool greater than 10 meters in length for the purposes of a Basic RUAA Survey. If depth and/or width measurements were not attainable, explain why.

	Length (meters)	Width (meters)	Depth (meters)
Pool 1			
Pool 2			
Pool 3			
Pool 4			
Pool 5			
Pool 6			
Pool 7			
Pool 8			
Pool 9			
Pool 10			

b)Average depth at the thalweg –Take depth measurements approximately every 30 meters to calculate an average depth at the thalweg (at least 10 measurements needed). If depth and/or width measurements were not attainable, explain why.

Distance	(XC) Depth	(meters)
30 meters		
60 meters		
90 meters		
120 meters	>4ft	>1.22m
150 meters		
180 meters		
210 meters		
240 meters		
270 meters		
300 meters		
Average		

Field Data Sheets – Basic RUAA Survey

Stream Name: Navasota river below Lake Limestone Site: 7
Date: 6/26/10 Time: 1005-1100

c) Stream width - Measure (1) the width at one point which represents the typical average width of the 300 meter reach; (2) the width at the narrowest point of the stream within the 300 meter reach; and (3) the width at the widest point of the stream within the 300 meter reach.

Measurement Type	Width (meters)
Typical Average Width of 300 meter reach	
Width at narrowest point of the stream within 300 meter reach	
Width at the widest point of the stream within 300 meter reach	

d) Is there sufficient water within a 300 meter stream reach during base flow conditions to support primary contact recreation? ☒ Yes ☐ No
COMMENTS:

2. Non-wadeable Streams
If accessible, take 10 width measurements which represent typical widths of the 300 meter reach. If the water is too deep and not accessible record the estimated average width of the water body.

Also, take photos facing upstream, downstream, left bank, and right bank at .
Photos #s (30 meters) Upstream____ Downstream____ Left Bank ____ Right Bank____
Photos #s (150 meters) Upstream____ Downstream____ Left Bank ____ Right Bank____
Photos #s (300 meters) Upstream____ Downstream____ Left Bank ____ Right Bank____

# Measurements	Width (meters)
1	
2	
3	16m
4	15m
5	24ft / 7.32m
6	16m
7	18m
8	16m
9	10m
10	21m

— No access to the bank to determine width.

Field Data Sheets – Basic RUAA Survey

Stream Name: Navasota River below Lake Limestone Site: 1
Date: 6/26/10 Time: 1005-1100

F. Additional RUAA Information

1. Check the following activities observed over the site reach.

- ☐ Drinking or water in mouth
- ☐ Bathing
- ☐ Walking
- ☐ Jogging/running
- ☐ Bicycling
- ☐ Standing
- ☐ Sitting
- ☐ Lying down/sleeping
- ☐ Playing on shoreline
- ☐ Picnicking
- ☐ Motorcycle/ATV
- ☐ Hunting/Trapping
- ☐ Wildlife watching
- ☒ None
- ☐ Other: _____

2. Are there permanent or long-term hydrologic modifications that are constructed and operated in a way that affects the recreational uses? ☐ Yes ☒ No (If yes, please provide supporting documentation and photos.)

Comments: _____

3. Check any channel obstructions that apply (Attach photos).

- ☐ Culverts
- ☐ Barbed wire
- ☐ Utility pipe
- ☐ Fences
- ☐ Dams
- ☐ Other (specify): _____
- ☐ Log jams
- ☐ Thick vegetation
- ☒ Rip rap
- ☐ Low bridges
- ☐ Water control structure
- ☐ None

4. Check all surrounding conditions that promote recreational activities (Attach photos of evidence or unusual items of interest).

- ☐ Campgrounds
- ☐ Playgrounds
- ☒ Rural area
- ☐ Residential
- ☐ National forests
- ☐ Urban/suburban location
- ☐ Golf Course
- ☐ Sports Field
- ☐ Stairs/walkway
- ☐ Boating access (ramps)
- ☐ Beach
- ☒ Bridge crossing
- ☐ Commercial boating
- ☒ Trails/paths (hiking/biking)
- ☐ Paved parking lot
- ☐ Unimproved parking lot
- ☒ Roads (paved/unpaved)
- ☐ Populated area
- ☐ Docks or rafts
- ☐ Commercial outfitter
- ☐ Nearby school
- ☐ Power Line Corridor
- ☐ Parks (national/city/county/state)
- ☐ Public Property
- ☐ Other: _____
- ☐ None of the Above

Comments: _____

5. Check all surrounding conditions that impede recreational activities (Attach photos of evidence or unusual items of interest).

- ☐ Private Property
- ☐ No trespass sign
- ☐ Wildlife
- ☐ Steep slopes
- ☐ No public access
- ☐ No roads
- ☐ Fence
- ☐ Barge/ship traffic
- ☐ Industrial
- ☒ None of the Above
- ☐ Other: _____

Comments: _____

6. Check any indications of human use (Attach photos).

- ☒ Roads
- ☐ Rope swings
- ☐ Dock/platform
- ☒ Foot paths/prints
- ☐ Other: _____
- ☐ RV/ATV Tracks
- ☐ Camping Sites
- ☐ Fire pit/ring
- ☒ Fishing Tackle
- ☐ NPDES Discharge
- ☐ Gates on corridor
- ☐ Children's toys
- ☐ Remnant's of Kid's play
- ☐ Organized event
- ☐ No Human Presence

Comments: fishing line hanging from a tree

Navasota **Field Data Sheets – Basic RUAA Survey**

Stream Name: below lake limestone river Site: 1

Date: 6/26/10 Time: 1005-1100

7. Check all water characteristics that apply (Attach photos).

Aquatic Vegetation: X absent ☐ rare ☐ common ☐ abundant

Algae Cover: X absent ☐ rare ☐ common ☐ abundant

Odor: X none ☐ rare ☐ common ☐ abundant

Color: ☐ clear ☐ green ☐ red X brown ☐ black

Bottom Deposit: ☐ sludge ☐ solids X fine sediments ☐ none ☐ other

Water Surface: X clear ☐ scum ☐ foam ☐ debris ☐ oil

Other:

8. Vertebrates Observed within 300 meter reach

Snakes	X None	☐ slight presence	☐ moderate presence	☐ large presence
Water Dependent Birds	X None	☐ slight presence	☐ moderate presence	☐ large presence
Alligators	X None	☐ slight presence	☐ moderate presence	☐ large presence

Comments:

9. Mammals Observed within 300 meter reach

Wild	X None	☐ slight presence	☐ moderate presence	☐ large presence
Domesticated Pets	X None	☐ slight presence	☐ moderate presence	☐ large presence
Livestock	X None	☐ slight presence	☐ moderate presence	☐ large presence
Feral Hogs	X None	☐ slight presence	☐ moderate presence	☐ large presence

Comments:

10. Evidence of wild animals or evidence of birds, cattle, hogs, etc.

X Tracks ☐ Fecal droppings ☐ Bird nests raccoon, deer

11. Garbage Observed

Large garbage in the channel	X None	☐ Rare	☐ Common	☐ Abundant
Small garbage in the channel	X None	☐ Rare	☐ Common	☐ Abundant
Bank Garbage	☐ None	X Rare	☐ Common	☐ Abundant

Briefly describe the kinds of garbage observed: Drink containers, ice bag, beer cans, Aluminum foil, beer box. paper bits.

12. Is the site located in a wildlife preserve with large wildlife (i.e waterfowl) population? ☐ Yes X No

13. Please document any other relevant information regarding recreational activities and the water body in general (for example, area outside of the stream reach evaluated).

Field Data Sheet - Basic RUAA Survey

Stream Flow (Discharge) Measurement

Stream: Navasota river below lake Limestone Date: 6/26/10

Site: 1 Site

Description: US 79 @ Navasota

Time Begin: 1025 Time End: 1045 Meter Type: Sontek Flowtracker

Observers: J. West, M. Shepard Stream Width*: 24' Section Width (W): 1.2'

Observations: Rip Rap under bridge, and downed trees in water.

Section Midpoint (ft) (m)	Section Depth (ft) (m) (cm) (D)	Observational Depth** (ft)(m)	Velocity (V) At Point (ft/s)(m/s)	Velocity (V) Average (ft/s)(m/s)	Flow (Q) (m^3/s) (ft^3/s) Q = (W)(D)(V)
0.6	0.5			0.25	
1.8	0.7			0.73	
3.0	0.7			0.89	
4.2	0.7			0.96	
5.4	0.9			1.21	
6.6	0.9			1.18	
7.8	1.0			1.45	
9.0	1.0			1.04	
10.2	1.1			1.09	
11.4	1.1			1.37	
12.6	1.2			1.21	
13.8	1.3			1.31	
15.0	1.3			1.39	
16.2	1.2			1.13	
17.4	1.3			0.74	
18.6	1.15			0.51	
19.8	0.8			0.21	
21.0	0.8			0.57	
22.2	0.6			0.43	
23.4	0.35			0.03	

total Q = 21.599 cfs

2

Field Data Sheets – Basic RUAA Survey

(should be completed for each site)

Data Collectors & Contact Information: ~~[illegible]~~ J. Wrast, M. Shipman, R. Thompson, L. Bellavides	
Date & Time: 6/26/10 1155-1235	County Name: Robertson/Leon/Madison
Stream Name: Navasota River below Lake Limestone	
Segment No. or nearest downstream Segment No.: 1209	
Description of Site: County Line Rd @ Navasota	

At any point during the Basic RUAA Survey it becomes apparent that primary contact recreation is clearly the use for the water body the investigator should stop conducting the UAA.

A. Stream Characteristics:

1. Check the following channel flow status that applies.

☐ dry ☐ no flow ☐ low ☒ normal ☐ high ☐ flooded

2. Check the following stream type that applies on the day of the survey:

☐ Ephemeral: A stream which flows only during or immediately after a rainfall event, and contains no refuge pools capable of sustaining a viable community of aquatic organisms.

☐ Intermittent: A stream which has a period of zero flow for at least one week during most years. Where flow records are available, a stream with a 7Q2 flow of less than 0.1 cubic feet per second is considered intermittent.

☐ Intermittent w/ perennial pools: An intermittent stream which maintains persistent pools even when flow in the stream is less than 0.1 cubic feet per second.

☒ Perennial: A stream which flows continuously throughout the year. Perennial streams have a 7Q2 equal to or greater than 0.1 cubic feet per second.

☐ Designated or unclassified tidal stream: A stream that is tidally influenced. If you checked this box, you will need to contact the Water Quality Standards Group and evaluate whether or not a bathing beach is located along the tidal stream and whether or not a bathing beach is located along the estuary, bay or Gulf water that the tidal stream flows into.

3. Streamflow

Use USGS gage data (if a gage is located at a site or within a quarter mile of a site) or use the Stream Flow (Discharge) Measurement Form and follow the procedures outlined in the most recent TCEQ Surface Water Quality Monitoring Procedures, Volume 1, RG-415. If USGS gage data is used for a site, include that information as an attachment and list the streamflow on the sampling date below. If the stream flow taken at one site is representative of the flow at another site(s), then that flow can be used as the observed flow and should be documented below. If the stream flow measured at one site is different from another site, then stream flow should be taken at both sites. 43.7 cfs

4. Water Quality Data (Field Parameters)

Field parameters should be collected in accordance with the procedures outlined in the most recent TCEQ Surface Water Quality Monitoring Procedures, Volume 1.

Air Temp 32 °C Water Temp 29.5 °C Secchi 0.22 m

5. Riparian Zone (Mark dominant categories with L (Left Bank) and R (Right Bank). Bank orientation is determined by the investigator facing downstream.)

4R Forest	____ Urban	____ Rip rap
____ Shrub dominated corridor	____ Pasture	____ Concrete
____ Herbaceous marsh	____ Row crops	Other (specify): ____
____ Mowed/maintained corridor	____ Denuded/Eroded bank	

6. Ease of bank access to the water body: ☒ Easy ☐ Moderately easy ☐ Moderately difficult ☐ Difficult

7. Please describe access opportunities or explain why the site is not easily accessible (Attach photos for documentation): gravel drive from road to under bridge, plenty of parking area.

8. Dominant Primary Substrate

☐ Cobble ☒ Sand ☐ Silt ☐ Mud/Clay ☐ Gravel ☐ Bedrock ☐ Rip rap ☐ Concrete

E QC
JB TB
6/30 7/1

Field Data Sheets – Basic RUAA Survey

Stream Name Navasota river below lake Limestone Site: 2
Date: 6/26/10 Time: 1155 - 1235

B. Primary Contact Water Recreation Evaluation:
- Primary contact recreation draft definition: Water recreation activities, such as wading by children, swimming, water skiing, diving, tubing, surfing, and whitewater kayaking, canoeing, and rafting, involving a significant risk of ingestion of water.

1. Were water recreation activities that involve a significant risk of ingestion (full body immersion) observed at this site?
☐ Yes ☒ No primary contact recreation activities were observed

a. Check the following boxes of primary contact recreation activities observed at the time of the sampling event at the site (Attach photos of the activities or lack of activities).

☐ Wading-Children ☐ Tubing ☒ No primary contact activities that commonly occur were observed
☐ Wading-Adults ☐ Surfing
☐ Swimming ☐ Whitewater-kayaking, canoeing, rafting
☐ Water skiing ☐ Other: _____
☐ Diving ☐ frequent public swimming-created by publicly owned land or commercial operations

b. Check the number of individuals observed at the site: ☒ None ☐ 1-10 ☐ 11-20 ☐ 20-50 ☐ greater than 50

c. Check the following that apply regarding the individuals proximity to the water body.
☐ Water in mouth or nose of the individual ☐ Primary touch: Individual's body (or portion) immersed in water
☐ Secondary touch: fishing, pets and related contact with water ☐ Individual is in a boat touching water
☐ Individual is on shore near water within 8 meters (25ft) of water ☐ Individual is well away from water between 8 and 30 meters (100 ft) ☒ Not applicable

2. If primary contact recreation activities are not observed, describe the physical characteristics of the water body that may hinder the frequency of primary contact (depth, etc.) (Attach photos, etc. for documentation).
turbid water,

3. Describe if there is public access (e.g. parks, roads, etc.) (Attach photos, maps, etc. for documentation).
good public access, parking.

4. Is an area with primary contact recreation activities or a bathing beach (e.g. state/local parks with swimming, etc.) located near (e.g. within 5 miles upstream and downstream) this site? NO

C. Secondary Contact Water Recreation Evaluation:
- Secondary contact recreation 1: Water recreation activities, such as fishing, commercial and recreational boating, and limited body contact incidental to shoreline activity, not involving a significant risk of water ingestion and that commonly occur.
- Secondary contact recreation 2: Water recreation activities, such as fishing, commercial and recreational boating, and limited body contact incidental to shoreline activity, not involving a significant risk of water ingestion but that occur less frequently than for secondary contact recreation 1 due to (1) physical characteristics of the water body and/or (2) limited public access.

1. Were water recreation activities observed at the site, but the nature of the recreation does not involve a significant risk of ingestion (e.g. secondary contact recreation activities)? ☐ Yes ☒ No secondary contact recreation activities were observed

a. Check the following boxes of secondary contact recreation activities that were observed at the time of the sampling event at the site (Attach photos of activities or lack of activities).

☐ Fishing
☐ Boating-commercial, recreational
☐ Non-whitewater-kayaking, rafting, canoeing
☒ No secondary contact recreation activities were observed
☐ Other secondary contact activities: _____

Field Data Sheets – Basic RUAA Survey

Stream Name Navasota River below lake Limestone Site: 2
Date: 6/26/10 Time: 1155 - 1235

b. Check the number of individuals observed at the site.
☒ None ☐ 1-10 ☐ 11-20 ☐ 20-50 ☐ greater than 50

c. Check the following that apply regarding the individuals proximity to the water body.
☐ Secondary touch: fishing, pets and related contact with water ☐ In a boat touching water
☐ Body on shore near water within 8 meters (25ft) of water ☐ Body well away from water between 8 and 30 meters (100 ft) ☒ N/A

2. If secondary contact recreation activities are not observed, describe the physical characteristics of the water body that may hinder the frequency of secondary contact (Attach photos, etc. for documentation).

Same

3. If secondary contact recreation activities are observed, how often do water recreational activities occur that do not involve a significant risk of water ingestion? ☐ frequently ☐ infrequently N/A
Please describe how often the activities occur? ☒ ~~Unknown~~ ☐ Never ☐ Daily ☐ Monthly ☐ Yearly

4. If infrequently, what is the reason? ☐ physical characteristics of the water body ☐ limited public access ☐ other
If other, list reasons: N/A

5. Describe the physical characteristics of the water body that hinders the frequency of secondary contact recreation (depth, etc.) (Attach photos or depth measurements, etc. for documentation).

Same

6. Describe why there is limited public access (e.g. lack of roads, river or stream banks overgrown, etc.) (Attach photos, maps, etc. for documentation).

Same

D. Noncontact Recreation Evaluation

Noncontact recreation applies to water bodies where recreation activities do not involve a significant risk of water ingestion, and where primary and secondary contact recreation uses do not occur because of unsafe conditions, such as barge traffic.

1. Provide site-specific information and documentation (including photographs) regarding unsafe conditions, recreation activities, and presence or absence of water recreation activities.

Field Data Sheets – Basic RUAA Survey

Stream Name Navasota river below lake Limestone Site: 2
Date: 6/26/10 FDS Page 3 of 8 Time: 1155-1235

E. Stream Channel and Substantial Pools
Please check the following which best describes the river or stream: ☑ Wadeable ☐ Non-wadeable

1. Wadeable Streams
Determine whether or not the average depth at the thalweg is greater than 0.5 meters and if there are substantial pools with a depth of 1 meter or greater. Walk an approximately 300 meter reach (total) at the site and take the following measurements within the 300 meter reach. Measurements should be taken during base flow conditions (sustained or typical dry, warm-weather flows between rainfall events, excluding unusual antecedent conditions of drought or wet weather

Also, take photos facing upstream, downstream, left bank, and right bank at the 30 meters, 150 meters, and 300 meters.
Photos #s (30 meters) Upstream ✓ Downstream ✓ Left Bank ✓ Right Bank ✓
Photos #s (150 meters) Upstream ✓ Downstream ✓ Left Bank ✓ Right Bank ✓
Photos #s (300 meters) Upstream ✓ Downstream ✓ Left Bank ✓ Right Bank ✓

a) Substantial pools - Measure the length of each pool (if > 10 pools only measure 10 pools), the width (at the widest point), and the deepest depth. A substantial pool is considered a pool greater than 10 meters in length for the purposes of a Basic RUAA Survey. If depth and/or width measurements were not attainable, explain why.

	Length (meters)	Width (meters)	Depth (meters)
Pool 1			
Pool 2			
Pool 3			
Pool 4			
Pool 5			
Pool 6			
Pool 7			
Pool 8			
Pool 9			
Pool 10			

b)Average depth at the thalweg –Take depth measurements approximately every 30 meters to calculate an average depth at the thalweg (at least 10 measurements needed). If depth and/or width measurements were not attainable, explain why.

Distance	Depth (meters)	
30 meters	1.45 ft	0.44m
60 meters	1.3 ft	0.40m
90 meters	1.6 ft	0.49m
120 meters	1.7 ft	0.52m
150 meters	2.1 ft	0.64m
180 meters	1.9 ft	0.58m
210 meters	3.2 ft	0.98m
240 meters	2.4 ft	0.73m
270 meters	ft	1.22m
300 meters	ft	1.22m
Average		0.72

Field Data Sheets – Basic RUAA Survey

Stream Name Navasota River below lake Limestone Site: 2
Date: 6/26/10 Time: 1155 - 1235

c) Stream width - Measure (1) the width at one point which represents the typical average width of the 300 meter reach; (2) the width at the narrowest point of the stream within the 300 meter reach; and (3) the width at the widest point of the stream within the 300 meter reach.

Measurement Type	Width (meters)	
Typical Average Width of 300 meter reach	44.2 ft	13.47 m
Width at narrowest point of the stream within 300 meter reach	46.4 ft	14.14 m
Width at the widest point of the stream within 300 meter reach	29.2 ft	8.90 m

d) Is there sufficient water within a 300 meter stream reach during base flow conditions to support primary contact recreation? ☒ Yes ☐ No
COMMENTS:

2. Non-wadeable Streams N/A
If accessible, take 10 width measurements which represent typical widths of the 300 meter reach. If the water is too deep and not accessible record the estimated average width of the water body.

Also, take photos facing upstream, downstream, left bank, and right bank at .
Photos #s (30 meters) Upstream____ Downstream____ Left Bank ____ Right Bank____
Photos #s (150 meters) Upstream____ Downstream____ Left Bank ____ Right Bank____
Photos #s (300 meters) Upstream____ Downstream____ Left Bank ____ Right Bank____

# Measurements	Width (meters)
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	

Navasota **Field Data Sheets – Basic RUAA Survey**

Stream Name river below lake Limestone Site: 2

Date: 6/26/10 Time: 1155 – 1235

F. Additional RUAA Information

1. Check the following activities observed over the site reach.

- ☐ Drinking or water in mouth
- ☐ Bathing
- ☐ Walking
- ☐ Jogging/running
- ☐ Bicycling
- ☐ Standing
- ☐ Sitting
- ☐ Lying down/sleeping
- ☐ Playing on shoreline
- ☐ Picnicking
- ☐ Motorcycle/ATV
- ☐ Hunting/Trapping
- ☐ Wildlife watching
- ☒ None
- ☐ Other: _____

2. Are there permanent or long-term hydrologic modifications that are constructed and operated in a way that affects the recreational uses? ☐ Yes ☒ No (If yes, please provide supporting documentation and photos.)

Comments: _____

3. Check any channel obstructions that apply (Attach photos).

- ☐ Culverts
- ☐ Barbed wire
- ☐ Utility pipe
- ☐ Fences
- ☐ Dams
- ☐ Other (specify): _____
- ☐ Log jams
- ☐ Thick vegetation
- ☐ Rip rap
- ☐ Low bridges
- ☐ Water control structure
- ☒ None

4. Check all surrounding conditions that promote recreational activities (Attach photos of evidence or unusual items of interest).

- ☐ Campgrounds
- ☐ Playgrounds
- ☒ Rural area
- ☐ Residential
- ☐ National forests
- ☐ Urban/suburban location
- ☐ Golf Course
- ☐ Sports Field
- ☐ Stairs/walkway
- ☒ Boating access (ramps)
- ☐ Beach
- ☒ Bridge crossing
- ☐ Commercial boating
- ☒ Trails/paths (hiking/biking)
- ☐ Paved parking lot
- ☒ Unimproved parking lot
- ☒ Roads (paved/unpaved)
- ☐ Populated area
- ☐ Docks or rafts
- ☐ Commercial outfitter
- ☐ Nearby school
- ☐ Power Line Corridor
- ☐ Parks (national/city/county/state)
- ☐ Public Property
- ☐ Other: _____
- ☐ None of the Above

Comments: _____

5. Check all surrounding conditions that impede recreational activities (Attach photos of evidence or unusual items of interest).

- ☐ Private Property
- ☐ No trespass sign
- ☐ Wildlife
- ☐ Steep slopes
- ☐ No public access
- ☐ No roads
- ☒ Fence
- ☐ Barge/ship traffic
- ☐ Industrial
- ☒ None of the Above
- ☐ Other: _____

Comments: _____

6. Check any indications of human use (Attach photos).

- ☒ Roads
- ☐ Rope swings
- ☐ Dock/platform
- ☒ Foot paths/prints
- ☐ Other: _____
- ☐ RV/ATV Tracks
- ☐ Camping Sites
- ☒ Fire pit/ring
- ☒ Fishing Tackle
- ☐ NPDES Discharge
- ☐ Gates on corridor
- ☐ Children's toys
- ☐ Remnant's of Kid's play
- ☐ Organized event
- ☐ No Human Presence

Comments: fishing line in tree and hook on shore

Navasota **Field Data Sheets – Basic RUAA Survey**

Stream Name: river below lake Limestone Site: 2

Date: 6/26/10 Time: 1155 - 1235

7. Check all water characteristics that apply (Attach photos).

Aquatic Vegetation: X absent ☐ rare ☐ common ☐ abundant

Algae Cover: X absent ☐ rare ☐ common ☐ abundant

Odor: X none ☐ rare ☐ common ☐ abundant

Color: ☐ clear ☐ green ☐ red X brown ☐ black

Bottom Deposit: ☐ sludge ☐ solids X fine sediments ☐ none ☐ other

Water Surface: X clear ☐ scum ☐ foam ☐ debris ☐ oil

Other:

8. Vertebrates Observed within 300 meter reach

Snakes X None ☐ slight presence ☐ moderate presence ☐ large presence

Water Dependent Birds X None ☐ slight presence ☐ moderate presence ☐ large presence

Alligators X None ☐ slight presence ☐ moderate presence ☐ large presence

Comments:

9. Mammals Observed within 300 meter reach

Wild X None ☐ slight presence ☐ moderate presence ☐ large presence

Domesticated Pets X None ☐ slight presence ☐ moderate presence ☐ large presence

Livestock X None ☐ slight presence ☐ moderate presence ☐ large presence

Feral Hogs X None ☐ slight presence ☐ moderate presence ☐ large presence

Comments:

10. Evidence of wild animals or evidence of birds, cattle, hogs, etc.

X Tracks ☐ Fecal droppings ☐ Bird nests Deer

11. Garbage Observed

Large garbage in the channel ☐ None X Rare ☐ Common ☐ Abundant TV

Small garbage in the channel X None ☐ Rare ☐ Common ☐ Abundant

Bank Garbage ☐ None ☐ Rare X Common ☐ Abundant

Briefly describe the kinds of garbage observed: baby car seat, bags of trash, shotgun shells, beer cans, cardboard.

12. Is the site located in a wildlife preserve with large wildlife (i.e waterfowl) population? ☐ Yes X No

13. Please document any other relevant information regarding recreational activities and the water body in general (for example, area outside of the stream reach evaluated).

Field Data Sheet - Basic RUAA Survey
Stream Flow (Discharge) Measurement

Stream: Navasota River below Lake Limestone Date: 6/24/10
Site: 2 Site
Description: County Line Rd @ Navasota
Time Begin: 1155 Time End: 1225 Meter Type: Sontek Flowtracker
Observers: J. West, M. Shepard Stream Width*: 44 Section Width (W): 2.2
Observations: Some debris in water downstream from flow site

Section Midpoint (ft) (m)	Section Depth (ft) (m) (cm) (D)	Observational Depth** (ft)(m)	Velocity (V) At Point (ft/s)(m/s)	Velocity (V) Average (ft/s)(m/s)	Flow (Q) (m^3/s) (ft^3/s) Q = (W)(D)(V)
1.1	0.6			0.53	
3.3	0.9			0.67	
5.5	0.95			0.78	
7.7	0.9			0.82	
9.9	1.0			0.71	
12.1	0.95			0.74	
14.3	0.9			0.75	
16.5	0.9			0.77	
18.7	1.0			0.85	
20.9	1.0			0.84	
23.1	1.15			0.77	
25.3	1.3			0.87	
27.5	1.4			0.94	
29.7	1.5			0.85	
31.9	1.6			0.88	
34.1	1.7			0.91	
36.3	1.9			0.86	
38.5	1.85			0.84	
40.7	1.75			0.94	
42.9	~~0.9~~ 1.2 jw			0.5	

Total Q: 43.211 cfs

3

Field Data Sheets – Basic RUAA Survey

(should be completed for each site)

Data Collectors & Contact Information:	Wrast, M. Shepard, R. Thompson, L. Benevides
Date & Time: 6/26/10 1258-1328	County Name: Brazos / Madison
Stream Name: Navasota river below lake Limestone	
Segment No. or nearest downstream Segment No.: 1209	
Description of Site: US 190 @ Navasota	

At any point during the Basic RUAA Survey it becomes apparent that primary contact recreation is clearly the use for the water body the investigator should stop conducting the UAA.

A. Stream Characteristics:

1. Check the following channel flow status that applies.

☐ dry ☐ no flow ☐ low X normal ☐ high ☐ flooded

2. Check the following stream type that applies on the day of the survey:

☐ Ephemeral: A stream which flows only during or immediately after a rainfall event, and contains no refuge pools capable of sustaining a viable community of aquatic organisms.

☐ Intermittent: A stream which has a period of zero flow for at least one week during most years. Where flow records are available, a stream with a 7Q2 flow of less than 0.1 cubic feet per second is considered intermittent.

☐ Intermittent w/ perennial pools: An intermittent stream which maintains persistent pools even when flow in the stream is less than 0.1 cubic feet per second.

X Perennial: A stream which flows continuously throughout the year. Perennial streams have a 7Q2 equal to or greater than 0.1 cubic feet per second.

☐ Designated or unclassified tidal stream: A stream that is tidally influenced. If you checked this box, you will need to contact the Water Quality Standards Group and evaluate whether or not a bathing beach is located along the tidal stream and whether or not a bathing beach is located along the estuary, bay or Gulf water that the tidal stream flows into.

3. Streamflow

Use USGS gage data (if a gage is located at a site or within a quarter mile of a site) or use the Stream Flow (Discharge) Measurement Form and follow the procedures outlined in the most recent TCEQ Surface Water Quality Monitoring Procedures, Volume 1, RG-415. If USGS gage data is used for a site, include that information as an attachment and list the streamflow on the sampling date below. If the stream flow taken at one site is representative of the flow at another site(s), then that flow can be used as the observed flow and should be documented below. If the stream flow measured at one site is different from another site, then stream flow should be taken at both sites. ____ cfs

4. Water Quality Data (Field Parameters)

Field parameters should be collected in accordance with the procedures outlined in the most recent TCEQ Surface Water Quality Monitoring Procedures, Volume 1.

Air Temp 31 °C Water Temp 29 °C Secchi 0.27m

5. Riparian Zone (Mark dominant categories with L (Left Bank) and R (Right Bank). Bank orientation is determined by the investigator facing downstream.)

4R Forest	____ Urban	____ Rip rap
____ Shrub dominated corridor	____ Pasture	____ Concrete
____ Herbaceous marsh	____ Row crops	Other (specify): ____
____ Mowed/maintained corridor	____ Denuded/Eroded bank	

6. Ease of bank access to the water body: ☐ Easy X Moderately easy ☐ Moderately difficult ☐ Difficult

7. Please describe access opportunities or explain why the site is not easily accessible (Attach photos for documentation): moderatly steep bank, drive from road under bridge,

8. Dominant Primary Substrate

☐ Cobble ☐ Sand ☐ Silt X Mud/Clay ☐ Gravel ☐ Bedrock ☐ Rip rap ☐ Concrete

E JB 6/30 QC TB 7/1

Field Data Sheets – Basic RUAA Survey

Stream Name Navasota River below Lake Limestone Site: 3
Date: 6/26/19 Time: 1258 - 1328

B. Primary Contact Water Recreation Evaluation:
- Primary contact recreation draft definition: Water recreation activities, such as wading by children, swimming, water skiing, diving, tubing, surfing, and whitewater kayaking, canoeing, and rafting, involving a significant risk of ingestion of water.

1. Were water recreation activities that involve a significant risk of ingestion (full body immersion) observed at this site?
☐ Yes ☒ No primary contact recreation activities were observed
a. Check the following boxes of primary contact recreation activities observed at the time of the sampling event at the site (Attach photos of the activities or lack of activities).

☐ Wading-Children ☐ Tubing ☒ No primary contact activities that commonly occur were observed
☐ Wading-Adults ☐ Surfing
☐ Swimming ☐ Whitewater-kayaking, canoeing, rafting
☐ Water skiing ☐ Other: _____
☐ Diving ☐ frequent public swimming-created by publicly owned land or commercial operations

b. Check the number of individuals observed at the site: ☐ None ☒ 1-10 ☐ 11-20 ☐ 20-50 ☐ greater than 50

c. Check the following that apply regarding the individuals proximity to the water body.
☐ Water in mouth or nose of the individual ☐ Primary touch: Individual's body (or portion) immersed in water
☐ Secondary touch: fishing, pets and related contact with water ☐ Individual is in a boat touching water
☒ Individual is on shore near water within 8 meters (25ft) of water ☐ Individual is well away from water between 8 and 30 meters (100 ft) ☐ Not applicable

2. If primary contact recreation activities are not observed, describe the physical characteristics of the water body that may hinder the frequency of primary contact (depth, etc.) (Attach photos, etc. for documentation). turbid slow moving water, moderatly steep banks.

3. Describe if there is public access (e.g. parks, roads, etc.) (Attach photos, maps, etc. for documentation). good public access, Rd under Bridge, parking areas.

4. Is an area with primary contact recreation activities or a bathing beach (e.g. state/local parks with swimming, etc.) located near (e.g. within 5 miles upstream and downstream) this site? NO

C. Secondary Contact Water Recreation Evaluation:
- Secondary contact recreation 1: Water recreation activities, such as fishing, commercial and recreational boating, and limited body contact incidental to shoreline activity, not involving a significant risk of water ingestion and that commonly occur.
- Secondary contact recreation 2: Water recreation activities, such as fishing, commercial and recreational boating, and limited body contact incidental to shoreline activity, not involving a significant risk of water ingestion but that occur less frequently than for secondary contact recreation 1 due to (1) physical characteristics of the water body and/or (2) limited public access.

1. Were water recreation activities observed at the site, but the nature of the recreation does not involve a significant risk of ingestion (e.g. secondary contact recreation activities)? ☐ Yes ☒ No secondary contact recreation activities were observed
a. Check the following boxes of secondary contact recreation activities that were observed at the time of the sampling event at the site (Attach photos of activities or lack of activities).
☐ Fishing
☐ Boating-commercial, recreational
☐ Non-whitewater-kayaking, rafting, canoeing
☒ No secondary contact recreation activities were observed
☐ Other secondary contact activities: _____

Field Data Sheets – Basic RUAA Survey

Stream Name Navasota River Below Lake Limestone Site: 3
Date: 6/26/10 Time: 1258-1328

b. Check the number of individuals observed at the site.
_ None X 1-10 _ 11-20 _ 20-50 _ greater than 50

c. Check the following that apply regarding the individuals proximity to the water body.
☐ Secondary touch: fishing, pets and related contact with water ☐ In a boat touching water
X Body on shore near water within 8 meters (25ft) of water ☐ Body well away from water between 8 and 30 meters (100 ft)

2. If secondary contact recreation activities are not observed, describe the physical characteristics of the water body that may hinder the frequency of secondary contact (Attach photos, etc. for documentation).

Same

3. If secondary contact recreation activities are observed, how often do water recreational activities occur that do not involve a significant risk of water ingestion? _ frequently ☐ infrequently
Please describe how often the activities occur? X Unknown ☐ Never ☐ Daily ☐ Monthly ☐ Yearly N/A

4. If infrequently, what is the reason? ☐ physical characteristics of the water body _ limited public access ☐ other
If other, list reasons: N/A

5. Describe the physical characteristics of the water body that hinders the frequency of secondary contact recreation (depth, etc.) (Attach photos or depth measurements, etc. for documentation).

Same

6. Describe why there is limited public access (e.g. lack of roads, river or stream banks overgrown, etc.) (Attach photos, maps, etc. for documentation).

Same

D. Noncontact Recreation Evaluation

Noncontact recreation applies to water bodies where recreation activities do not involve a significant risk of water ingestion, and where primary and secondary contact recreation uses do not occur because of unsafe conditions, such as barge traffic.

1. Provide site-specific information and documentation (including photographs) regarding unsafe conditions, recreation activities, and presence or absence of water recreation activities.

Field Data Sheets – Basic RUAA Survey

Stream Name Nowasota river below lake limestone Site: 3
Date: 6/26/10 ~~FDS Page 3 of 8~~ Time: 1258-1328

E. Stream Channel and Substantial Pools
Please check the following which best describes the river or stream: ☐ Wadeable ☒ Non-wadeable

1. Wadeable Streams N/A
Determine whether or not the average depth at the thalweg is greater than 0.5 meters and if there are substantial pools with a depth of 1 meter or greater. Walk an approximately 300 meter reach (total) at the site and take the following measurements within the 300 meter reach. Measurements should be taken during base flow conditions (sustained or typical dry, warm-weather flows between rainfall events, excluding unusual antecedent conditions of drought or wet weather

Also, take photos facing upstream, downstream, left bank, and right bank at the 30 meters, 150 meters, and 300 meters.
Photos #s (30 meters) Upstream____ Downstream____ Left Bank ____ Right Bank____
Photos #s (150 meters) Upstream____ Downstream____ Left Bank ____ Right Bank____
Photos #s (300 meters) Upstream____ Downstream____ Left Bank ____ Right Bank____

a) Substantial pools - Measure the length of each pool (if > 10 pools only measure 10 pools), the width (at the widest point), and the deepest depth. A substantial pool is considered a pool greater than 10 meters in length for the purposes of a Basic RUAA Survey. If depth and/or width measurements were not attainable, explain why.

	Length (meters)	Width (meters)	Depth (meters)
Pool 1			
Pool 2			
Pool 3			
Pool 4			
Pool 5			
Pool 6			
Pool 7			
Pool 8			
Pool 9			
Pool 10			

b)Average depth at the thalweg –Take depth measurements approximately every 30 meters to calculate an average depth at the thalweg (at least 10 measurements needed). If depth and/or width measurements were not attainable, explain why.

Distance	Depth (meters)
30 meters	
60 meters	
90 meters	
120 meters	
150 meters	
180 meters	
210 meters	
240 meters	
270 meters	
300 meters	
Average	

Field Data Sheets – Basic RUAA Survey

Stream Name Nawasota river below lake Limestone Site: 3
Date: 6/26/10 Time: 1250-1328

c) Stream width - Measure (1) the width at one point which represents the typical average width of the 300 meter reach; (2) the width at the narrowest point of the stream within the 300 meter reach; and (3) the width at the widest point of the stream within the 300 meter reach.

Measurement Type	Width (meters)
Typical Average Width of 300 meter reach	
Width at narrowest point of the stream within 300 meter reach	
Width at the widest point of the stream within 300 meter reach	

d) Is there sufficient water within a 300 meter stream reach during base flow conditions to support primary contact recreation? ☒ Yes ☐ No
COMMENTS:

2. Non-wadeable Streams
If accessible, take 10 width measurements which represent typical widths of the 300 meter reach. If the water is too deep and not accessible record the estimated average width of the water body.

Also, take photos facing upstream, downstream, left bank, and right bank at .
Photos #s (~~30~~ 120 meters) Upstream ✓ Downstream ✓ Left Bank ✓ Right Bank ✓ 3
Photos #s (150 meters) Upstream ✓ Downstream ✓ Left Bank ✓ Right Bank ✓ 2
Photos #s (~~300~~ meters) Upstream ✓ Downstream ✓ Left Bank ✓ Right Bank ✓ 1

~~NLS 150~~ 300m

# Measurements	Width (meters)
1	19m
2	21m
3	17m
4	17m
5	16m
6	9m
7	
8	
9	
10	

* Could not complete full 300m due to steep slippery banks & deep water

Nawasota **Field Data Sheets – Basic RUAA Survey**

Stream Name: river below lake limestone Site: 3

Date: 6/26/10 Time: 1250 - 1325

F. Additional RUAA Information

1. Check the following activities observed over the site reach.

- ☐ Drinking or water in mouth
- ☐ Bathing
- ☒ Walking
- ☐ Jogging/running
- ☐ Bicycling
- ☐ Standing
- ☐ Sitting
- ☐ Lying down/sleeping
- ☐ Playing on shoreline
- ☐ Picnicking
- ☐ Motorcycle/ATV
- ☐ Hunting/Trapping
- ☒ Wildlife watching
- ☐ None
- ☐ Other: _____

2. Are there permanent or long-term hydrologic modifications that are constructed and operated in a way that affects the recreational uses? ☐ Yes ☒ No (If yes, please provide supporting documentation and photos.)

Comments: _____

3. Check any channel obstructions that apply (Attach photos).

- ☐ Culverts
- ☐ Barbed wire
- ☐ Utility pipe
- ☐ Fences
- ☐ Dams
- ☒ Other (specify): downed trees (pic), old pilings in water under bridge
- ☐ Log jams
- ☐ Thick vegetation
- ☐ Rip rap
- ☐ Low bridges
- Water control structure
- ☐ None

4. Check all surrounding conditions that promote recreational activities (Attach photos of evidence or unusual items of interest).

- ☐ Campgrounds
- ☐ Playgrounds
- ☒ Rural area
- ☐ Residential
- ☐ National forests
- ☐ Urban/suburban location
- ☐ Golf Course
- ☐ Sports Field
- ☐ Stairs/walkway
- ☐ Boating access (ramps)
- ☐ Beach
- ☒ Bridge crossing
- ☐ Commercial boating
- ☒ Trails/paths (hiking/biking)
- ☐ Paved parking lot
- ☐ Unimproved parking lot
- ☒ Roads (paved/unpaved)
- ☐ Populated area
- ☐ Docks or rafts
- ☐ Commercial outfitter
- ☐ Nearby school
- ☐ Power Line Corridor
- ☐ Parks (national/city/county/state)
- ☐ Public Property
- ☐ Other: _____
- ☐ None of the Above

Comments: _____

5. Check all surrounding conditions that impede recreational activities (Attach photos of evidence or unusual items of interest).

- ☐ Private Property
- ☐ No trespass sign
- ☐ Wildlife
- ☐ Steep slopes
- ☐ No public access
- ☐ No roads
- ☒ Fence
- ☐ Barge/ship traffic
- ☐ Industrial
- ☐ None of the Above
- ☐ Other: _____

Comments: _____

6. Check any indications of human use (Attach photos).

- ☒ Roads
- ☐ Rope swings
- ☐ Dock/platform
- ☒ Foot paths/prints
- ☐ Other: _____
- ☐ RV/ATV Tracks
- ☐ Camping Sites
- ☐ Fire pit/ring
- ☒ Fishing Tackle
- ☐ NPDES Discharge
- ☐ Gates on corridor
- ☐ Children's toys
- ☐ Remnant's of Kid's play
- ☐ Organized event
- ☐ No Human Presence

Comments: possible cast net, bait boxes, fish bones & skins on ground, glow stick

Navasota Field Data Sheets – Basic RUAA Survey

Stream Name: river below lake Limestone Site: 3
Date: 6/26/10 Time: 1258 – 1328

7. Check all water characteristics that apply (Attach photos).
Aquatic Vegetation: X absent ☐ rare ☐ common ☐ abundant
Algae Cover: X absent ☐ rare ☐ common ☐ abundant
Odor: X none ☐ rare ☐ common ☐ abundant
Color: ☐ clear ☐ green ☐ red X brown ☐ black
Bottom Deposit: X sludge ☐ solids ☐ fine sediments ☐ none ☐ other
Water Surface: X clear X scum ☐ foam X debris ☐ oil
Other: film on top of water, leaf litter floating

8. Vertebrates Observed within 300 meter reach

Snakes	☑ None	☐ slight presence	☐ moderate presence	☐ large presence
Water Dependent Birds	☑ None	☐ slight presence	☐ moderate presence	☐ large presence
Alligators	☑ None	☐ slight presence	☐ moderate presence	☐ large presence

Comments:

9. Mammals Observed within 300 meter reach

Wild	☑ None	☐ slight presence	☐ moderate presence	☐ large presence
Domesticated Pets	☑ None	☐ slight presence	☐ moderate presence	☐ large presence
Livestock	☑ None	☐ slight presence	☐ moderate presence	☐ large presence
Feral Hogs	☑ None	☐ slight presence	☐ moderate presence	☐ large presence

Comments:

10. Evidence of wild animals or evidence of birds, cattle, hogs, etc.
X Tracks ☐ Fecal droppings X Bird nests piece of skull
↳ swallows

11. Garbage Observed

Large garbage in the channel	X None	☐ Rare	☐ Common	☐ Abundant
Small garbage in the channel	X None	☐ Rare	☐ Common	☐ Abundant
Bank Garbage	☐ None	☐ Rare	X Common	☐ Abundant

Briefly describe the kinds of garbage observed: worm can, beer cans, wrappers, plastic bags ~~appliances~~ large furniture, bags of tin cans

12. Is the site located in a wildlife preserve with large wildlife (i.e waterfowl) population? ☐ Yes X No

13. Please document any other relevant information regarding recreational activities and the water body in general (for example, area outside of the stream reach evaluated).

Field Data Sheet - Basic RUAA Survey

Stream Flow (Discharge) Measurement

Stream: Nowasota river below lake limestone Date: 6/26/10

Site: 3 Site

Description: US 190 @ Nowasota

Time Begin: — Time End: — Meter Type: Sontek Flowtracker

Observers: J. Wrest, Stream Width*: Section Width (W):

Observations:

Section Midpoint (ft) (m)	Section Depth (ft) (m) (cm) (D)	Observational Depth** (ft)(m)	Velocity (V)		Flow (Q) (m^3/s) (ft^3/s) Q = (W)(D)(V)
			At Point (ft/s)(m/s)	Average (ft/s)(m/s)	

No Flow taken

Very little flow observed.

USGS Gage Station?

Field Data Sheets – Basic RUAA Survey

(should be completed for each site)

Data Collectors & Contact Information: M. Shepard, J. Wrast, R Thompson, L. Benavides	
Date & Time:	County Name: Brazos / Madison
Stream Name: Navasota River below Lake Limestone	
Segment No. or nearest downstream Segment No.: 1209	
Description of Site: Soggy Bottom ATV Ranch @ Navasota River	

At any point during the Basic RUAA Survey it becomes apparent that primary contact recreation is clearly the use for the water body the investigator should stop conducting the UAA.

A. Stream Characteristics:

1. Check the following channel flow status that applies.

☐ dry ☐ no flow ☐ low ☐ normal ☐ high ☐ flooded

2. Check the following stream type that applies on the day of the survey:

☐ Ephemeral: A stream which flows only during or immediately after a rainfall event, and contains no refuge pools capable of sustaining a viable community of aquatic organisms.

☐ Intermittent: A stream which has a period of zero flow for at least one week during most years. Where flow records are available, a stream with a 7Q2 flow of less than 0.1 cubic feet per second is considered intermittent.

☐ Intermittent w/ perennial pools: An intermittent stream which maintains persistent pools even when flow in the stream is less than 0.1 cubic feet per second.

☐ Perennial: A stream which flows continuously throughout the year. Perennial streams have a 7Q2 equal to or greater than 0.1 cubic feet per second.

☐ Designated or unclassified tidal stream: A stream that is tidally influenced. If you checked this box, you will need to contact the Water Quality Standards Group and evaluate whether or not a bathing beach is located along the tidal stream and whether or not a bathing beach is located along the estuary, bay or Gulf water that the tidal stream flows into.

3. Streamflow

Use USGS gage data (if a gage is located at a site or within a quarter mile of a site) or use the Stream Flow (Discharge) Measurement Form and follow the procedures outlined in the most recent TCEQ Surface Water Quality Monitoring Procedures, Volume 1, RG-415. If USGS gage data is used for a site, include that information as an attachment and list the streamflow on the sampling date below. If the stream flow taken at one site is representative of the flow at another site(s), then that flow can be used as the observed flow and should be documented below. If the stream flow measured at one site is different from another site, then stream flow should be taken at both sites. _____ cfs

4. Water Quality Data (Field Parameters)

Field parameters should be collected in accordance with the procedures outlined in the most recent TCEQ Surface Water Quality Monitoring Procedures, Volume 1.

Air Temp _____° C Water Temp _____° C

Secchi _____ m

5. Riparian Zone (Mark dominant categories with L (Left Bank) and R (Right Bank). Bank orientation is determined by the investigator facing downstream.)

_____ Forest	_____ Urban	_____ Rip rap
_____ Shrub dominated corridor	_____ Pasture	_____ Concrete
_____ Herbaceous marsh	_____ Row crops	Other (specify): _____
_____ Mowed/maintained corridor	_____ Denuded/Eroded bank	

6. Ease of bank access to the water body: ☐ Easy ☐ Moderately easy ☐ Moderately difficult ☐ Difficult

7. Please describe access opportunities or explain why the site is not easily accessible (Attach photos for documentation):

_____

_____

8. Dominant Primary Substrate

☐Cobble ☐Sand ☐Silt ☐Mud/Clay ☐Gravel ☐Bedrock ☐Rip rap ☐ Concrete

E JB 7/1 QC TB 7/1

Field Data Sheets – Basic RUAA Survey

Stream Name Nawasota River Site: 4
Date: _____ Time: _____

B. Primary Contact Water Recreation Evaluation:
- Primary contact recreation draft definition: Water recreation activities, such as wading by children, swimming, water skiing, diving, tubing, surfing, and whitewater kayaking, canoeing, and rafting, involving a significant risk of ingestion of water.

1. Were water recreation activities that involve a significant risk of ingestion (full body immersion) observed at this site?
☐ Yes ☐ No primary contact recreation activities were observed
a. Check the following boxes of primary contact recreation activities observed at the time of the sampling event at the site (Attach photos of the activities or lack of activities).

☐ Wading-Children ☐ Tubing ☐ No primary contact activities that commonly occur were observed
☐ Wading-Adults ☐ Surfing
☐ Swimming ☐ Whitewater-kayaking, canoeing, rafting
☐ Water skiing ☐ Other: _____
☐ Diving ☐ frequent public swimming-created by publicly owned land or commercial operations

b. Check the number of individuals observed at the site: ☐ None ☐ 1-10 ☐ 11-20 ☐ 20-50 ☐ greater than 50

c. Check the following that apply regarding the individuals proximity to the water body.
☐ Water in mouth or nose of the individual ☐ Primary touch: Individual's body (or portion) immersed in water
☐ Secondary touch: fishing, pets and related contact with water ☐ Individual is in a boat touching water
☐ Individual is on shore near water within 8 meters (25ft) of water ☐ Individual is well away from water between 8 and 30 meters (100 ft) ☐ Not applicable

2. If primary contact recreation activities are not observed, describe the physical characteristics of the water body that may hinder the frequency of primary contact (depth, etc.) (Attach photos, etc. for documentation).

_____

_____

3. Describe if there is public access (e.g. parks, roads, etc.) (Attach photos, maps, etc. for documentation).

_____

_____

4. Is an area with primary contact recreation activities or a bathing beach (e.g. state/local parks with swimming, etc.) located near (e.g. within 5 miles upstream and downstream) this site?

C. Secondary Contact Water Recreation Evaluation:
- Secondary contact recreation 1: Water recreation activities, such as fishing, commercial and recreational boating, and limited body contact incidental to shoreline activity, not involving a significant risk of water ingestion and that commonly occur.
- Secondary contact recreation 2: Water recreation activities, such as fishing, commercial and recreational boating, and limited body contact incidental to shoreline activity, not involving a significant risk of water ingestion but that occur less frequently than for secondary contact recreation 1 due to (1) physical characteristics of the water body and/or (2) limited public access.

1. Were water recreation activities observed at the site, but the nature of the recreation does not involve a significant risk of ingestion (e.g. secondary contact recreation activities)? ☐ Yes ☐ No secondary contact recreation activities were observed
a. Check the following boxes of secondary contact recreation activities that were observed at the time of the sampling event at the site (Attach photos of activities or lack of activities).

☐ Fishing
☐ Boating-commercial, recreational
☐ Non-whitewater-kayaking, rafting, canoeing
☐ No secondary contact recreation activities were observed
☐ Other secondary contact activities: _____

Field Data Sheets – Basic RUAA Survey

Stream Name Navasota River Site: 4
Date Time:

b. Check the number of individuals observed at the site.
☐ None ☐ 1-10 ☐ 11-20 ☐ 20-50 ☐ greater than 50

c. Check the following that apply regarding the individuals proximity to the water body.
☐ Secondary touch: fishing, pets and related contact with water ☐ In a boat touching water
☐ Body on shore near water within 8 meters (25ft) of water ☐ Body well away from water between 8 and 30 meters (100 ft)

2. If secondary contact recreation activities are not observed, describe the physical characteristics of the water body that may hinder the frequency of secondary contact (Attach photos, etc. for documentation).

3. If secondary contact recreation activities are observed, how often do water recreational activities occur that do not involve a significant risk of water ingestion? ☐ frequently ☐ infrequently
Please describe how often the activities occur? ☐ Unknown ☐ Never ☐ Daily ☐ Monthly ☐ Yearly

4. If infrequently, what is the reason? ☐ physical characteristics of the water body ☐ limited public access ☐ other
If other, list reasons:

5. Describe the physical characteristics of the water body that hinders the frequency of secondary contact recreation (depth, etc.) (Attach photos or depth measurements, etc. for documentation).

6. Describe why there is limited public access (e.g. lack of roads, river or stream banks overgrown, etc.) (Attach photos, maps, etc. for documentation).

D. Noncontact Recreation Evaluation

Noncontact recreation applies to water bodies where recreation activities do not involve a significant risk of water ingestion, and where primary and secondary contact recreation uses do not occur because of unsafe conditions, such as barge traffic.

1. Provide site-specific information and documentation (including photographs) regarding unsafe conditions, recreation activities, and presence or absence of water recreation activities.

Field Data Sheets – Basic RUAA Survey

Stream Name Navasota River Site: 4
Date: _____ FDS Page 3 of 8

E. Streām Channēl and Substantial Pool:
Please check the following which best describes the river or stream: Wadeable Non-wadeable

1. Wadeable Streams
Determine whether or not the average depth at the thalweg is greater than 0.5 meters and if there are substantial pools with a depth of 1 meter or greater. Walk an approximately 300 meter reach (total) at the site and take the following measurements within the 300 meter reach. Measurements should be taken during base flow conditions (sustained or typical dry, warm-weather flows between rainfall events, excluding unusual antecedent conditions of drought or wet weather

Also, take photos facing upstream, downstream, left bank, and right bank at the 30 meters, 150 meters, and 300 meters.
Photos #s (30 meters) Upstream____ Downstream____ Left Bank ____ Right Bank____
Photos #s (150 meters) Upstream____ Downstream____ Left Bank ____ Right Bank____
Photos #s (300 meters) Upstream____ Downstream____ Left Bank ____ Right Bank____

a) Substantial pools - Measure the length of each pool (if > 10 pools only measure 10 pools), the width (at the widest point), and the deepest depth. A substantial pool is considered a pool greater than 10 meters in length for the purposes of a Basic RUAA Survey. If depth and/or width measurements were not attainable, explain why.

	Length (meters)	Width (meters)	Depth (meters)
Pool 1			
Pool 2			
Pool 3			
Pool 4			
Pool 5			
Pool 6			
Pool 7			
Pool 8			
Pool 9			
Pool 10			

b)Average depth at the thalweg –Take depth measurements approximately every 30 meters to calculate an average depth at the thalweg (at least 10 measurements needed). If depth and/or width measurements were not attainable, explain why.

Distance	Depth (meters)
30 meters	
60 meters	
90 meters	
120 meters	
150 meters	
180 meters	
210 meters	
240 meters	
270 meters	
300 meters	
Average	

Field Data Sheets – Basic RUAA Survey

Stream Name Navasota River Site: 4
Date: _____ Time: _____

c) Stream width - Measure (1) the width at one point which represents the typical average width of the 300 meter reach; (2) the width at the narrowest point of the stream within the 300 meter reach; and (3) the width at the widest point of the stream within the 300 meter reach.

Measurement Type	Width (meters)
Typical Average Width of 300 meter reach	
Width at narrowest point of the stream within 300 meter reach	
Width at the widest point of the stream within 300 meter reach	

d) Is there sufficient water within a 300 meter stream reach during base flow conditions to support primary contact recreation? ☐ Yes ☐ No
COMMENTS:

_____

_____

2. Non-wadeable Streams
If accessible, take 10 width measurements which represent typical widths of the 300 meter reach. If the water is too deep and not accessible record the estimated average width of the water body.

Also, take photos facing upstream, downstream, left bank, and right bank at .
Photos #s (30 meters) Upstream____ Downstream____ Left Bank ____ Right Bank____
Photos #s (150 meters) Upstream____ Downstream____ Left Bank ____ Right Bank____
Photos #s (300 meters) Upstream____ Downstream____ Left Bank ____ Right Bank____

# Measurements	Width (meters)
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	

Field Data Sheets – Basic RUAA Survey

Stream Name Nawasota River Site: 4
Date: _____ Time: _____

F. Additional RUAA Information

1. Check the following activities observed over the site reach.

- ☐ Drinking or water in mouth
- ☐ Bathing
- ☐ Walking
- ☐ Jogging/running
- ☐ Bicycling
- ☐ Standing
- ☐ Sitting
- ☐ Lying down/sleeping
- ☐ Playing on shoreline
- ☐ Picnicking
- ☐ Motorcycle/ATV
- ☐ Hunting/Trapping
- ☐ Wildlife watching
- ☐ None
- ☐ Other: _____

2. Are there permanent or long-term hydrologic modifications that are constructed and operated in a way that affects the recreational uses? ☐ Yes ☐ No (If yes, please provide supporting documentation and photos.)

Comments: _____

3. Check any channel obstructions that apply (Attach photos).

- ☐ Culverts
- ☐ Barbed wire
- ☐ Utility pipe
- ☐ Fences
- ☐ Dams
- ☐ Other (specify): _____
- ☐ Log jams
- ☐ Thick vegetation
- ☐ Rip rap
- ☐ Low bridges
- ☐ Water control structure
- ☐ None

4. Check all surrounding conditions that promote recreational activities (Attach photos of evidence or unusual items of interest).

- ☐ Campgrounds
- ☐ Playgrounds
- ☐ Rural area
- ☐ Residential
- ☐ National forests
- ☐ Urban/suburban location
- ☐ Golf Course
- ☐ Sports Field
- ☐ Stairs/walkway
- ☐ Boating access (ramps)
- ☐ Beach
- ☐ Bridge crossing
- ☐ Commercial boating
- ☐ Trails/paths (hiking/biking)
- ☐ Paved parking lot
- ☐ Unimproved parking lot
- ☐ Roads (paved/unpaved)
- ☐ Populated area
- ☐ Docks or rafts
- ☐ Commercial outfitter
- ☐ Nearby school
- ☐ Power Line Corridor
- ☐ Parks (national/city/county/state)
- ☐ Public Property
- ☐ Other: _____
- ☐ None of the Above

Comments: _____

5. Check all surrounding conditions that impede recreational activities (Attach photos of evidence or unusual items of interest).

- ☐ Private Property
- ☐ No trespass sign
- ☐ Wildlife
- ☐ Steep slopes
- ☐ No public access
- ☐ No roads
- ☐ Fence
- ☐ Barge/ship traffic
- ☐ Industrial
- ☐ None of the Above
- ☐ Other: _____

Comments: _____

6. Check any indications of human use (Attach photos).

- ☐ Roads
- ☐ Rope swings
- ☐ Dock/platform
- ☐ Foot paths/prints
- ☐ Other: _____
- ☐ RV/ATV Tracks
- ☐ Camping Sites
- ☐ Fire pit/ring
- ☐ Fishing Tackle
- ☐ NPDES Discharge
- ☐ Gates on corridor
- ☐ Children's toys
- ☐ Remnant's of Kid's play
- ☐ Organized event
- ☐ No Human Presence

Comments: _____

Field Data Sheets – Basic RUAA Survey

Stream Name Navasota River (1209) Site: 4
Date: _____ Time: _____

7. Check all water characteristics that apply (Attach photos).
Aquatic Vegetation: absent rare common abundant
Algae Cover: absent rare common abundant
Odor: none rare common abundant
Color: clear green red brown black
Bottom Deposit: sludge solids fine sediments none other
Water Surface: clear scum foam debris oil
Other:

8. Vertebrates Observed within 300 meter reach

Snakes	None	slight presence	moderate presence	large presence
Water Dependent Birds	None	slight presence	moderate presence	large presence
Alligators	None	slight presence	moderate presence	large presence

Comments: _____

9. Mammals Observed within 300 meter reach

Wild	None	slight presence	moderate presence	large presence
Domesticated Pets	None	slight presence	moderate presence	large presence
Livestock	None	slight presence	moderate presence	large presence
Feral Hogs	None	slight presence	moderate presence	large presence

Comments: _____

10. Evidence of wild animals or evidence of birds, cattle, hogs, etc.
Tracks Fecal droppings Bird nests

11. Garbage Observed

Large garbage in the channel	None	Rare	Common	Abundant
Small garbage in the channel	None	Rare	Common	Abundant
Bank Garbage	None	Rare	Common	Abundant

Briefly describe the kinds of garbage observed: _____

12. Is the site located in a wildlife preserve with large wildlife (i.e waterfowl) population? Yes No

13. Please document any other relevant information regarding recreational activities and the water body in general (for example, area outside of the stream reach evaluated).

Field Data Sheet - Basic RUAA Survey

Stream Flow (Discharge) Measurement

Stream: Navasota River (1209) Date:

Site: #4 Site

Description: Soggy Bottom ATV Ranch

Time Begin: Time End: Meter Type: SonTek FlowTracker

Observers: Stream Width*: Section Width (W):

Observations:

Section Midpoint (ft) (m)	Section Depth (ft) (m) (cm) (D)	Observational Depth** (ft)(m)	Velocity (V)		Flow (Q) (m^3/s) (ft^3/s) Q = (W)(D)(V)
			At Point (ft/s)(m/s)	Average (ft/s)(m/s)	

5

Field Data Sheets – Basic RUAA Survey

(should be completed for each site)

Data Collectors & Contact Information: J. Wrast, M. Shepard, R. Thompson, L. Benavides	
Date & Time: 6/26/10 1350-1510	County Name: Grimes / Brazos
Stream Name: Navasota River below Lake Limestone	
Segment No. or nearest downstream Segment No.: 1209	
Description of Site: Democrat Rd @ Navasota	

At any point during the Basic RUAA Survey it becomes apparent that primary contact recreation is clearly the use for the water body the investigator should stop conducting the UAA.

A. Stream Characteristics:

1. Check the following channel flow status that applies.

☐ dry ☐ no flow ☐ low ☒ normal ☐ high ☐ flooded

2. Check the following stream type that applies on the day of the survey:

Ephemeral: A stream which flows only during or immediately after a rainfall event, and contains no refuge pools capable of sustaining a viable community of aquatic organisms.

☐ Intermittent: A stream which has a period of zero flow for at least one week during most years. Where flow records are available, a stream with a 7Q2 flow of less than 0.1 cubic feet per second is considered intermittent.

☐ Intermittent w/ perennial pools: An intermittent stream which maintains persistent pools even when flow in the stream is less than 0.1 cubic feet per second.

☒ Perennial: A stream which flows continuously throughout the year. Perennial streams have a 7Q2 equal to or greater than 0.1 cubic feet per second.

☐ Designated or unclassified tidal stream: A stream that is tidally influenced. If you checked this box, you will need to contact the Water Quality Standards Group and evaluate whether or not a bathing beach is located along the tidal stream and whether or not a bathing beach is located along the estuary, bay or Gulf water that the tidal stream flows into.

3. Streamflow

Use USGS gage data (if a gage is located at a site or within a quarter mile of a site) or use the Stream Flow (Discharge) Measurement Form and follow the procedures outlined in the most recent TCEQ Surface Water Quality Monitoring Procedures, Volume 1, RG-415. If USGS gage data is used for a site, include that information as an attachment and list the streamflow on the sampling date below. If the stream flow taken at one site is representative of the flow at another site(s), then that flow can be used as the observed flow and should be documented below. If the stream flow measured at one site is different from another site, then stream flow should be taken at both sites. 53.7 cfs

4. Water Quality Data (Field Parameters)

Field parameters should be collected in accordance with the procedures outlined in the most recent TCEQ Surface Water Quality Monitoring Procedures, Volume 1.

Air Temp 34 °C Water Temp 32 °C Secchi ~~0.356~~ 0.166 m

5. Riparian Zone (Mark dominant categories with L (Left Bank) and R (Right Bank). Bank orientation is determined by the investigator facing downstream.)

L/R Forest	___ Urban	___ Rip rap
___ Shrub dominated corridor	___ Pasture	___ Concrete
___ Herbaceous marsh	___ Row crops	Other (specify): ___
___ Mowed/maintained corridor	___ Denuded/Eroded bank	

6. Ease of bank access to the water body: ☐ Easy ☒ Moderately easy ☐ Moderately difficult ☐ Difficult

7. Please describe access opportunities or explain why the site is not easily accessible (Attach photos for documentation): Soft mud on bank, easy parking off of road.

8. Dominant Primary Substrate

☐ Cobble ☐ Sand ☐ Silt ☒ Mud/Clay ☐ Gravel ☐ Bedrock ☐ Rip rap ☐ Concrete

E TB 7/1 QC JB 7/1

Field Data Sheets – Basic RUAA Survey

Stream Name Navasota River below Lake Limestone Site: 5
Date: 6/24/10 Time: 1350-1510

B. Primary Contact Water Recreation Evaluation:
- Primary contact recreation draft definition: Water recreation activities, such as wading by children, swimming, water skiing, diving, tubing, surfing, and whitewater kayaking, canoeing, and rafting, involving a significant risk of ingestion of water.

1. Were water recreation activities that involve a significant risk of ingestion (full body immersion) observed at this site?
☐ Yes ☒ No primary contact recreation activities were observed
a. Check the following boxes of primary contact recreation activities observed at the time of the sampling event at the site (Attach photos of the activities or lack of activities).

☐ Wading-Children	☐ Tubing	☒ No primary contact activities that commonly occur were observed
☐ Wading-Adults	☐ Surfing	
☐ Swimming	☐ Whitewater-kayaking, canoeing, rafting	
☐ Water skiing	☐ Other: _____	
☐ Diving	☐ frequent public swimming-created by publicly owned land or commercial operations	

b. Check the number of individuals observed at the site: ☒ None ☐ 1-10 ☐ 11-20 ☐ 20-50 ☐ greater than 50

c. Check the following that apply regarding the individuals proximity to the water body.
☐ Water in mouth or nose of the individual ☐ Primary touch: Individual's body (or portion) immersed in water
☐ Secondary touch: fishing, pets and related contact with water ☐ Individual is in a boat touching water
☐ Individual is on shore near water within 8 meters (25ft) of water ☐ Individual is well away from water between 8 and 30 meters (100 ft) ☒ Not applicable

2. If primary contact recreation activities are not observed, describe the physical characteristics of the water body that may hinder the frequency of primary contact (depth, etc.) (Attach photos, etc. for documentation). turbid, debris in water

3. Describe if there is public access (e.g. parks, roads, etc.) (Attach photos, maps, etc. for documentation). large pull off/parking area.

4. Is an area with primary contact recreation activities or a bathing beach (e.g. state/local parks with swimming, etc.) located near (e.g. within 5 miles upstream and downstream) this site? NO

C. Secondary Contact Water Recreation Evaluation:
- Secondary contact recreation 1: Water recreation activities, such as fishing, commercial and recreational boating, and limited body contact incidental to shoreline activity, not involving a significant risk of water ingestion and that commonly occur.
- Secondary contact recreation 2: Water recreation activities, such as fishing, commercial and recreational boating, and limited body contact incidental to shoreline activity, not involving a significant risk of water ingestion but that occur less frequently than for secondary contact recreation 1 due to (1) physical characteristics of the water body and/or (2) limited public access.

1. Were water recreation activities observed at the site, but the nature of the recreation does not involve a significant risk of ingestion (e.g. secondary contact recreation activities)? ☐ Yes ☒ No secondary contact recreation activities were observed
a. Check the following boxes of secondary contact recreation activities that were observed at the time of the sampling event at the site (Attach photos of activities or lack of activities).
☐ Fishing
☐ Boating-commercial, recreational
☐ Non-whitewater-kayaking, rafting, canoeing
☒ No secondary contact recreation activities were observed
☐ Other secondary contact activities: _____

Field Data Sheets – Basic RUAA Survey

Stream Name Navasota River below Lake Limestone Site: 5
Date: 6/26/10 Time: 1350-1510

b. Check the number of individuals observed at the site.
X None ☐ 1-10 ☐ 11-20 ☐ 20-50 ☐ greater than 50

c. Check the following that apply regarding the individuals proximity to the water body.
☐ Secondary touch: fishing, pets and related contact with water ☐ In a boat touching water
☐ Body on shore near water within 8 meters (25ft) of water ☐ Body well away from water between 8 and 30 meters (100 ft) ☒ N/A

2. If secondary contact recreation activities are not observed, describe the physical characteristics of the water body that may hinder the frequency of secondary contact (Attach photos, etc. for documentation).

Same

3. If secondary contact recreation activities are observed, how often do water recreational activities occur that do not involve a significant risk of water ingestion? ☐ frequently ☐ infrequently
Please describe how often the activities occur? ☒ Unknown ☐ Never ☐ Daily ☐ Monthly ☐ Yearly N/A

4. If infrequently, what is the reason? ☐ physical characteristics of the water body ☐ limited public access ☐ other
If other, list reasons: N/A

5. Describe the physical characteristics of the water body that hinders the frequency of secondary contact recreation (depth, etc.) (Attach photos or depth measurements, etc. for documentation).

Same

6. Describe why there is limited public access (e.g. lack of roads, river or stream banks overgrown, etc.) (Attach photos, maps, etc. for documentation).

Same

D. Noncontact Recreation Evaluation

Noncontact recreation applies to water bodies where recreation activities do not involve a significant risk of water ingestion, and where primary and secondary contact recreation uses do not occur because of unsafe conditions, such as barge traffic.

1. Provide site-specific information and documentation (including photographs) regarding unsafe conditions, recreation activities, and presence or absence of water recreation activities.

Field Data Sheets – Basic RUAA Survey

Stream Name Navasota river below Lake Limestone Site: 5
Date: 6/26/10 FDS Page 3 of 8 Time: 1350 - 1510

E. Stream Channel and Substantial Pools
Please check the following which best describes the river or stream: ☑ ~~Wadeable~~ ☐ Non-wadeable

1. Wadeable Streams
Determine whether or not the average depth at the thalweg is greater than 0.5 meters and if there are substantial pools with a depth of 1 meter or greater. Walk an approximately 300 meter reach (total) at the site and take the following measurements within the 300 meter reach. Measurements should be taken during base flow conditions (sustained or typical dry, warm-weather flows between rainfall events, excluding unusual antecedent conditions of drought or wet weather

Also, take photos facing upstream, downstream, left bank, and right bank at the 30 meters, 150 meters, and 300 meters.
Photos #s (30 meters) Upstream ✓ Downstream ✓ Left Bank ✓ Right Bank ✓
Photos #s (150 meters) Upstream ✓ Downstream ✓ Left Bank ✓ Right Bank ✓
~~Photos #s (300 meters)~~ Upstream____ Downstream____ Left Bank ____ Right Bank____

a) Substantial pools - Measure the length of each pool (if > 10 pools only measure 10 pools), the width (at the widest point), and the deepest depth. A substantial pool is considered a pool greater than 10 meters in length for the purposes of a Basic RUAA Survey. If depth and/or width measurements were not attainable, explain why.

	Length (meters)	Width (meters)	Depth (meters)
Pool 1			
Pool 2			
Pool 3			
Pool 4			
Pool 5			
Pool 6			
Pool 7			
Pool 8			
Pool 9			
Pool 10			

b)Average depth at the thalweg –Take depth measurements approximately every 30 meters to calculate an average depth at the thalweg (at least 10 measurements needed). If depth and/or width measurements were not attainable, explain why.

Distance	Depth (meters)
30 meters	
60 meters	
90 meters	
120 meters	
150 meters	
180 meters	
210 meters	
240 meters	
270 meters	
300 meters	
Average	

Field Data Sheets – Basic RUAA Survey

Stream Name Navasota River below Lake Limestone Site: 5
Date: 6/26/10 Time: 1350-1510

c) Stream width - Measure (1) the width at one point which represents the typical average width of the 300 meter reach; (2) the width at the narrowest point of the stream within the 300 meter reach; and (3) the width at the widest point of the stream within the 300 meter reach.

Measurement Type	Width (meters)
Typical Average Width of 300 meter reach	
Width at narrowest point of the stream within 300 meter reach	17m
Width at the widest point of the stream within 300 meter reach	

d) Is there sufficient water within a 300 meter stream reach during base flow conditions to support primary contact recreation? ☒ Yes ☐ No
COMMENTS:

2. Non-wadeable Streams
If accessible, take 10 width measurements which represent typical widths of the 300 meter reach. If the water is too deep and not accessible record the estimated average width of the water body.

Also, take photos facing upstream, downstream, left bank, and right bank at .
Photos #s (30 meters) Upstream____ Downstream____ Left Bank ____ Right Bank____
Photos #s (150 meters) Upstream____ Downstream____ Left Bank ____ Right Bank____
Photos #s (300 meters) Upstream____ Downstream____ Left Bank ____ Right Bank____

# Measurements	Width (meters)
1	~~14m~~ 19m
2	19m
3	21m
4	21m
5	29m
6	27m
7	
8	
9	
10	

Navasota **Field Data Sheets – Basic RUAA Survey**

Stream Name River below Lake Limestone Site: 5

Date: 6/26/10 Time: 1350-1510

F. Additional RUAA Information

1. Check the following activities observed over the site reach.

- ☐ Drinking or water in mouth
- ☐ Bathing
- ☐ Walking
- ☐ Jogging/running
- ☐ Bicycling
- ☐ Standing
- ☐ Sitting
- ☐ Lying down/sleeping
- ☐ Playing on shoreline
- ☐ Picnicking
- ☐ Motorcycle/ATV
- ☐ Hunting/Trapping
- ☐ Wildlife watching
- ☒ None
- ☐ Other: _____

2. Are there permanent or long-term hydrologic modifications that are constructed and operated in a way that affects the recreational uses? ☐ Yes ☒ No (If yes, please provide supporting documentation and photos.)

Comments: _____

3. Check any channel obstructions that apply (Attach photos).

- ☐ Culverts
- ☐ Barbed wire
- ☐ Utility pipe
- ☐ Fences
- ☐ Dams
- ☒ Other (specify): Downed trees
- ☐ Log jams
- ☐ Thick vegetation
- ☐ Rip rap
- ☐ Low bridges
- ☐ Water control structure
- ☐ None

4. Check all surrounding conditions that promote recreational activities (Attach photos of evidence or unusual items of interest).

- ☐ Campgrounds
- ☐ Playgrounds
- ☒ Rural area
- ☐ Residential
- ☐ National forests
- ☐ Urban/suburban location
- ☐ Golf Course
- ☐ Sports Field
- ☐ Stairs/walkway
- ☒ Boating access (ramps)
- ☐ Beach
- ☒ Bridge crossing
- ☐ Commercial boating
- ☒ Trails/paths (hiking/biking)
- ☐ Paved parking lot
- ☐ Unimproved parking lot
- ☒ Roads (paved/unpaved)
- ☐ Populated area
- ☐ Docks or rafts
- ☐ Commercial outfitter
- ☐ Nearby school
- ☐ Power Line Corridor
- ☐ Parks (national/city/county/state)
- ☐ Public Property
- ☐ Other: _____
- ☐ None of the Above

Comments: _____

5. Check all surrounding conditions that impede recreational activities (Attach photos of evidence or unusual items of interest).

- ☐ Private Property
- ☐ No trespass sign
- ☐ Wildlife
- ☒ Steep slopes
- ☐ No public access
- ☐ No roads
- ☐ Fence
- ☐ Barge/ship traffic
- ☐ Industrial
- ☐ None of the Above
- ☐ Other: _____

Comments: _____

6. Check any indications of human use (Attach photos).

- ☒ Roads
- ☒ Rope swings
- ☐ Dock/platform
- ☒ Foot paths/prints
- ☐ Other: _____
- ☐ RV/ATV Tracks
- ☐ Camping Sites
- ☒ Fire pit/ring
- ☐ Fishing Tackle
- ☐ NPDES Discharge
- ☐ Gates on corridor
- ☐ Children's toys
- ☐ Remnant's of Kid's play
- ☐ Organized event
- ☐ No Human Presence

Comments: 3 large filleted catfish near fire pit.

Navasota **Field Data Sheets – Basic RUAA Survey**

Stream Name River below Lake Limestone Site: 5

Date: 6/24/10 Time: 1350-1510

7. Check all water characteristics that apply (Attach photos).

Aquatic Vegetation: X absent ☐ rare ☐ common ☐ abundant

Algae Cover: X absent ☐ rare ☐ common ☐ abundant

Odor: X none ☐ rare ☐ common ☐ abundant

Color: ☐ clear ☐ green ☐ red X brown ☐ black

Bottom Deposit: ☐ sludge ☐ solids ☐ fine sediments ☐ none X other SAND

Water Surface: X clear ☐ scum ☐ foam ☐ debris ☐ oil

Other:

8. Vertebrates Observed within 300 meter reach

Snakes X None ☐ slight presence ☐ moderate presence ☐ large presence

Water Dependent Birds X None ☐ slight presence ☐ moderate presence ☐ large presence

Alligators X None ☐ slight presence ☐ moderate presence ☐ large presence

Comments:

9. Mammals Observed within 300 meter reach

Wild X None ☐ slight presence ☐ moderate presence ☐ large presence

Domesticated Pets X None ☐ slight presence ☐ moderate presence ☐ large presence

Livestock X None ☐ slight presence ☐ moderate presence ☐ large presence

Feral Hogs X None ☐ slight presence ☐ moderate presence ☐ large presence

Comments:

10. Evidence of wild animals or evidence of birds, cattle, hogs, etc.

X Tracks ☐ Fecal droppings ☐ Bird nests Raccoon

11. Garbage Observed

Large garbage in the channel ☐ None X Rare ☐ Common ☐ Abundant tires

Small garbage in the channel X None ☐ Rare ☐ Common ☐ Abundant

Bank Garbage ☐ None ☐ Rare X Common ☐ Abundant

Briefly describe the kinds of garbage observed: beer bottles/cans, tires, wrappers. Shotgun shells, tube caulk

12. Is the site located in a wildlife preserve with large wildlife (i.e waterfowl) population? ☐ Yes X No

13. Please document any other relevant information regarding recreational activities and the water body in general (for example, area outside of the stream reach evaluated).

Field Data Sheet - Basic RUAA Survey

Stream Flow (Discharge) Measurement

Stream: Navasota river below lake Limestone Date: 6/26/10

Site: 5 Site

Description: Democrat Rd @ Navasota

Time Begin: 1400 Time End: 1500 Meter Type: Sontek Flowtracker

Observers: J. Wrast, M. Shepard Stream Width*: 52.5 Section Width (W): 2.63

Observations: debris in water / below surface / fish swimming

	Section Midpoint (ft) (m)	Section Depth (ft) (m) (cm) (D)	Observational Depth** (ft)(m)	Velocity (V) At Point (ft/s)(m/s)	Velocity (V) Average (ft/s)(m/s)	Flow (Q) (m^3/s) (ft^3/s) Q = (W)(D)(V)	
1	1.31	0.5			-0.11		← Eddy
2	3.94	0.95			0.19		
3	6.57	1.3			0.57		
4	9.20	2.1			0.54		
5	11.83	3.025	0.2% 0.8%	0.17 0.25	0.21		
6	14.46	3.6	0.2% 0.8%	~~0.2~~ 0.43 0.20	0.315		
7	17.09	3.4	.2 .8	0.76 0.11	0.435		
8	19.72	3.0	.2 .8	0.8 0.5	0.65		
9	22.35	2.4			0.7		
10	24.98	2.7	SM .2 .8	0.78 0.56	~~0.56~~ 0.67		
11	27.61	2.7	.2 .8	0.70 0.45	0.575		
12	30.24	2.2			0.49		
13	32.87	2.2			0.56		
14	35.5	2.5			0.53		
15	38.13	2.7	.2 .8	0.51 0.49	0.50		
16	40.76	2.2			0.52		
17	43.39	1.9			0.45		
18	46.02	1.75			0.32		
19	48.65	1.9			0.25		
20	51.28	1.2			~~0.08~~ 0.09		

total Q : 53.945 cfs

7

Field Data Sheets – Basic RUAA Survey

(should be completed for each site)

Data Collectors & Contact Information: M. Shepard, J. Wrast, R. Thompson, L. Benavides	
Date & Time: 6/25/10 1745 – 1828	County Name: Grimes / Brazos
Stream Name: Navasota river below lake Limestone	
Segment No. or nearest downstream Segment No.: 1209	
Description of Site: CR 162 @ Navasota	

At any point during the Basic RUAA Survey it becomes apparent that primary contact recreation is clearly the use for the water body the investigator should stop conducting the UAA.

A. Stream Characteristics:

1. Check the following channel flow status that applies.

☐ dry ☐ no flow ☒ low ☐ normal ☐ high ☐ flooded

2. Check the following stream type that applies on the day of the survey:

☐ Ephemeral: A stream which flows only during or immediately after a r
refuge pools capable of sustaining a viable community of aquatic organisms.

☐ Intermittent: A stream which has a period of zero flow for at least one w
flow records are available, a stream with a 7Q2 flow of less than 0.1 cubic feet per second is considered intermittent.

☐ Intermittent w/ perennial pools: An intermittent stream which maintains persistent pools even when flow in the stream is less than 0.1 cubic feet per second.

☒ Perennial: A stream which flows continuously throughout the year. Perennial streams have a 7Q2 equal to or greater than 0.1 cubic feet per second.

☐ Designated or unclassified tidal stream: A stream that is tidally influenced. If you checked this box, you will need to contact the Water Quality Standards Group and evaluate whether or not a bathing beach is located along the tidal stream and whether or not a bathing beach is located along the estuary, bay or Gulf water that the tidal stream flows into.

3. Streamflow

Use USGS gage data (if a gage is located at a site or within a quarter mile of a site) or use the Stream Flow (Discharge) Measurement Form and follow the procedures outlined in the most recent TCEQ Surface Water Quality Monitoring Procedures, Volume 1, RG-415. If USGS gage data is used for a site, include that information as an attachment and list the streamflow on the sampling date below. If the stream flow taken at one site is representative of the flow at another site(s), then that flow can be used as the observed flow and should be documented below. If the stream flow measured at one site is different from another site, then stream flow should be taken at both sites. 55.13 cfs

4. Water Quality Data (Field Parameters)

Field parameters should be collected in accordance with the procedures outlined in the most recent TCEQ Surface Water Quality Monitoring Procedures, Volume 1.

Air Temp 33 °C Water Temp 30 °C Secchi 0.102 m

5. Riparian Zone (Mark dominant categories with L (Left Bank) and R (Right Bank). Bank orientation is determined by the investigator facing downstream.)

R,L Forest	____ Urban	____ Rip rap
____ Shrub dominated corridor	____ Pasture	____ Concrete
____ Herbaceous marsh	____ Row crops	Other (specify): ____
____ Mowed/maintained corridor	____ Denuded/Eroded bank	

6. Ease of bank access to the water body: ☐ Easy ☐ Moderately easy ☒ Moderately difficult ☐ Difficult

7. Please describe access opportunities or explain why the site is not easily accessible (Attach photos for documentation): steep banks, thick vegetation, only access at bridge to water

8. Dominant Primary Substrate

☐ Cobble ☐ Sand ☐ Silt ☒ Mud/Clay ☐ Gravel ☐ Bedrock ☐ Rip rap ☐ Concrete

E TB 7/1 QC JB 7/1

Field Data Sheets – Basic RUAA Survey

Stream Name Navasota River below lake Limestone Site: 7
Date: 6/25/10 Time: 1745

B. Primary Contact Water Recreation Evaluation:
- Primary contact recreation draft definition: Water recreation activities, such as wading by children, swimming, water skiing, diving, tubing, surfing, and whitewater kayaking, canoeing, and rafting, involving a significant risk of ingestion of water.

1. Were water recreation activities that involve a significant risk of ingestion (full body immersion) observed at this site?
☐ Yes ☒ No primary contact recreation activities were observed

a. Check the following boxes of primary contact recreation activities observed at the time of the sampling event at the site (Attach photos of the activities or lack of activities).

☐ Wading-Children ☐ Tubing ☒ No primary contact activities that commonly occur were observed
☐ Wading-Adults ☐ Surfing
☐ Swimming ☐ Whitewater-kayaking, canoeing, rafting
☐ Water skiing ☐ Other: _____
☐ Diving ☐ frequent public swimming-created by publicly owned land or commercial operations

b. Check the number of individuals observed at the site: ☒ None ☐ 1-10 ☐ 11-20 ☐ 20-50 ☐ greater than 50

c. Check the following that apply regarding the individuals proximity to the water body.
☐ Water in mouth or nose of the individual ☐ Primary touch: Individual's body (or portion) immersed in water
☐ Secondary touch: fishing, pets and related contact with water ☐ Individual is in a boat touching water
☐ Individual is on shore near water within 8 meters (25ft) of water ☐ Individual is well away from water between 8 and 30 meters (100 ft) ☒ Not applicable

2. If primary contact recreation activities are not observed, describe the physical characteristics of the water body that may hinder the frequency of primary contact (depth, etc.) (Attach photos, etc. for documentation). steep banks, turbid water, lots of debris and downed trees in water

3. Describe if there is public access (e.g. parks, roads, etc.) (Attach photos, maps, etc. for documentation). Can park along road & access at bridge, fences & vegetation after ~5-30 m from bridge

4. Is an area with primary contact recreation activities or a bathing beach (e.g. state/local parks with swimming, etc.) located near (e.g. within 5 miles upstream and downstream) this site? No

C. Secondary Contact Water Recreation Evaluation:
- Secondary contact recreation 1: Water recreation activities, such as fishing, commercial and recreational boating, and limited body contact incidental to shoreline activity, not involving a significant risk of water ingestion and that commonly occur.
- Secondary contact recreation 2: Water recreation activities, such as fishing, commercial and recreational boating, and limited body contact incidental to shoreline activity, not involving a significant risk of water ingestion but that occur less frequently than for secondary contact recreation 1 due to (1) physical characteristics of the water body and/or (2) limited public access.

1. Were water recreation activities observed at the site, but the nature of the recreation does not involve a significant risk of ingestion (e.g. secondary contact recreation activities)? ☐ Yes ☐ No secondary contact recreation activities were observed

a. Check the following boxes of secondary contact recreation activities that were observed at the time of the sampling event at the site (Attach photos of activities or lack of activities).

☐ Fishing
☐ Boating-commercial, recreational
☐ Non-whitewater-kayaking, rafting, canoeing
☒ No secondary contact recreation activities were observed
☐ Other secondary contact activities: _____

Field Data Sheets – Basic RUAA Survey

Stream Name Navasota River below Lake Limestone Site: 7
Date: 6/25/10 Time: 1745

b. Check the number of individuals observed at the site.
X None ☐ 1-10 ☐ 11-20 ☐ 20-50 ☐ greater than 50

c. Check the following that apply regarding the individuals proximity to the water body.
☐ Secondary touch: fishing, pets and related contact with water ☐ In a boat touching water
☐ Body on shore near water within 8 meters (25ft) of water ☐ Body well away from water between 8 and 30 meters (100 ft) P/A

2. If secondary contact recreation activities are not observed, describe the physical characteristics of the water body that may hinder the frequency of secondary contact (Attach photos, etc. for documentation).

same as before

3. If secondary contact recreation activities are observed, how often do water recreational activities occur that do not involve a significant risk of water ingestion? ☐ frequently ☐ infrequently
Please describe how often the activities occur? ☐ Unknown ☐ Never ☐ Daily ☐ Monthly ☐ Yearly N/A

4. If infrequently, what is the reason? ☐ physical characteristics of the water body ☐ limited public access ☐ other
If other, list reasons: N/A

5. Describe the physical characteristics of the water body that hinders the frequency of secondary contact recreation (depth, etc.) (Attach photos or depth measurements, etc. for documentation).

same

6. Describe why there is limited public access (e.g. lack of roads, river or stream banks overgrown, etc.) (Attach photos, maps, etc. for documentation).

same

D. Noncontact Recreation Evaluation

Noncontact recreation applies to water bodies where recreation activities do not involve a significant risk of water ingestion, and where primary and secondary contact recreation uses do not occur because of unsafe conditions, such as barge traffic.

1. Provide site-specific information and documentation (including photographs) regarding unsafe conditions, recreation activities, and presence or absence of water recreation activities.

So much debris/trees in water that channel bottom seems very unsafe & uneven.

Field Data Sheets – Basic RUAA Survey

Stream Name Navasota river below lake Limestone Site: 7
Date: 6/25/10 ~~FDS Page 3 of 8.~~ Time: 1745

E. Stream Channel and Substantial Pools
Please check the following which best describes the river or stream: ☐ Wadeable ☒ Non-wadeable

1. Wadeable Streams N/A
Determine whether or not the average depth at the thalweg is greater than 0.5 meters and if there are substantial pools with a depth of 1 meter or greater. Walk an approximately 300 meter reach (total) at the site and take the following measurements within the 300 meter reach. Measurements should be taken during base flow conditions (sustained or typical dry, warm-weather flows between rainfall events, excluding unusual antecedent conditions of drought or wet weather

Also, take photos facing upstream, downstream, left bank, and right bank at the 30 meters, 150 meters, and 300 meters.
Photos #s (30 meters) Upstream____ Downstream____ Left Bank ____ Right Bank____
Photos #s (150 meters) Upstream____ Downstream____ Left Bank ____ Right Bank____
Photos #s (300 meters) Upstream____ Downstream____ Left Bank ____ Right Bank____

a) Substantial pools - Measure the length of each pool (if > 10 pools only measure 10 pools), the width (at the widest point), and the deepest depth. A substantial pool is considered a pool greater than 10 meters in length for the purposes of a Basic RUAA Survey. If depth and/or width measurements were not attainable, explain why.

	Length (meters)	Width (meters)	Depth (meters)
Pool 1			
Pool 2			
Pool 3			
Pool 4			
Pool 5			
Pool 6			
Pool 7			
Pool 8			
Pool 9			
Pool 10			

b)Average depth at the thalweg –Take depth measurements approximately every 30 meters to calculate an average depth at the thalweg (at least 10 measurements needed). If depth and/or width measurements were not attainable, explain why.

Distance	Depth (meters)
30 meters	
60 meters	
90 meters	
120 meters	
150 meters	
180 meters	
210 meters	
240 meters	
270 meters	
300 meters	
Average	

Field Data Sheets – Basic RUAA Survey

Stream Name Navasota River below Lake Limestone Site: 7
Date: 6/25/10 Time: 1745-

c) Stream width - Measure (1) the width at one point which represents the typical average width of the 300 meter reach; (2) the width at the narrowest point of the stream within the 300 meter reach; and (3) the width at the widest point of the stream within the 300 meter reach.

Measurement Type	Width (meters)
Typical Average Width of 300 meter reach	
Width at narrowest point of the stream within 300 meter reach	
Width at the widest point of the stream within 300 meter reach	

d) Is there sufficient water within a 300 meter stream reach during base flow conditions to support primary contact recreation? ☒ Yes ☐ No
COMMENTS:

2. Non-wadeable Streams
If accessible, take 10 width measurements which represent typical widths of the 300 meter reach. If the water is too deep and not accessible record the estimated average width of the water body.

Also, take photos facing upstream, downstream, left bank, and right bank at .
Photos #s ~~(30 meters)~~ Upstream___ ~~Downstream~~___ ~~Left Bank~~ ___ ~~Right Bank~~ ✓ – 30m up from bridge
Photos #s (~~150 meters)~~ Upstream ✓ ~~Downstream~~___ Left Bank ✓ Right Bank ✓ – 30m down from bridge
Photos #s (300 meters) Upstream____ Downstream____ Left Bank ____ Right Bank____

# Measurements	Width (meters)
1	19m
2	22m
3	21m
4	26m
5	
6	
7	
8	
9	
10	

* could not access full 300 m due to steep banks, thick vegetation, fences, & unwadeable channel

Navasota **Field Data Sheets – Basic RUAA Survey**

Stream Name River below lake Limestone Site: 7

Date: 6/25/10 Time: 1745-

F. Additional RUAA Information

1. Check the following activities observed over the site reach.

- ☐ Drinking or water in mouth
- ☐ Bathing
- ☐ Walking
- ☐ Jogging/running
- ☐ Bicycling
- ☐ Standing
- ☐ Sitting
- ☐ Lying down/sleeping
- ☐ Playing on shoreline
- ☐ Picnicking
- ☐ Motorcycle/ATV
- ☐ Hunting/Trapping
- ☐ Wildlife watching
- ☒ None
- ☐ Other: _____

2. Are there permanent or long-term hydrologic modifications that are constructed and operated in a way that affects the recreational uses? ☐ Yes ☒ No (If yes, please provide supporting documentation and photos.)

Comments: _____

3. Check any channel obstructions that apply (Attach photos).

- ☐ Culverts
- ☐ Barbed wire
- ☐ Utility pipe
- ☐ Fences
- ☐ Dams
- ☒ Other (specify): other fallen trees
- ☒ Log jams
- ~~☒ Thick vegetation~~
- ☐ Rip rap
- ☐ Low bridges
- Water control structure
- ☐ None

4. Check all surrounding conditions that promote recreational activities (Attach photos of evidence or unusual items of interest).

- ☐ Campgrounds
- ☐ Playgrounds
- ☒ Rural area
- ☐ Residential
- ☐ National forests
- ☐ Urban/suburban location
- ☐ Golf Course
- ☐ Sports Field
- ☐ Stairs/walkway
- ☐ Boating access (ramps)
- ☐ Beach
- ☒ Bridge crossing
- ☐ Commercial boating
- ☐ Trails/paths (hiking/biking)
- ☐ Paved parking lot
- ☐ Unimproved parking lot
- ☒ Roads (paved/unpaved)
- ☐ Populated area
- ☐ Docks or rafts
- ☐ Commercial outfitter
- ☐ Nearby school
- ☐ Power Line Corridor
- ☐ Parks (national/city/county/state)
- ☐ Public Property
- ☐ Other: _____
- ☐ None of the Above

Comments: _____

5. Check all surrounding conditions that impede recreational activities (Attach photos of evidence or unusual items of interest).

- ☒ Private Property
- ☐ No trespass sign
- ☐ Wildlife
- ☒ Steep slopes
- ☐ No public access
- ☐ No roads
- ☒ Fence
- ☐ Barge/ship traffic
- ☐ Industrial
- ☐ None of the Above
- ☐ Other: _____

Comments: _____

6. Check any indications of human use (Attach photos).

- ☒ Roads
- Rope swings
- Dock/platform
- ☒ Foot paths/prints
- ☒ Other: shotgun shell
- ☐ RV/ATV Tracks
- ☐ Camping Sites
- ☐ Fire pit/ring
- ☒ Fishing Tackle
- ☐ NPDES Discharge
- ☐ Gates on corridor
- ☐ Children's toys
- ☐ Remnant's of Kid's play
- ☐ Organized event
- ☐ No Human Presence

Comments: some fishing line on bridge, foot prints on L bank

Navasota **Field Data Sheets – Basic RUAA Survey**

Stream Name: River below lake Limestone Site: 7

Date: 6/25/10 Time: 1745

7. Check all water characteristics that apply (Attach photos).

Aquatic Vegetation: ☒ absent ☐ rare ☐ common ☐ abundant

Algae Cover: ☒ absent ☐ rare ☐ common ☐ abundant

Odor: ☒ none ☐ rare ☐ common ☐ abundant

Color: ☐ clear ☐ green ☐ red ☒ brown ☐ black

Bottom Deposit: ☐ sludge ☐ solids ☒ fine sediments ☐ none ☐ other

Water Surface: ☒ clear ☐ scum ☐ foam ☐ debris ☐ oil

Other:

8. Vertebrates Observed within 300 meter reach

Snakes	☒ None	☐ slight presence	☐ moderate presence	☐ large presence
Water Dependent Birds	☒ None	☐ slight presence	☐ moderate presence	☐ large presence
Alligators	☒ None	☐ slight presence	☐ moderate presence	☐ large presence

Comments:

9. Mammals Observed within 300 meter reach

Wild	☒ None	☐ slight presence	☐ moderate presence	☐ large presence
Domesticated Pets	☒ None	☐ slight presence	☐ moderate presence	☐ large presence
Livestock	☒ None	☐ slight presence	☐ moderate presence	☐ large presence
Feral Hogs	☒ None	☐ slight presence	☐ moderate presence	☐ large presence

Comments:

10. Evidence of wild animals or evidence of birds, cattle, hogs, etc.

☒ Tracks ☐ Fecal droppings ☐ Bird nests

11. Garbage Observed

Large garbage in the channel	☐ None	☒ Rare	☐ Common	☐ Abundant
Small garbage in the channel	☐ None	☒ Rare	☐ Common	☐ Abundant
Bank Garbage	☐ None	☒ Rare	☐ Common	☐ Abundant

Briefly describe the kinds of garbage observed: tire, beer/soda cans, large plastic container

12. Is the site located in a wildlife preserve with large wildlife (i.e waterfowl) population? ☐ Yes ☒ No

13. Please document any other relevant information regarding recreational activities and the water body in general (for example, area outside of the stream reach evaluated).

Field Data Sheet - Basic RUAA Survey

Stream Flow (Discharge) Measurement

Stream: Navasota River below Lake Limestone Date: 6/25/10

Site: Site

Description: CR 162 @ Navasota

Time Begin: Time End: Meter Type: Sontek Flowtracker

Observers: Stream Width*: Section Width (W):

Observations:

Section Midpoint (ft) (m)	Section Depth (ft) (m) (cm) (D)	Observational Depth** (ft)(m)	Velocity (V)		Flow (Q) (m^3/s) (ft^3/s) Q = (W)(D)(V)
			At Point (ft/s)(m/s)	Average (ft/s)(m/s)	

*Used Flow boat.

8

Field Data Sheets – Basic RUAA Survey

(should be completed for each site)

Data Collectors & Contact Information: M Shepard, J. Wrast, R. Thompson, L Benavides	
Date & Time: 6/25/10	County Name: Grimes / Brazos
Stream Name: Navasota River below Lake Limestone	
Segment No. or nearest downstream Segment No.: 1209	
Description of Site: Dudley Property North @ Navasota River	

At any point during the Basic RUAA Survey it becomes apparent that primary contact recreation is clearly the use for the water body the investigator should stop conducting the UAA.

No access to the site

A. Stream Characteristics:

1. Check the following channel flow status that applies.

☐ dry ☐ no flow ☐ low ☐ normal ☐ high ☐ flooded

2. Check the following stream type that applies on the day of the survey:

☐ Ephemeral: A stream which flows only during or immediately after a rainfall event, and contains no refuge pools capable of sustaining a viable community of aquatic organisms.

☐ Intermittent: A stream which has a period of zero flow for at least one week during most years. Where flow records are available, a stream with a 7Q2 flow of less than 0.1 cubic feet per second is considered intermittent.

☐ Intermittent w/ perennial pools: An intermittent stream which maintains persistent pools even when flow in the stream is less than 0.1 cubic feet per second.

☐ Perennial: A stream which flows continuously throughout the year. Perennial streams have a 7Q2 equal to or greater than 0.1 cubic feet per second.

☐ Designated or unclassified tidal stream: A stream that is tidally influenced. If you checked this box, you will need to contact the Water Quality Standards Group and evaluate whether or not a bathing beach is located along the tidal stream and whether or not a bathing beach is located along the estuary, bay or Gulf water that the tidal stream flows into.

3. Streamflow

Use USGS gage data (if a gage is located at a site or within a quarter mile of a site) or use the Stream Flow (Discharge) Measurement Form and follow the procedures outlined in the most recent TCEQ Surface Water Quality Monitoring Procedures, Volume 1, RG-415. If USGS gage data is used for a site, include that information as an attachment and list the streamflow on the sampling date below. If the stream flow taken at one site is representative of the flow at another site(s), then that flow can be used as the observed flow and should be documented below. If the stream flow measured at one site is different from another site, then stream flow should be taken at both sites. _____ cfs

4. Water Quality Data (Field Parameters)

Field parameters should be collected in accordance with the procedures outlined in the most recent TCEQ Surface Water Quality Monitoring Procedures, Volume 1.

Air Temp _____° C Water Temp _____° C

5. Riparian Zone (Mark dominant categories with L (Left Bank) and R (Right Bank). Bank orientation is determined by the investigator facing downstream.)

_____ Forest	_____ Urban	_____ Rip rap
_____ Shrub dominated corridor	_____ Pasture	_____ Concrete
_____ Herbaceous marsh	_____ Row crops	Other (specify): _____
_____ Mowed/maintained corridor	_____ Denuded/Eroded bank	

6. Ease of bank access to the water body: ☐ Easy ☐ Moderately easy ☐ Moderately difficult ☐ Difficult

7. Please describe access opportunities or explain why the site is not easily accessible (Attach photos for documentation):

_____

_____

8. Dominant Primary Substrate

☐Cobble ☐Sand ☐Silt ☐Mud/Clay ☐Gravel ☐Bedrock ☐Rip rap ☐ Concrete

E TB 7/1 QC JB 7/1

Field Data Sheets – Basic RUAA Survey

Stream Name Navasota Site: 8
Date: _____ Time: _____

B. Primary Contact Water Recreation Evaluation:
- Primary contact recreation draft definition: Water recreation activities, such as wading by children, swimming, water skiing, diving, tubing, surfing, and whitewater kayaking, canoeing, and rafting, involving a significant risk of ingestion of water.

1. Were water recreation activities that involve a significant risk of ingestion (full body immersion) observed at this site?
☐ Yes ☐ No primary contact recreation activities were observed

a. Check the following boxes of primary contact recreation activities observed at the time of the sampling event at the site (Attach photos of the activities or lack of activities).

☐ Wading-Children ☐ Tubing ☐ No primary contact activities that commonly occur were observed
☐ Wading-Adults ☐ Surfing
☐ Swimming ☐ Whitewater-kayaking, canoeing, rafting
☐ Water skiing ☐ Other: _____
☐ Diving ☐ frequent public swimming-created by publicly owned land or commercial operations

b. Check the number of individuals observed at the site: ☐ None ☐ 1-10 ☐ 11-20 ☐ 20-50 ☐ greater than 50

c. Check the following that apply regarding the individuals proximity to the water body.
☐ Water in mouth or nose of the individual ☐ Primary touch: Individual's body (or portion) immersed in water
☐ Secondary touch: fishing, pets and related contact with water ☐ Individual is in a boat touching water
☐ Individual is on shore near water within 8 meters (25ft) of water ☐ Individual is well away from water between 8 and 30 meters (100 ft) ☐ Not applicable

2. If primary contact recreation activities are not observed, describe the physical characteristics of the water body that may hinder the frequency of primary contact (depth, etc.) (Attach photos, etc. for documentation).

_____

_____

3. Describe if there is public access (e.g. parks, roads, etc.) (Attach photos, maps, etc. for documentation).

_____

_____

4. Is an area with primary contact recreation activities or a bathing beach (e.g. state/local parks with swimming, etc.) located near (e.g. within 5 miles upstream and downstream) this site?

C. Secondary Contact Water Recreation Evaluation:
- Secondary contact recreation 1: Water recreation activities, such as fishing, commercial and recreational boating, and limited body contact incidental to shoreline activity, not involving a significant risk of water ingestion and that commonly occur.
- Secondary contact recreation 2: Water recreation activities, such as fishing, commercial and recreational boating, and limited body contact incidental to shoreline activity, not involving a significant risk of water ingestion but that occur less frequently than for secondary contact recreation 1 due to (1) physical characteristics of the water body and/or (2) limited public access.

1. Were water recreation activities observed at the site, but the nature of the recreation does not involve a significant risk of ingestion (e.g. secondary contact recreation activities)? ☐ Yes ☐ No secondary contact recreation activities were observed

a. Check the following boxes of secondary contact recreation activities that were observed at the time of the sampling event at the site (Attach photos of activities or lack of activities).

☐ Fishing
☐ Boating-commercial, recreational
☐ Non-whitewater-kayaking, rafting, canoeing
☐ No secondary contact recreation activities were observed
Other secondary contact activities: _____

Field Data Sheets – Basic RUAA Survey

Stream Name Navasota Site: 8
Date: Time:

b. Check the number of individuals observed at the site.
☐ None ☐ 1-10 ☐ 11-20 ☐ 20-50 ☐ greater than 50

c. Check the following that apply regarding the individuals proximity to the water body.
☐ Secondary touch: fishing, pets and related contact with water ☐ In a boat touching water
☐ Body on shore near water within 8 meters (25ft) of water ☐ Body well away from water between 8 and 30 meters (100 ft)

2. If secondary contact recreation activities are not observed, describe the physical characteristics of the water body that may hinder the frequency of secondary contact (Attach photos, etc. for documentation).

3. If secondary contact recreation activities are observed, how often do water recreational activities occur that do not involve a significant risk of water ingestion? ☐ frequently ☐ infrequently
Please describe how often the activities occur? ☐ Unknown ☐ Never ☐ Daily ☐ Monthly ☐ Yearly

4. If infrequently, what is the reason? ☐ physical characteristics of the water body ☐ limited public access ☐ other
If other, list reasons:

5. Describe the physical characteristics of the water body that hinders the frequency of secondary contact recreation (depth, etc.) (Attach photos or depth measurements, etc. for documentation).

6. Describe why there is limited public access (e.g. lack of roads, river or stream banks overgrown, etc.) (Attach photos, maps, etc. for documentation).

D. Noncontact Recreation Evaluation
Noncontact recreation applies to water bodies where recreation activities do not involve a significant risk of water ingestion, and where primary and secondary contact recreation uses do not occur because of unsafe conditions, such as barge traffic.

1. Provide site-specific information and documentation (including photographs) regarding unsafe conditions, recreation activities, and presence or absence of water recreation activities.

Field Data Sheets – Basic RUAA Survey

Stream Name Navasota Site: 8
Date: _____ FDS Page 3 of 8 _____

E. Stream Channel and Substantial Pools
Please check the following which best describes the river or stream: ☐ Wadeable ☐ Non-wadeable

1. Wadeable Streams
Determine whether or not the average depth at the thalweg is greater than 0.5 meters and if there are substantial pools with a depth of 1 meter or greater. Walk an approximately 300 meter reach (total) at the site and take the following measurements within the 300 meter reach. Measurements should be taken during base flow conditions (sustained or typical dry, warm-weather flows between rainfall events, excluding unusual antecedent conditions of drought or wet weather

Also, take photos facing upstream, downstream, left bank, and right bank at the 30 meters, 150 meters, and 300 meters.
Photos #s (30 meters) Upstream____ Downstream____ Left Bank ____ Right Bank____
Photos #s (150 meters) Upstream____ Downstream____ Left Bank ____ Right Bank____
Photos #s (300 meters) Upstream____ Downstream____ Left Bank ____ Right Bank____

a) Substantial pools - Measure the length of each pool (if > 10 pools only measure 10 pools), the width (at the widest point), and the deepest depth. A substantial pool is considered a pool greater than 10 meters in length for the purposes of a Basic RUAA Survey. If depth and/or width measurements were not attainable, explain why.

	Length (meters)	Width (meters)	Depth (meters)
Pool 1			
Pool 2			
Pool 3			
Pool 4			
Pool 5			
Pool 6			
Pool 7			
Pool 8			
Pool 9			
Pool 10			

b)Average depth at the thalweg –Take depth measurements approximately every 30 meters to calculate an average depth at the thalweg (at least 10 measurements needed). If depth and/or width measurements were not attainable, explain why.

Distance	Depth (meters)
30 meters	
60 meters	
90 meters	
120 meters	
150 meters	
180 meters	
210 meters	
240 meters	
270 meters	
300 meters	
Average	

Field Data Sheets – Basic RUAA Survey

Stream Name Navasota Site: 8
Date: _____ Time: _____

c) Stream width - Measure (1) the width at one point which represents the typical average width of the 300 meter reach; (2) the width at the narrowest point of the stream within the 300 meter reach; and (3) the width at the widest point of the stream within the 300 meter reach.

Measurement Type	Width (meters)
Typical Average Width of 300 meter reach	
Width at narrowest point of the stream within 300 meter reach	
Width at the widest point of the stream within 300 meter reach	

d) Is there sufficient water within a 300 meter stream reach during base flow conditions to support primary contact recreation? ☐ Yes ☐ No
COMMENTS:

_____

_____

2. Non-wadeable Streams
If accessible, take 10 width measurements which represent typical widths of the 300 meter reach. If the water is too deep and not accessible record the estimated average width of the water body.

Also, take photos facing upstream, downstream, left bank, and right bank at .
Photos #s (30 meters) Upstream____ Downstream____ Left Bank ____ Right Bank____
Photos #s (150 meters) Upstream____ Downstream____ Left Bank ____ Right Bank____
Photos #s (300 meters) Upstream____ Downstream____ Left Bank ____ Right Bank____

# Measurements	Width (meters)
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	

Field Data Sheets – Basic RUAA Survey

Stream Name Navasota Site: 8
Date: _____ Time: _____

F. Additional RUAA Information

1. Check the following activities observed over the site reach.

- ☐ Drinking or water in mouth
- ☐ Bathing
- ☐ Walking
- ☐ Jogging/running
- ☐ Bicycling
- ☐ Standing
- ☐ Sitting
- ☐ Lying down/sleeping
- ☐ Playing on shoreline
- ☐ Picnicking
- ☐ Motorcycle/ATV
- ☐ Hunting/Trapping
- ☐ Wildlife watching
- ☐ None
- ☐ Other: _____

2. Are there permanent or long-term hydrologic modifications that are constructed and operated in a way that affects the recreational uses? ☐ Yes ☐ No (If yes, please provide supporting documentation and photos.)

Comments: _____

3. Check any channel obstructions that apply (Attach photos).

- ☐ Culverts
- ☐ Barbed wire
- ☐ Utility pipe
- ☐ Fences
- ☐ Dams
- ☐ Other (specify): _____
- ☐ Log jams
- ☐ Thick vegetation
- ☐ Rip rap
- ☐ Low bridges
- ☐ Water control structure
- ☐ None

4. Check all surrounding conditions that promote recreational activities (Attach photos of evidence or unusual items of interest).

- ☐ Campgrounds
- ☐ Playgrounds
- ☐ Rural area
- ☐ Residential
- ☐ National forests
- ☐ Urban/suburban location
- ☐ Golf Course
- ☐ Sports Field
- ☐ Stairs/walkway
- ☐ Boating access (ramps)
- ☐ Beach
- ☐ Bridge crossing
- ☐ Commercial boating
- ☐ Trails/paths (hiking/biking)
- ☐ Paved parking lot
- ☐ Unimproved parking lot
- ☐ Roads (paved/unpaved)
- ☐ Populated area
- ☐ Docks or rafts
- ☐ Commercial outfitter
- ☐ Nearby school
- ☐ Power Line Corridor
- ☐ Parks (national/city/county/state)
- ☐ Public Property
- ☐ Other: _____
- ☐ None of the Above

Comments: _____

5. Check all surrounding conditions that impede recreational activities (Attach photos of evidence or unusual items of interest).

- ☐ Private Property
- ☐ No trespass sign
- ☐ Wildlife
- ☐ Steep slopes
- ☐ No public access
- ☐ No roads
- ☐ Fence
- ☐ Barge/ship traffic
- ☐ Industrial
- ☐ None of the Above
- ☐ Other: _____

Comments: _____

6. Check any indications of human use (Attach photos).

- ☐ Roads
- ☐ Rope swings
- ☐ Dock/platform
- ☐ Foot paths/prints
- ☐ Other: _____
- ☐ RV/ATV Tracks
- ☐ Camping Sites
- ☐ Fire pit/ring
- ☐ Fishing Tackle
- ☐ NPDES Discharge
- ☐ Gates on corridor
- ☐ Children's toys
- ☐ Remnant's of Kid's play
- ☐ Organized event
- ☐ No Human Presence

Comments: _____

Field Data Sheets – Basic RUAA Survey

Stream Name Navasota Site: 8
Date: _____ Time: _____

7. Check all water characteristics that apply (Attach photos).
Aquatic Vegetation: absent rare common abundant
Algae Cover: absent rare common abundant
Odor: none rare common abundant
Color: clear green red brown black
Bottom Deposit: sludge solids fine sediments none other
Water Surface: clear scum foam debris oil
Other:

_____

_____

8. Vertebrates Observed within 300 meter reach

Snakes	None	slight presence	moderate presence	large presence
Water Dependent Birds	None	slight presence	moderate presence	large presence
Alligators	None	slight presence	moderate presence	large presence

Comments: _____

9. Mammals Observed within 300 meter reach

Wild	None	slight presence	moderate presence	large presence
Domesticated Pets	None	slight presence	moderate presence	large presence
Livestock	None	slight presence	moderate presence	large presence
Feral Hogs	None	slight presence	moderate presence	large presence

Comments: _____

10. Evidence of wild animals or evidence of birds, cattle, hogs, etc.
Tracks Fecal droppings Bird nests

11. Garbage Observed

Large garbage in the channel	None	Rare	Common	Abundant
Small garbage in the channel	None	Rare	Common	Abundant
Bank Garbage	None	Rare	Common	Abundant

Briefly describe the kinds of garbage observed: _____

_____

_____

12. Is the site located in a wildlife preserve with large wildlife (i.e waterfowl) population? Yes No

13. Please document any other relevant information regarding recreational activities and the water body in general (for example, area outside of the stream reach evaluated).

_____

_____

_____

_____

_____

Field Data Sheet - Basic RUAA Survey

Stream Flow (Discharge) Measurement

Stream: Nava Sota River (1209) Date:

Site: #8 Site

Description: Dudley North

Time Begin: Time End: Meter Type: SonTek Flowtracker

Observers: Stream Width*: Section Width (W):

Observations:

Section Midpoint (ft) (m)	Section Depth (ft) (m) (cm) (D)	Observational Depth** (ft)(m)	Velocity (V)		Flow (Q) (m^3/s) (ft^3/s) Q = (W)(D)(V)
			At Point (ft/s)(m/s)	Average (ft/s)(m/s)	

Field Data Sheets – Basic RUAA Survey

(should be completed for each site)

Data Collectors & Contact Information:	H. Stugard, J. Wrast, R. Thompson, L. Benavides
Date & Time: 6/25/10 1453-1710	County Name: Grimes / Brazo
Stream Name: Navasota River below Lake Limestone	
Segment No. or nearest downstream Segment No.: 1209	
Description of Site: Roese Rd @ Navasota	

At any point during the Basic RUAA Survey it becomes apparent that primary contact recreation is clearly the use for the water body the investigator should stop conducting the UAA.

A. Stream Characteristics:

1. Check the following channel flow status that applies.

☐ dry ☐ no flow ☐ low ☒ normal ☐ high ☐ flooded

2. Check the following stream type that applies on the day of the survey:

☐ Ephemeral: A stream which flows only during or immediately after a rainfall event, and contains no refuge pools capable of sustaining a viable community of aquatic organisms.

☐ Intermittent: A stream which has a period of zero flow for at least one week during most years. Where flow records are available, a stream with a 7Q2 flow of less than 0.1 cubic feet per second is considered intermittent.

☐ Intermittent w/ perennial pools: An intermittent stream which maintains persistent pools even when flow in the stream is less than 0.1 cubic feet per second.

☒ Perennial: A stream which flows continuously throughout the year. Perennial streams have a 7Q2 equal to or greater than 0.1 cubic feet per second.

☐ Designated or unclassified tidal stream: A stream that is tidally influenced. If you checked this box, you will need to contact the Water Quality Standards Group and evaluate whether or not a bathing beach is located along the tidal stream and whether or not a bathing beach is located along the estuary, bay or Gulf water that the tidal stream flows into.

3. Streamflow

Use USGS gage data (if a gage is located at a site or within a quarter mile of a site) or use the Stream Flow (Discharge) Measurement Form and follow the procedures outlined in the most recent TCEQ Surface Water Quality Monitoring Procedures, Volume 1, RG-415. If USGS gage data is used for a site, include that information as an attachment and list the streamflow on the sampling date below. If the stream flow taken at one site is representative of the flow at another site(s), then that flow can be used as the observed flow and should be documented below. If the stream flow measured at one site is different from another site, then stream flow should be taken at both sites. _____ cfs

4. Water Quality Data (Field Parameters)

Field parameters should be collected in accordance with the procedures outlined in the most recent TCEQ Surface Water Quality Monitoring Procedures, Volume 1.

Air Temp 31.5 °C Water Temp 31 °C Secchi 0.14 m

5. Riparian Zone (Mark dominant categories with L (Left Bank) and R (Right Bank). Bank orientation is determined by the investigator facing downstream.)

R L Forest	_____ Urban	_____ Rip rap
_____ Shrub dominated corridor	_____ Pasture	_____ Concrete
_____ Herbaceous marsh	_____ Row crops	Other (specify): _____
_____ Mowed/maintained corridor	_____ Denuded/Eroded bank	

6. Ease of bank access to the water body: ☐ Easy ☒ Moderately easy ☐ Moderately difficult ☐ Difficult

7. Please describe access opportunities or explain why the site is not easily accessible (Attach photos for documentation): dead end Rd to water, gravel drive, cross a low water bridge. plenty of parking and access to the water.

8. Dominant Primary Substrate

☐ Cobble ☐ Sand ☐ Silt ☒ Mud/Clay ☐ Gravel ☐ Bedrock ☐ Rip rap ☐ Concrete

E TB 7/1 QC SB 7/1

Field Data Sheets – Basic RUAA Survey

Stream Name Navasota River below Lake Limestone Site: 9
Date: 6/25/10 Time: _____

B. Primary Contact Water Recreation Evaluation:
- Primary contact recreation draft definition: Water recreation activities, such as wading by children, swimming, water skiing, diving, tubing, surfing, and whitewater kayaking, canoeing, and rafting, involving a significant risk of ingestion of water.

1. Were water recreation activities that involve a significant risk of ingestion (full body immersion) observed at this site?
☐ Yes ☑ No primary contact recreation activities were observed
a. Check the following boxes of primary contact recreation activities observed at the time of the sampling event at the site (Attach photos of the activities or lack of activities).

☐ Wading-Children ☐ Tubing ☑ No primary contact activities that commonly occur were observed
☐ Wading-Adults ☐ Surfing
☐ Swimming ☐ Whitewater-kayaking, canoeing, rafting
☐ Water skiing ☐ Other: _____
☐ Diving ☐ frequent public swimming-created by publicly owned land or commercial operations

b. Check the number of individuals observed at the site: ☐ None ☑ 1-10 ☐ 11-20 ☐ 20-50 ☐ greater than 50

c. Check the following that apply regarding the individuals proximity to the water body.
☐ Water in mouth or nose of the individual ☐ Primary touch: Individual's body (or portion) immersed in water
☑ Secondary touch: fishing, pets and related contact with water ☐ Individual is in a boat touching water
☐ Individual is on shore near water within 8 meters (25ft) of water ☐ Individual is well away from water between 8 and 30 meters (100 ft) ☐ Not applicable

2. If primary contact recreation activities are not observed, describe the physical characteristics of the water body that may hinder the frequency of primary contact (depth, etc.) (Attach photos, etc. for documentation). turbid water, fast flowing, debris (logs) in water upstream

3. Describe if there is public access (e.g. parks, roads, etc.) (Attach photos, maps, etc. for documentation). gravel road w/ parking area to site. good public access

4. Is an area with primary contact recreation activities or a bathing beach (e.g. state/local parks with swimming, etc.) located near (e.g. within 5 miles upstream and downstream) this site?

C. Secondary Contact Water Recreation Evaluation:
- Secondary contact recreation 1: Water recreation activities, such as fishing, commercial and recreational boating, and limited body contact incidental to shoreline activity, not involving a significant risk of water ingestion and that commonly occur.
- Secondary contact recreation 2: Water recreation activities, such as fishing, commercial and recreational boating, and limited body contact incidental to shoreline activity, not involving a significant risk of water ingestion but that occur less frequently than for secondary contact recreation 1 due to (1) physical characteristics of the water body and/or (2) limited public access.

1. Were water recreation activities observed at the site, but the nature of the recreation does not involve a significant risk of ingestion (e.g. secondary contact recreation activities)? ☐ Yes ☐ No secondary contact recreation activities were observed
a. Check the following boxes of secondary contact recreation activities that were observed at the time of the sampling event at the site (Attach photos of activities or lack of activities).
☒ Fishing
☐ Boating-commercial, recreational
☐ Non-whitewater-kayaking, rafting, canoeing
☐ No secondary contact recreation activities were observed
☐ Other secondary contact activities: _____

Field Data Sheets – Basic RUAA Survey

Stream Name Navasota River below Lake Limestone Site: - 9
Date: 6/25/10 Time:

b. Check the number of individuals observed at the site.
☐ None ☒ 1-10 ☐ 11-20 ☐ 20-50 ☐ greater than 50 (5)

c. Check the following that apply regarding the individuals proximity to the water body.
☒ Secondary touch: fishing, pets and related contact with water ☐ In a boat touching water
☒ Body on shore near water within 8 meters (25ft) of water ☐ Body well away from water between 8 and 30 meters (100 ft)

2. If secondary contact recreation activities are not observed, describe the physical characteristics of the water body that may hinder the frequency of secondary contact (Attach photos, etc. for documentation).

Same

3. If secondary contact recreation activities are observed, how often do water recreational activities occur that do not involve a significant risk of water ingestion? ☒ frequently ☐ infrequently
Please describe how often the activities occur? ☐ Unknown ☐ Never ☐ Daily ☐ Monthly ☐ Yearly ☒ Weekly

4. If infrequently, what is the reason? ☐ physical characteristics of the water body ☐ limited public access ☐ other
If other, list reasons:

5. Describe the physical characteristics of the water body that hinders the frequency of secondary contact recreation (depth, etc.) (Attach photos or depth measurements, etc. for documentation).

Same

6. Describe why there is limited public access (e.g. lack of roads, river or stream banks overgrown, etc.) (Attach photos, maps, etc. for documentation).

Same

D. Noncontact Recreation Evaluation

Noncontact recreation applies to water bodies where recreation activities do not involve a significant risk of water ingestion, and where primary and secondary contact recreation uses do not occur because of unsafe conditions, such as barge traffic.

1. Provide site-specific information and documentation (including photographs) regarding unsafe conditions, recreation activities, and presence or absence of water recreation activities.

Field Data Sheets – Basic RUAA Survey

Stream Name Navasota river below lake Limestone Site: – 9
Date: _____ FDS Page 3 of 8 Time: _____

E. Stream Channel and Substantial Pools
Please check the following which best describes the river or stream: ☐ Wadeable ☑ Non-wadeable

1. Wadeable Streams
Determine whether or not the average depth at the thalweg is greater than 0.5 meters and if there are substantial pools with a depth of 1 meter or greater. Walk an approximately 300 meter reach (total) at the site and take the following measurements within the 300 meter reach. Measurements should be taken during base flow conditions (sustained or typical dry, warm-weather flows between rainfall events, excluding unusual antecedent conditions of drought or wet weather

Also, take photos facing upstream, downstream, left bank, and right bank at the 30 meters, 150 meters, and 300 meters.
Photos #s (30 meters) Upstream____ Downstream____ Left Bank ____ Right Bank____
Photos #s (150 meters) Upstream____ Downstream____ Left Bank ____ Right Bank____
Photos #s (300 meters) Upstream____ Downstream____ Left Bank ____ Right Bank____

a) Substantial pools - Measure the length of each pool (if > 10 pools only measure 10 pools), the width (at the widest point), and the deepest depth. A substantial pool is considered a pool greater than 10 meters in length for the purposes of a Basic RUAA Survey. If depth and/or width measurements were not attainable, explain why.

	Length (meters)	Width (meters)	Depth (meters)
Pool 1			
Pool 2			
Pool 3			
Pool 4			
Pool 5			
Pool 6			
Pool 7			
Pool 8			
Pool 9			
Pool 10			

b)Average depth at the thalweg –Take depth measurements approximately every 30 meters to calculate an average depth at the thalweg (at least 10 measurements needed). If depth and/or width measurements were not attainable, explain why.

Distance	Depth (meters)
30 meters	
60 meters	
90 meters	
120 meters	
150 meters	
180 meters	
210 meters	
240 meters	
270 meters	
300 meters	
Average	

Field Data Sheets – Basic RUAA Survey

Stream Name Navasota River below Lake Limestone Site: 9
Date: _____ Time: _____

c) Stream width - Measure (1) the width at one point which represents the typical average width of the 300 meter reach; (2) the width at the narrowest point of the stream within the 300 meter reach; and (3) the width at the widest point of the stream within the 300 meter reach.

Measurement Type	Width (meters)
Typical Average Width of 300 meter reach	
Width at narrowest point of the stream within 300 meter reach	
Width at the widest point of the stream within 300 meter reach	

d) Is there sufficient water within a 300 meter stream reach during base flow conditions to support primary contact recreation? ☐ Yes ☐ No
COMMENTS:

2. Non-wadeable Streams
If accessible, take 10 width measurements which represent typical widths of the 300 meter reach. If the water is too deep and not accessible record the estimated average width of the water body.

Also, take photos facing upstream, downstream, left bank, and right bank at .
Photos #s (30 meters) Upstream____ Downstream____ Left Bank ____ Right Bank____
Photos #s (150 meters) Upstream____ Downstream____ Left Bank ____ Right Bank____
Photos #s (300 meters) Upstream____ Downstream____ Left Bank ____ Right Bank____

# Measurements	Width (meters)
1	14m
2	19m
3	23m
4	
5	
6	
7	
8	
9	
10	

Ash -

Navasota **Field Data Sheets – Basic RUAA Survey**

Stream Name River below lake Limestone Site: 9

Date: 6/25/10 Time: _____

F. Additional RUAA Information

1. Check the following activities observed over the site reach.

- ☐ Drinking or water in mouth
- ☐ Bathing
- ☐ Walking
- ☐ Jogging/running
- ☐ Bicycling
- ☒ Standing
- ☒ Sitting
- ☐ Lying down/sleeping
- ☐ Playing on shoreline
- ☐ Picnicking
- ☐ Motorcycle/ATV
- ☐ Hunting/Trapping
- ☐ Wildlife watching
- ☐ None
- ☐ Other: _____

2. Are there permanent or long-term hydrologic modifications that are constructed and operated in a way that affects the recreational uses? ☒ Yes ☐ No (If yes, please provide supporting documentation and photos.)

Comments: _____

3. Check any channel obstructions that apply (Attach photos).

- ☐ Culverts
- ☐ Fences
- ☐ Log jams
- ☐ Rip rap
- ☒ Water control structure
- ☐ Barbed wire
- ☐ Dams
- ☐ Thick vegetation
- ☐ Low bridges
- ☐ None
- ☐ Utility pipe
- ☐ Other (specify): _____

4. Check all surrounding conditions that promote recreational activities (Attach photos of evidence or unusual items of interest).

- ☐ Campgrounds
- ☐ Playgrounds
- ☒ Rural area
- ☐ Residential
- ☐ National forests
- ☐ Urban/suburban location
- ☐ Golf Course
- ☐ Sports Field
- ☐ Stairs/walkway
- ☐ Boating access (ramps)
- ☐ Beach
- ☐ Bridge crossing
- ☐ Commercial boating
- ☒ Trails/paths (hiking/biking)
- ☐ Paved parking lot
- ☒ Unimproved parking lot
- ☒ Roads (paved/unpaved)
- ☐ Populated area
- ☐ Docks or rafts
- ☐ Commercial outfitter
- ☐ Nearby school
- ☐ Power Line Corridor
- ☐ Parks (national/city/county/state)
- ☐ Public Property
- ☐ Other: _____
- ☐ None of the Above

Comments: _____

5. Check all surrounding conditions that impede recreational activities (Attach photos of evidence or unusual items of interest).

- ☐ Private Property
- ☐ No trespass sign
- ☐ Wildlife
- ☐ Steep slopes
- ☐ No public access
- ☐ No roads
- ☐ Fence
- ☐ Barge/ship traffic
- ☐ Industrial
- ☒ None of the Above
- ☐ Other: _____

Comments: _____

6. Check any indications of human use (Attach photos).

- ☒ Roads
- ☐ Rope swings
- ☐ Dock/platform
- ☒ Foot paths/prints
- ☐ Other: _____
- ☐ RV/ATV Tracks
- ☐ Camping Sites
- ☒ Fire pit/ring
- ☐ Fishing Tackle
- ☐ NPDES Discharge
- ☐ Gates on corridor
- ☐ Children's toys
- ☐ Remnant's of Kid's play
- ☐ Organized event
- ☐ No Human Presence

Comments: _____

Navasota **Field Data Sheets – Basic RUAA Survey**

Stream Name River below lake Limestone Site: ___ _____

Date: _____ Time: _____

7. Check all water characteristics that apply (Attach photos).

Aquatic Vegetation: X absent ☐ rare ☐ common ☐ abundant

Algae Cover: X absent ☐ rare ☐ common ☐ abundant

Odor: X none ☐ rare ☐ common ☐ abundant

Color: ☐ clear ☐ green ☐ red X brown ☐ black

Bottom Deposit: X sludge ☐ solids ☐ fine sediments ☐ none ☐ other

Water Surface: X clear ☐ scum ☐ foam ☐ debris ☐ oil

Other:

8. Vertebrates Observed within 300 meter reach

Snakes	X None	☐ slight presence	☐ moderate presence	☐ large presence
Water Dependent Birds	X None	☐ slight presence	☐ moderate presence	☐ large presence
Alligators	X None	☐ slight presence	☐ moderate presence	☐ large presence

Comments: _____

9. Mammals Observed within 300 meter reach

Wild	X None	☐ slight presence	☐ moderate presence	☐ large presence
Domesticated Pets	X None	☐ slight presence	☐ moderate presence	☐ large presence
Livestock	X None	☐ slight presence	☐ moderate presence	☐ large presence
Feral Hogs	X None	☐ slight presence	☐ moderate presence	☐ large presence

Comments: _____

10. Evidence of wild animals or evidence of birds, cattle, hogs, etc.

☐ Tracks ☐ Fecal droppings ☐ Bird nests None

11. Garbage Observed

Large garbage in the channel	X None	☐ Rare	☐ Common	☐ Abundant
Small garbage in the channel	X None	☐ Rare	☐ Common	☐ Abundant
Bank Garbage	☐ None	☐ Rare	X Common	☐ Abundant

Briefly describe the kinds of garbage observed: cigarette pack, beer bottles / cans, news paper, A.C. ducts, blue twine

12. Is the site located in a wildlife preserve with large wildlife (i.e waterfowl) population? ☐ Yes X No

13. Please document any other relevant information regarding recreational activities and the water body in general (for example, area outside of the stream reach evaluated).

Field Data Sheet - Basic RUAA Survey

Stream Flow (Discharge) Measurement

Stream: Navasota river below lake Limestone Date: 6/25/10

Site: 9 Site

Description: Roese Rd @ Navasota

Time Begin: _____ Time End: _____ Meter Type: Sontek Flowtracker

Observers: _____ Stream Width*: _____ Section Width (W): _____

Observations: _____

Section Midpoint (ft) (m)	Section Depth (ft) (m) (cm) (D)	Observational Depth** (ft)(m)	Velocity (V)		Flow (Q) (m^3/s) (ft^3/s) Q = (W)(D)(V)
			At Point (ft/s)(m/s)	Average (ft/s)(m/s)	

No Flow Taken.

Fast flowing over water control structure.

10

Field Data Sheets – Basic RUAA Survey

(should be completed for each site)

Data Collectors & Contact Information: M. Shepard, J. Wrast, R. Thompson L. Benavides.	
Date & Time: 6/25/10	County Name: Grimes / Brazos
Stream Name: Navasota River below Lake Limestone	
Segment No. or nearest downstream Segment No.: 1209	
Description of Site: Dudley Property South @ Navasota River	

At any point during the Basic RUAA Survey it becomes apparent that primary contact recreation is clearly the use for the water body the investigator should stop conducting the UAA.

No access to the site

A. Stream Characteristics:

1. Check the following channel flow status that applies.

☐ dry ☐ no flow ☐ low ☐ normal ☐ high ☐ flooded

2. Check the following stream type that applies on the day of the survey:

☐ Ephemeral: A stream which flows only during or immediately after a rainfall event, and contains no refuge pools capable of sustaining a viable community of aquatic organisms.

☐ Intermittent: A stream which has a period of zero flow for at least one week during most years. Where flow records are available, a stream with a 7Q2 flow of less than 0.1 cubic feet per second is considered intermittent.

☐ Intermittent w/ perennial pools: An intermittent stream which maintains persistent pools even when flow in the stream is less than 0.1 cubic feet per second.

☐ Perennial: A stream which flows continuously throughout the year. Perennial streams have a 7Q2 equal to or greater than 0.1 cubic feet per second.

☐ Designated or unclassified tidal stream: A stream that is tidally influenced. If you checked this box, you will need to contact the Water Quality Standards Group and evaluate whether or not a bathing beach is located along the tidal stream and whether or not a bathing beach is located along the estuary, bay or Gulf water that the tidal stream flows into.

3. Streamflow

Use USGS gage data (if a gage is located at a site or within a quarter mile of a site) or use the Stream Flow (Discharge) Measurement Form and follow the procedures outlined in the most recent TCEQ Surface Water Quality Monitoring Procedures, Volume 1, RG-415. If USGS gage data is used for a site, include that information as an attachment and list the streamflow on the sampling date below. If the stream flow taken at one site is representative of the flow at another site(s), then that flow can be used as the observed flow and should be documented below. If the stream flow measured at one site is different from another site, then stream flow should be taken at both sites. _____ cfs

4. Water Quality Data (Field Parameters)

Field parameters should be collected in accordance with the procedures outlined in the most recent TCEQ Surface Water Quality Monitoring Procedures, Volume 1.

Air Temp _____ ° C Water Temp _____ ° C

5. Riparian Zone (Mark dominant categories with L (Left Bank) and R (Right Bank). Bank orientation is determined by the investigator facing downstream.)

_____ Forest	_____ Urban	_____ Rip rap
_____ Shrub dominated corridor	_____ Pasture	_____ Concrete
_____ Herbaceous marsh	_____ Row crops	Other (specify): _____
_____ Mowed/maintained corridor	_____ Denuded/Eroded bank	

6. Ease of bank access to the water body: ☐ Easy ☐ Moderately easy ☐ Moderately difficult ☐ Difficult

7. Please describe access opportunities or explain why the site is not easily accessible (Attach photos for documentation):

_____

_____

8. Dominant Primary Substrate

☐ Cobble ☐ Sand ☐ Silt ☐ Mud/Clay ☐ Gravel ☐ Bedrock ☐ Rip rap ☐ Concrete

E TB 7/1 QC JB 7/1

Field Data Sheets – Basic RUAA Survey

Stream Name Navasota Site: 10
Date: _____ Time: _____

B. Primary Contact Water Recreation Evaluation:
- Primary contact recreation draft definition: Water recreation activities, such as wading by children, swimming, water skiing, diving, tubing, surfing, and whitewater kayaking, canoeing, and rafting, involving a significant risk of ingestion of water.

1. Were water recreation activities that involve a significant risk of ingestion (full body immersion) observed at this site?
☐ Yes ☐ No primary contact recreation activities were observed

a. Check the following boxes of primary contact recreation activities observed at the time of the sampling event at the site (Attach photos of the activities or lack of activities).

☐ Wading-Children ☐ Tubing ☐ No primary contact activities that commonly occur were observed
☐ Wading-Adults ☐ Surfing
☐ Swimming ☐ Whitewater-kayaking, canoeing, rafting
☐ Water skiing ☐ Other: _____
☐ Diving ☐ frequent public swimming-created by publicly owned land or commercial operations

b. Check the number of individuals observed at the site: ☐ None ☐ 1-10 ☐ 11-20 ☐ 20-50 ☐ greater than 50

c. Check the following that apply regarding the individuals proximity to the water body.
☐ Water in mouth or nose of the individual ☐ Primary touch: Individual's body (or portion) immersed in water
☐ Secondary touch: fishing, pets and related contact with water ☐ Individual is in a boat touching water
☐ Individual is on shore near water within 8 meters (25ft) of water ☐ Individual is well away from water between 8 and 30 meters (100 ft) ☐ Not applicable

2. If primary contact recreation activities are not observed, describe the physical characteristics of the water body that may hinder the frequency of primary contact (depth, etc.) (Attach photos, etc. for documentation).

_____

_____

3. Describe if there is public access (e.g. parks, roads, etc.) (Attach photos, maps, etc. for documentation).

_____

_____

4. Is an area with primary contact recreation activities or a bathing beach (e.g. state/local parks with swimming, etc.) located near (e.g. within 5 miles upstream and downstream) this site?

C. Secondary Contact Water Recreation Evaluation:
- Secondary contact recreation 1: Water recreation activities, such as fishing, commercial and recreational boating, and limited body contact incidental to shoreline activity, not involving a significant risk of water ingestion and that commonly occur.
- Secondary contact recreation 2: Water recreation activities, such as fishing, commercial and recreational boating, and limited body contact incidental to shoreline activity, not involving a significant risk of water ingestion but that occur less frequently than for secondary contact recreation 1 due to (1) physical characteristics of the water body and/or (2) limited public access.

1. Were water recreation activities observed at the site, but the nature of the recreation does not involve a significant risk of ingestion (e.g. secondary contact recreation activities)? ☐ Yes ☐ No secondary contact recreation activities were observed

a. Check the following boxes of secondary contact recreation activities that were observed at the time of the sampling event at the site (Attach photos of activities or lack of activities).

☐ Fishing
☐ Boating-commercial, recreational
☐ Non-whitewater-kayaking, rafting, canoeing
☐ No secondary contact recreation activities were observed
Other secondary contact activities: _____

Field Data Sheets – Basic RUAA Survey

Stream Name Nava Sota Site: 10
Date: Time:

b. Check the number of individuals observed at the site.
☐ None ☐ 1-10 ☐ 11-20 ☐ 20-50 ☐ greater than 50

c. Check the following that apply regarding the individuals proximity to the water body.
☐ Secondary touch: fishing, pets and related contact with water ☐ In a boat touching water
☐ Body on shore near water within 8 meters (25ft) of water ☐ Body well away from water between 8 and 30 meters (100 ft)

2. If secondary contact recreation activities are not observed, describe the physical characteristics of the water body that may hinder the frequency of secondary contact (Attach photos, etc. for documentation).

3. If secondary contact recreation activities are observed, how often do water recreational activities occur that do not involve a significant risk of water ingestion? ☐ frequently ☐ infrequently
Please describe how often the activities occur? ☐ Unknown ☐ Never ☐ Daily ☐ Monthly ☐ Yearly

4. If infrequently, what is the reason? ☐ physical characteristics of the water body ☐ limited public access ☐ other
If other, list reasons:

5. Describe the physical characteristics of the water body that hinders the frequency of secondary contact recreation (depth, etc.) (Attach photos or depth measurements, etc. for documentation).

6. Describe why there is limited public access (e.g. lack of roads, river or stream banks overgrown, etc.) (Attach photos, maps, etc. for documentation).

D. Noncontact Recreation Evaluation

Noncontact recreation applies to water bodies where recreation activities do not involve a significant risk of water ingestion, and where primary and secondary contact recreation uses do not occur because of unsafe conditions, such as barge traffic.

1. Provide site-specific information and documentation (including photographs) regarding unsafe conditions, recreation activities, and presence or absence of water recreation activities.

Field Data Sheets – Basic RUAA Survey

Stream Name Navasota Site: 10
Date: _____ FDS Page 3 of 8 _____

E. Stream Channel and Substantial Pools
Please check the following which best describes the river or stream: ☐ Wadeable ☐ Non-wadeable

1. Wadeable Streams
Determine whether or not the average depth at the thalweg is greater than 0.5 meters and if there are substantial pools with a depth of 1 meter or greater. Walk an approximately 300 meter reach (total) at the site and take the following measurements within the 300 meter reach. Measurements should be taken during base flow conditions (sustained or typical dry, warm-weather flows between rainfall events, excluding unusual antecedent conditions of drought or wet weather

Also, take photos facing upstream, downstream, left bank, and right bank at the 30 meters, 150 meters, and 300 meters.
Photos #s (30 meters) Upstream____ Downstream____ Left Bank ____ Right Bank____
Photos #s (150 meters) Upstream____ Downstream____ Left Bank ____ Right Bank____
Photos #s (300 meters) Upstream____ Downstream____ Left Bank ____ Right Bank____

a) Substantial pools - Measure the length of each pool (if > 10 pools only measure 10 pools), the width (at the widest point), and the deepest depth. A substantial pool is considered a pool greater than 10 meters in length for the purposes of a Basic RUAA Survey. If depth and/or width measurements were not attainable, explain why.

	Length (meters)	Width (meters)	Depth (meters)
Pool 1			
Pool 2			
Pool 3			
Pool 4			
Pool 5			
Pool 6			
Pool 7			
Pool 8			
Pool 9			
Pool 10			

b)Average depth at the thalweg –Take depth measurements approximately every 30 meters to calculate an average depth at the thalweg (at least 10 measurements needed). If depth and/or width measurements were not attainable, explain why.

Distance	Depth (meters)
30 meters	
60 meters	
90 meters	
120 meters	
150 meters	
180 meters	
210 meters	
240 meters	
270 meters	
300 meters	
Average	

Field Data Sheets – Basic RUAA Survey

Stream Name Navasota Site: 10
Date: _____ Time: _____

c) Stream width - Measure (1) the width at one point which represents the typical average width of the 300 meter reach; (2) the width at the narrowest point of the stream within the 300 meter reach; and (3) the width at the widest point of the stream within the 300 meter reach.

Measurement Type	Width (meters)
Typical Average Width of 300 meter reach	
Width at narrowest point of the stream within 300 meter reach	
Width at the widest point of the stream within 300 meter reach	

d) Is there sufficient water within a 300 meter stream reach during base flow conditions to support primary contact recreation? ☐ Yes ☐ No
COMMENTS:

_____

_____

2. Non-wadeable Streams
If accessible, take 10 width measurements which represent typical widths of the 300 meter reach. If the water is too deep and not accessible record the estimated average width of the water body.

Also, take photos facing upstream, downstream, left bank, and right bank at .
Photos #s (30 meters) Upstream____ Downstream____ Left Bank ____ Right Bank____
Photos #s (150 meters) Upstream____ Downstream____ Left Bank ____ Right Bank____
Photos #s (300 meters) Upstream____ Downstream____ Left Bank ____ Right Bank____

# Measurements	Width (meters)
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	

Field Data Sheets – Basic RUAA Survey

Stream Name Nawasota Site: 10
Date: _____ Time: _____

F. Additional RUAA Information

1. Check the following activities observed over the site reach.

- ☐ Drinking or water in mouth
- ☐ Bathing
- ☐ Walking
- ☐ Jogging/running
- ☐ Bicycling
- ☐ Standing
- ☐ Sitting
- ☐ Lying down/sleeping
- ☐ Playing on shoreline
- ☐ Picnicking
- ☐ Motorcycle/ATV
- ☐ Hunting/Trapping
- ☐ Wildlife watching
- ☐ None
- ☐ Other: _____

2. Are there permanent or long-term hydrologic modifications that are constructed and operated in a way that affects the recreational uses? ☐ Yes ☐ No (If yes, please provide supporting documentation and photos.)

Comments: _____

3. Check any channel obstructions that apply (Attach photos).

- ☐ Culverts
- ☐ Barbed wire
- ☐ Utility pipe
- ☐ Fences
- ☐ Dams
- ☐ Other (specify): _____
- ☐ Log jams
- ☐ Thick vegetation
- ☐ Rip rap
- ☐ Low bridges
- ☐ Water control structure
- ☐ None

4. Check all surrounding conditions that promote recreational activities (Attach photos of evidence or unusual items of interest).

- ☐ Campgrounds
- ☐ Playgrounds
- ☐ Rural area
- ☐ Residential
- ☐ National forests
- ☐ Urban/suburban location
- ☐ Golf Course
- ☐ Sports Field
- ☐ Stairs/walkway
- ☐ Boating access (ramps)
- ☐ Beach
- ☐ Bridge crossing
- ☐ Commercial boating
- ☐ Trails/paths (hiking/biking)
- ☐ Paved parking lot
- ☐ Unimproved parking lot
- ☐ Roads (paved/unpaved)
- ☐ Populated area
- ☐ Docks or rafts
- ☐ Commercial outfitter
- ☐ Nearby school
- ☐ Power Line Corridor
- ☐ Parks (national/city/county/state)
- ☐ Public Property
- ☐ Other: _____
- ☐ None of the Above

Comments: _____

5. Check all surrounding conditions that impede recreational activities (Attach photos of evidence or unusual items of interest).

- ☐ Private Property
- ☐ No trespass sign
- ☐ Wildlife
- ☐ Steep slopes
- ☐ No public access
- ☐ No roads
- ☐ Fence
- ☐ Barge/ship traffic
- ☐ Industrial
- ☐ None of the Above
- ☐ Other: _____

Comments: _____

6. Check any indications of human use (Attach photos).

- ☐ Roads
- ☐ Rope swings
- ☐ Dock/platform
- ☐ Foot paths/prints
- ☐ Other: _____
- ☐ RV/ATV Tracks
- ☐ Camping Sites
- ☐ Fire pit/ring
- ☐ Fishing Tackle
- ☐ NPDES Discharge
- ☐ Gates on corridor
- ☐ Children's toys
- ☐ Remnant's of Kid's play
- ☐ Organized event
- ☐ No Human Presence

Comments: _____

Field Data Sheets – Basic RUAA Survey

Stream Name Navasota Site: 10
Date: Time:

7. Check all water characteristics that apply (Attach photos).

Aquatic Vegetation: absent rare common abundant
Algae Cover: absent rare common abundant
Odor: none rare common abundant
Color: clear green red brown black
Bottom Deposit: sludge solids fine sediments none other
Water Surface: clear scum foam debris oil
Other:

8. Vertebrates Observed within 300 meter reach

Snakes	None	slight presence	moderate presence	large presence
Water Dependent Birds	None	slight presence	moderate presence	large presence
Alligators	None	slight presence	moderate presence	large presence

Comments:

9. Mammals Observed within 300 meter reach

Wild	None	slight presence	moderate presence	large presence
Domesticated Pets	None	slight presence	moderate presence	large presence
Livestock	None	slight presence	moderate presence	large presence
Feral Hogs	None	slight presence	moderate presence	large presence

Comments:

10. Evidence of wild animals or evidence of birds, cattle, hogs, etc.
Tracks Fecal droppings Bird nests

11. Garbage Observed

Large garbage in the channel	None	Rare	Common	Abundant
Small garbage in the channel	None	Rare	Common	Abundant
Bank Garbage	None	Rare	Common	Abundant

Briefly describe the kinds of garbage observed:

12. Is the site located in a wildlife preserve with large wildlife (i.e waterfowl) population? Yes No

13. Please document any other relevant information regarding recreational activities and the water body in general (for example, area outside of the stream reach evaluated).

Field Data Sheet - Basic RUAA Survey

Stream Flow (Discharge) Measurement

Stream: Navasota River (1209) Date:

Site: #10 Site

Description: Dudley South

Time Begin: Time End: Meter Type: SonTek Flowtracker

Observers: Stream Width*: Section Width (W):

Observations:

Section Midpoint (ft) (m)	Section Depth (ft) (m) (cm) (D)	Observational Depth** (ft)(m)	Velocity (V)		Flow (Q) (m^3/s) (ft^3/s) Q = (W)(D)(V)
			At Point (ft/s)(m/s)	Average (ft/s)(m/s)	

11

Field Data Sheets – Basic RUAA Survey

(should be completed for each site)

Data Collectors & Contact Information: J. Wurst, M. Shepard, R. Thompson, L. Bernardes	
Date & Time: 6/25/10 1607 – 1619	County Name: Grimes / Brazos
Stream Name: Navasota river below lake Limestone	
Segment No. or nearest downstream Segment No.: 1209	
Description of Site: SH 30 @ Navasota	

At any point during the Basic RUAA Survey it becomes apparent that primary contact recreation is clearly the use for the water body the investigator should stop conducting the UAA.

A. Stream Characteristics:

1. Check the following channel flow status that applies.

☐ dry ☐ no flow ☐ low ☒ normal ☐ high ☐ flooded

2. Check the following stream type that applies on the day of the survey:

☐ Ephemeral: A stream which flows only during or immediately after a rainfall event, and contains no refuge pools capable of sustaining a viable community of aquatic organisms.

☐ Intermittent: A stream which has a period of zero flow for at least one week during most years. Where flow records are available, a stream with a 7Q2 flow of less than 0.1 cubic feet per second is considered intermittent.

☐ Intermittent w/ perennial pools: An intermittent stream which maintains persistent pools even when flow in the stream is less than 0.1 cubic feet per second.

☒ Perennial: A stream which flows continuously throughout the year. Perennial streams have a 7Q2 equal to or greater than 0.1 cubic feet per second.

☐ Designated or unclassified tidal stream: A stream that is tidally influenced. If you checked this box, you will need to contact the Water Quality Standards Group and evaluate whether or not a bathing beach is located along the tidal stream and whether or not a bathing beach is located along the estuary, bay or Gulf water that the tidal stream flows into.

3. Streamflow

Use USGS gage data (if a gage is located at a site or within a quarter mile of a site) or use the Stream Flow (Discharge) Measurement Form and follow the procedures outlined in the most recent TCEQ Surface Water Quality Monitoring Procedures, Volume 1, RG-415. If USGS gage data is used for a site, include that information as an attachment and list the streamflow on the sampling date below. If the stream flow taken at one site is representative of the flow at another site(s), then that flow can be used as the observed flow and should be documented below. If the stream flow measured at one site is different from another site, then stream flow should be taken at both sites. ____ cfs

4. Water Quality Data (Field Parameters)

Field parameters should be collected in accordance with the procedures outlined in the most recent TCEQ Surface Water Quality Monitoring Procedures, Volume 1.

Air Temp 33 °C Water Temp 30 °C Secchi 0.180 m

5. Riparian Zone (Mark dominant categories with L (Left Bank) and R (Right Bank). Bank orientation is determined by the investigator facing downstream.)

R, L Forest	____ Urban	____ Rip rap
____ Shrub dominated corridor	____ Pasture	____ Concrete
____ Herbaceous marsh	____ Row crops	Other (specify): ____
____ Mowed/maintained corridor	____ Denuded/Eroded bank	

6. Ease of bank access to the water body: ☐ Easy ☒ Moderately easy ☐ Moderately difficult ☐ Difficult

7. Please describe access opportunities or explain why the site is not easily accessible (Attach photos for documentation):

a few areas easy to get down to water otherwise relatively steep & overgrown, fencing/No trespassi downstrea

8. Dominant Primary Substrate

☐ Cobble ☐ Sand ☐ Silt ☒ Mud/Clay ☐ Gravel ☐ Bedrock ☐ Rip rap ☐ Concrete

E TB 7/1 QC JB 7/1

Field Data Sheets – Basic RUAA Survey

Stream Name Navasota River below Lake Limestone Site: 11
Date: 6/25/10 Time: _____

B. Primary Contact Water Recreation Evaluation:
- Primary contact recreation draft definition: Water recreation activities, such as wading by children, swimming, water skiing, diving, tubing, surfing, and whitewater kayaking, canoeing, and rafting, involving a significant risk of ingestion of water.

1. Were water recreation activities that involve a significant risk of ingestion (full body immersion) observed at this site?
☐ Yes ☒ No primary contact recreation activities were observed
a. Check the following boxes of primary contact recreation activities observed at the time of the sampling event at the site (Attach photos of the activities or lack of activities).

☐ Wading-Children	☐ Tubing	☒ No primary contact activities that commonly occur were observed
☐ Wading-Adults	☐ Surfing	
☐ Swimming	☐ Whitewater-kayaking, canoeing, rafting	
☐ Water skiing	☐ Other: _____	
☐ Diving	☐ frequent public swimming-created by publicly owned land or commercial operations	

b. Check the number of individuals observed at the site: ☒ None ☐ 1-10 ☐ 11-20 ☐ 20-50 ☐ greater than 50

c. Check the following that apply regarding the individuals proximity to the water body.
☐ Water in mouth or nose of the individual ☐ Primary touch: Individual's body (or portion) immersed in water
☐ Secondary touch: fishing, pets and related contact with water ☐ Individual is in a boat touching water
☐ Individual is on shore near water within 8 meters (25ft) of water ☐ Individual is well away from water between 8 and 30 meters (100 ft) ☒ Not applicable

2. If primary contact recreation activities are not observed, describe the physical characteristics of the water body that may hinder the frequency of primary contact (depth, etc.) (Attach photos, etc. for documentation).
turbid & deep water, relatively steep banks not flowing too fast ~~from~~ as compared to downstream sites

3. Describe if there is public access (e.g. parks, roads, etc.) (Attach photos, maps, etc. for documentation).
can pull off under road, lots of room to park; thick vegetation upstream & private property

4. Is an area with primary contact recreation activities or a bathing beach (e.g. state/local parks with swimming, etc.) located near (e.g. within 5 miles upstream and downstream) this site? No

C. Secondary Contact Water Recreation Evaluation:
- Secondary contact recreation 1: Water recreation activities, such as fishing, commercial and recreational boating, and limited body contact incidental to shoreline activity, not involving a significant risk of water ingestion and that commonly occur.
- Secondary contact recreation 2: Water recreation activities, such as fishing, commercial and recreational boating, and limited body contact incidental to shoreline activity, not involving a significant risk of water ingestion but that occur less frequently than for secondary contact recreation 1 due to (1) physical characteristics of the water body and/or (2) limited public access.

1. Were water recreation activities observed at the site, but the nature of the recreation does not involve a significant risk of ingestion (e.g. secondary contact recreation activities)? ☐ Yes ☒ No secondary contact recreation activities were observed
a. Check the following boxes of secondary contact recreation activities that were observed at the time of the sampling event at the site (Attach photos of activities or lack of activities).
☐ Fishing
☐ Boating-commercial, recreational
☐ Non-whitewater-kayaking, rafting, canoeing
☒ No secondary contact recreation activities were observed
☐ Other secondary contact activities: _____

Field Data Sheets – Basic RUAA Survey

Stream Name Navasota River below Lake Limestone Site: 11
Date: 6/23/00 Time:

b. Check the number of individuals observed at the site.
☒ None ☐ 1-10 ☐ 11-20 ☐ 20-50 ☐ greater than 50

c. Check the following that apply regarding the individuals proximity to the water body.
☐ Secondary touch: fishing, pets and related contact with water ☐ In a boat touching water
☐ Body on shore near water within 8 meters (25ft) of water ☐ Body well away from water between 8 and 30 meters (100 ft) N/A

2. If secondary contact recreation activities are not observed, describe the physical characteristics of the water body that may hinder the frequency of secondary contact (Attach photos, etc. for documentation).
None

3. If secondary contact recreation activities are observed, how often do water recreational activities occur that do not involve a significant risk of water ingestion? ☐ frequently ☐ infrequently
Please describe how often the activities occur? ☐ Unknown ☐ Never ☐ Daily ☐ Monthly ☐ Yearly N/A

4. If infrequently, what is the reason? ☐ physical characteristics of the water body ☐ limited public access ☐ other
If other, list reasons: N/A

5. Describe the physical characteristics of the water body that hinders the frequency of secondary contact recreation (depth, etc.) (Attach photos or depth measurements, etc. for documentation).
None

6. Describe why there is limited public access (e.g. lack of roads, river or stream banks overgrown, etc.) (Attach photos, maps, etc. for documentation).
same as before

D. Noncontact Recreation Evaluation

Noncontact recreation applies to water bodies where recreation activities do not involve a significant risk of water ingestion, and where primary and secondary contact recreation uses do not occur because of unsafe conditions, such as barge traffic.

1. Provide site-specific information and documentation (including photographs) regarding unsafe conditions, recreation activities, and presence or absence of water recreation activities.

Field Data Sheets – Basic RUAA Survey

Stream Name Navasota river below Calcilimestone Site: 11
Date: 6/25/10 FDS Page 3 of 8 Time:

E. Stream Channel and Substantial Pools
Please check the following which best describes the river or stream: ☐ Wadeable ☒ Non-wadeable

1. Wadeable Streams N/A
Determine whether or not the average depth at the thalweg is greater than 0.5 meters and if there are substantial pools with a depth of 1 meter or greater. Walk an approximately 300 meter reach (total) at the site and take the following measurements within the 300 meter reach. Measurements should be taken during base flow conditions (sustained or typical dry, warm-weather flows between rainfall events, excluding unusual antecedent conditions of drought or wet weather

Also, take photos facing upstream, downstream, left bank, and right bank at the 30 meters, 150 meters, and 300 meters.
Photos #s (30 meters) Upstream ✓ Downstream ✓ Left Bank ✓ Right Bank ✓
Photos #s (150 meters) Upstream ✓ Downstream ✓ Left Bank ✓ Right Bank ✓
Photos #s (300 meters) Upstream ✓ Downstream ✓ Left Bank ✓ Right Bank ✓

a) Substantial pools - Measure the length of each pool (if > 10 pools only measure 10 pools), the width (at the widest point), and the deepest depth. A substantial pool is considered a pool greater than 10 meters in length for the purposes of a Basic RUAA Survey. If depth and/or width measurements were not attainable, explain why.

	Length (meters)	Width (meters)	Depth (meters)
Pool 1			
Pool 2			
Pool 3			
Pool 4			
Pool 5			
Pool 6			
Pool 7			
Pool 8			
Pool 9			
Pool 10			

b)Average depth at the thalweg –Take depth measurements approximately every 30 meters to calculate an average depth at the thalweg (at least 10 measurements needed). If depth and/or width measurements were not attainable, explain why.

Distance	Depth (meters)
30 meters	
60 meters	
90 meters	
120 meters	
150 meters	
180 meters	
210 meters	
240 meters	
270 meters	
300 meters	
Average	

Field Data Sheets – Basic RUAA Survey

Stream Name Navasota River below Lake Limestone Site: 11
Date: 6/25/10 Time:

c) Stream width - Measure (1) the width at one point which represents the typical average width of the 300 meter reach; (2) the width at the narrowest point of the stream within the 300 meter reach; and (3) the width at the widest point of the stream within the 300 meter reach.

Measurement Type	Width (meters)
Typical Average Width of 300 meter reach	
Width at narrowest point of the stream within 300 meter reach	
Width at the widest point of the stream within 300 meter reach	

d) Is there sufficient water within a 300 meter stream reach during base flow conditions to support primary contact recreation? ☒ Yes ☐ No
COMMENTS:

2. Non-wadeable Streams
If accessible, take 10 width measurements which represent typical widths of the 300 meter reach. If the water is too deep and not accessible record the estimated average width of the water body.

Also, take photos facing upstream, downstream, left bank, and right bank at .
Photos #s (30 meters) Upstream ✓ Downstream ✓ Left Bank ✓ Right Bank ✓
Photos #s (150 meters) Upstream ✓ Downstream ✓ Left Bank ✓ Right Bank ✓
Photos #s (300 meters) Upstream ✓ Downstream ✓ Left Bank ✓ Right Bank ✓

# Measurements	Width (meters)
1	32m
2	36m
3	35m
4	38m
5	
6	
7	
8	
9	
10	

Navasota **Field Data Sheets – Basic RUAA Survey** 11

Stream Name: river below lake Limestone Site: _____

Date: 6/25/10 Time: _____

F. Additional RUAA Information

1. Check the following activities observed over the site reach.

- ☐ Drinking or water in mouth
- ☐ Bathing
- ☐ Walking
- ☐ Jogging/running
- ☐ Bicycling
- ☐ Standing
- ☐ Sitting
- ☐ Lying down/sleeping
- ☐ Playing on shoreline
- ☐ Picnicking
- ☐ Motorcycle/ATV
- ☐ Hunting/Trapping
- ☐ Wildlife watching
- ☒ None
- ☐ Other: _____

2. Are there permanent or long-term hydrologic modifications that are constructed and operated in a way that affects the recreational uses? ☐ Yes ☒ No (If yes, please provide supporting documentation and photos.)

Comments: _____

3. Check any channel obstructions that apply (Attach photos).

- ☐ Culverts
- ☐ Barbed wire
- ☐ Utility pipe
- ☐ Fences
- ☐ Dams
- ☒ Other (specify): some tree debris under bridge
- ☐ Log jams
- ☐ Thick vegetation
- ☐ Rip rap
- ☐ Low bridges
- ☐ Water control structure
- ☐ None

4. Check all surrounding conditions that promote recreational activities (Attach photos of evidence or unusual items of interest).

- ☐ Campgrounds
- ☐ Playgrounds
- ☐ Rural area
- ☐ Residential
- ☐ National forests
- ☐ Urban/suburban location
- ☐ Golf Course
- ☐ Sports Field
- ☐ Stairs/walkway
- ☒ Boating access (ramps)
- ☐ Beach
- ☒ Bridge crossing
- ☐ Commercial boating
- ☐ Trails/paths (hiking/biking)
- ☐ Paved parking lot
- ☒ Unimproved parking lot
- ☒ Roads (paved/unpaved)
- ☒ Populated area
- ☐ Docks or rafts
- ☐ Commercial outfitter
- ☐ Nearby school
- ☐ Power Line Corridor
- ☐ Parks (national/city/county/state)
- ☐ Public Property
- ☐ Other: _____
- ☐ None of the Above

Comments: make-shift ramp,

5. Check all surrounding conditions that impede recreational activities (Attach photos of evidence or unusual items of interest).

- ☒ Private Property
- ☒ No trespass sign
- ☐ Wildlife
- ☒ Steep slopes
- ☐ No public access
- ☐ No roads
- ☐ Fence
- ☐ Barge/ship traffic
- ☐ Industrial
- ☐ None of the Above
- ☐ Other: _____

Comments: _____

6. Check any indications of human use (Attach photos).

- ☒ Roads
- ☐ Rope swings
- ☐ Dock/platform
- ☒ Foot paths/prints
- ☒ Other: shotgun shells
- ☐ RV/ATV Tracks
- ☐ Camping Sites
- ☒ Fire pit/ring
- ☒ Fishing Tackle
- ☐ NPDES Discharge
- ☐ Gates on corridor
- ☐ Children's toys
- ☐ Remnant's of Kid's play
- ☐ Organized event
- ☐ No Human Presence

Comments: lots of fishing gear - lures & bait, broken canvas chair air mattress, make-shift boat ramp

Navasota **Field Data Sheets – Basic RUAA Survey**

Stream Name River below Lake Limestone Site: 11

Date: 6/25/10 Time:

7. Check all water characteristics that apply (Attach photos).

Aquatic Vegetation: ☒ absent ☐ rare ☐ common ☐ abundant

Algae Cover: ☒ absent ☐ rare ☐ common ☐ abundant

Odor: ☒ none ☐ rare ☐ common ☐ abundant

Color: ☐ clear ☐ green ☐ red ☒ brown ☐ black

Bottom Deposit: ☐ sludge ☐ solids ☒ fine sediments ☐ none ☐ other

Water Surface: ☒ clear ☐ scum ☐ foam ☐ debris ☐ oil

Other:

8. Vertebrates Observed within 300 meter reach

Snakes	☐ None	☒ slight presence	☐ moderate presence	☐ large presence (1)
Water Dependent Birds	☒ None	☐ slight presence	☐ moderate presence	☐ large presence
Alligators	☒ None	☐ slight presence	☐ moderate presence	☐ large presence

Comments:

9. Mammals Observed within 300 meter reach

Wild	☒ None	☐ slight presence	☐ moderate presence	☐ large presence
Domesticated Pets	☒ None	☐ slight presence	☐ moderate presence	☐ large presence
Livestock	☒ None	☐ slight presence	☐ moderate presence	☐ large presence
Feral Hogs	☒ None	☐ slight presence	☐ moderate presence	☐ large presence

Comments:

10. Evidence of wild animals or evidence of birds, cattle, hogs, etc.

☒ Tracks ☐ Fecal droppings ☐ Bird nests

11. Garbage Observed

Large garbage in the channel	☒ None	☐ Rare	☐ Common	☐ Abundant
Small garbage in the channel	☒ None	☐ Rare	☐ Common	☐ Abundant
Bank Garbage	☐ None	☐ Rare	☒ Common	☐ Abundant

Briefly describe the kinds of garbage observed: fishing tackle, food containers bait containers

12. Is the site located in a wildlife preserve with large wildlife (i.e waterfowl) population? ☐ Yes ☒ No

13. Please document any other relevant information regarding recreational activities and the water body in general (for example, area outside of the stream reach evaluated).

Field Data Sheet - Basic RUAA Survey
Stream Flow (Discharge) Measurement

Stream: Navasota river below lake limestone Date: 6/25/10

Site: 11 Site

Description: SH 30 @ Navasota

Time Begin: Time End: Meter Type: Sontek Flowtracker

Observers: Stream Width*: Section Width (W):

Observations:

Section Midpoint (ft) (m)	Section Depth (ft) (m) (cm) (D)	Observational Depth** (ft)(m)	Velocity (V) At Point (ft/s)(m/s)	Velocity (V) Average (ft/s)(m/s)	Flow (Q) (m^3/s) (ft^3/s) Q = (W)(D)(V)

No flow taken

too deep to wade

Field Data Sheets – Basic RUAA Survey

(should be completed for each site)

Data Collectors & Contact Information: J. West, M. Shepard, R Thompson L. Benavides	
Date & Time: 6/25/10 1521 - 1535	County Name: Grimes / Brazos
Stream Name: Navasota river below Lake Limestone	
Segment No. or nearest downstream Segment No.: 1209	
Description of Site: Sulphur Spring Rd 1 @ Navasota	

At any point during the Basic RUAA Survey it becomes apparent that primary contact recreation is clearly the use for the water body the investigator should stop conducting the UAA.

A. Stream Characteristics:

1. Check the following channel flow status that applies.

☐ dry ☐ no flow ☐ low ☒ normal ☐ high ☐ flooded

2. Check the following stream type that applies on the day of the survey:

☐ Ephemeral: A stream which flows only during or immediately after a rainfall event, and contains no refuge pools capable of sustaining a viable community of aquatic organisms.

☐ Intermittent: A stream which has a period of zero flow for at least one week during most years. Where flow records are available, a stream with a 7Q2 flow of less than 0.1 cubic feet per second is considered intermittent.

☐ Intermittent w/ perennial pools: An intermittent stream which maintains persistent pools even when flow in the stream is less than 0.1 cubic feet per second.

☒ Perennial: A stream which flows continuously throughout the year. Perennial streams have a 7Q2 equal to or greater than 0.1 cubic feet per second.

☐ Designated or unclassified tidal stream: A stream that is tidally influenced. If you checked this box, you will need to contact the Water Quality Standards Group and evaluate whether or not a bathing beach is located along the tidal stream and whether or not a bathing beach is located along the estuary, bay or Gulf water that the tidal stream flows into.

3. Streamflow

Use USGS gage data (if a gage is located at a site or within a quarter mile of a site) or use the Stream Flow (Discharge) Measurement Form and follow the procedures outlined in the most recent TCEQ Surface Water Quality Monitoring Procedures, Volume 1, RG-415. If USGS gage data is used for a site, include that information as an attachment and list the streamflow on the sampling date below. If the stream flow taken at one site is representative of the flow at another site(s), then that flow can be used as the observed flow and should be documented below. If the stream flow measured at one site is different from another site, then stream flow should be taken at both sites. ___/___ cfs

4. Water Quality Data (Field Parameters)

Field parameters should be collected in accordance with the procedures outlined in the most recent TCEQ Surface Water Quality Monitoring Procedures, Volume 1.

Air Temp 33 °C Water Temp 29 °C Secchi 0.110 m

5. Riparian Zone (Mark dominant categories with L (Left Bank) and R (Right Bank). Bank orientation is determined by the investigator facing downstream.)

R, L Forest	___ Urban	___ Rip rap
___ Shrub dominated corridor	___ Pasture	___ Concrete
___ Herbaceous marsh	___ Row crops	Other (specify): ___
___ Mowed/maintained corridor	___ Denuded/Eroded bank	

6. Ease of bank access to the water body: ☐ Easy ☐ Moderately easy ☒ Moderately difficult ☐ Difficult

7. Please describe access opportunities or explain why the site is not easily accessible (Attach photos for documentation):

steep banks, very slippery

8. Dominant Primary Substrate

☐ Cobble ☒ Sand ☐ Silt ☒ Mud/Clay ☐ Gravel ☐ Bedrock ☐ Rip rap ☐ Concrete

E TB 7/1 QC JB 7/1

Field Data Sheets – Basic RUAA Survey

Stream Name Navasota River below Lake Limestone Site: 13
Date: 6/25/10 Time: 1521 - 1535

B. Primary Contact Water Recreation Evaluation:
- Primary contact recreation draft definition: Water recreation activities, such as wading by children, swimming, water skiing, diving, tubing, surfing, and whitewater kayaking, canoeing, and rafting, involving a significant risk of ingestion of water.

1. Were water recreation activities that involve a significant risk of ingestion (full body immersion) observed at this site?
☐ Yes ☒ No primary contact recreation activities were observed

a. Check the following boxes of primary contact recreation activities observed at the time of the sampling event at the site (Attach photos of the activities or lack of activities).

☐ Wading-Children ☐ Tubing ☒ No primary contact activities that commonly occur were observed
☐ Wading-Adults ☐ Surfing
☐ Swimming ☐ Whitewater-kayaking, canoeing, rafting
☐ Water skiing ☐ Other: _____
☐ Diving ☐ frequent public swimming-created by publicly owned land or commercial operations

b. Check the number of individuals observed at the site: ☒ None ☐ 1-10 ☐ 11-20 ☐ 20-50 ☐ greater than 50

c. Check the following that apply regarding the individuals proximity to the water body.
☐ Water in mouth or nose of the individual ☐ Primary touch: Individual's body (or portion) immersed in water
☐ Secondary touch: fishing, pets and related contact with water ☐ Individual is in a boat touching water
☐ Individual is on shore near water within 8 meters (25ft) of water ☐ Individual is well away from water between 8 and 30 meters (100 ft) ☒ Not applicable

2. If primary contact recreation activities are not observed, describe the physical characteristics of the water body that may hinder the frequency of primary contact (depth, etc.) (Attach photos, etc. for documentation).
deep water, steep banks

3. Describe if there is public access (e.g. parks, roads, etc.) (Attach photos, maps, etc. for documentation).
park at dead end of road ~~& park~~ NCS but "No Trespassing" signs posted (downstream) & fence (upstream)

4. Is an area with primary contact recreation activities or a bathing beach (e.g. state/local parks with swimming, etc.) located near (e.g. within 5 miles upstream and downstream) this site? No

C. Secondary Contact Water Recreation Evaluation:
- Secondary contact recreation 1: Water recreation activities, such as fishing, commercial and recreational boating, and limited body contact incidental to shoreline activity, not involving a significant risk of water ingestion and that commonly occur.
- Secondary contact recreation 2: Water recreation activities, such as fishing, commercial and recreational boating, and limited body contact incidental to shoreline activity, not involving a significant risk of water ingestion but that occur less frequently than for secondary contact recreation 1 due to (1) physical characteristics of the water body and/or (2) limited public access.

1. Were water recreation activities observed at the site, but the nature of the recreation does not involve a significant risk of ingestion (e.g. secondary contact recreation activities)? ☐ Yes ☒ No secondary contact recreation activities were observed

a. Check the following boxes of secondary contact recreation activities that were observed at the time of the sampling event at the site (Attach photos of activities or lack of activities).
☐ Fishing
☐ Boating-commercial, recreational
☐ Non-whitewater-kayaking, rafting, canoeing
☒ No secondary contact recreation activities were observed
☐ Other secondary contact activities: _____

Field Data Sheets – Basic RUAA Survey

Stream Name Navasota river below lake Limestone Site: 13
Date: 6/25/10 Time: 1521 - 1535

b. Check the number of individuals observed at the site.
☒ None ☐ 1-10 ☐ 11-20 ☐ 20-50 ☐ greater than 50

c. Check the following that apply regarding the individuals proximity to the water body.
☐ Secondary touch: fishing, pets and related contact with water ☐ In a boat touching water
☐ Body on shore near water within 8 meters (25ft) of water ☐ Body well away from water between 8 and 30 meters (100 ft) N/A

2. If secondary contact recreation activities are not observed, describe the physical characteristics of the water body that may hinder the frequency of secondary contact (Attach photos, etc. for documentation).
None, possible boat ramp

3. If secondary contact recreation activities are observed, how often do water recreational activities occur that do not involve a significant risk of water ingestion? ☐ frequently ☐ infrequently
Please describe how often the activities occur? ☐ Unknown ☐ Never ☐ Daily ☐ Monthly ☐ Yearly N/A

4. If infrequently, what is the reason? ☐ physical characteristics of the water body ☐ limited public access ☐ other
If other, list reasons: N/A

5. Describe the physical characteristics of the water body that hinders the frequency of secondary contact recreation (depth, etc.) (Attach photos or depth measurements, etc. for documentation).
None

6. Describe why there is limited public access (e.g. lack of roads, river or stream banks overgrown, etc.) (Attach photos, maps, etc. for documentation).
same as above

D. Noncontact Recreation Evaluation

Noncontact recreation applies to water bodies where recreation activities do not involve a significant risk of water ingestion, and where primary and secondary contact recreation uses do not occur because of unsafe conditions, such as barge traffic.

1. Provide site-specific information and documentation (including photographs) regarding unsafe conditions, recreation activities, and presence or absence of water recreation activities.

Field Data Sheets – Basic RUAA Survey

Stream Name Navasota river below Lake Limestone Site: 13
Date: 6/25/10 ~~FDS Page 3 of 8~~ Time: 1521-1535

E. Stream Channel and Substantial Pools
Please check the following which best describes the river or stream: ☐ Wadeable ☒ Non-wadeable

1. Wadeable Streams N/A
Determine whether or not the average depth at the thalweg is greater than 0.5 meters and if there are substantial pools with a depth of 1 meter or greater. Walk an approximately 300 meter reach (total) at the site and take the following measurements within the 300 meter reach. Measurements should be taken during base flow conditions (sustained or typical dry, warm-weather flows between rainfall events, excluding unusual antecedent conditions of drought or wet weather

Also, take photos facing upstream, downstream, left bank, and right bank at the 30 meters, 150 meters, and 300 meters.
Photos #s (30 meters) Upstream____ Downstream____ Left Bank ____ Right Bank____
Photos #s (150 meters) Upstream____ Downstream____ Left Bank ____ Right Bank____
Photos #s (300 meters) Upstream____ Downstream____ Left Bank ____ Right Bank____

a) Substantial pools - Measure the length of each pool (if > 10 pools only measure 10 pools), the width (at the widest point), and the deepest depth. A substantial pool is considered a pool greater than 10 meters in length for the purposes of a Basic RUAA Survey. If depth and/or width measurements were not attainable, explain why.

	Length (meters)	Width (meters)	Depth (meters)
Pool 1			
Pool 2			
Pool 3			
Pool 4			
Pool 5			
Pool 6			
Pool 7			
Pool 8			
Pool 9			
Pool 10			

b)Average depth at the thalweg –Take depth measurements approximately every 30 meters to calculate an average depth at the thalweg (at least 10 measurements needed). If depth and/or width measurements were not attainable, explain why.

Distance	Depth (meters)
30 meters	
60 meters	
90 meters	
120 meters	
150 meters	
180 meters	
210 meters	
240 meters	
270 meters	
300 meters	
Average	~~25m~~ MC

Field Data Sheets – Basic RUAA Survey

Stream Name Navasota river below Lake Limestone Site: 13
Date: 6/25/10 Time: 1521 - 1535

c) Stream width - Measure (1) the width at one point which represents the typical average width of the 300 meter reach; (2) the width at the narrowest point of the stream within the 300 meter reach; and (3) the width at the widest point of the stream within the 300 meter reach.

Measurement Type	Width (meters)
Typical Average Width of 300 meter reach	
Width at narrowest point of the stream within 300 meter reach	
Width at the widest point of the stream within 300 meter reach	

d) Is there sufficient water within a 300 meter stream reach during base flow conditions to support primary contact recreation? ☒ Yes ☐ No
COMMENTS:

2. Non-wadeable Streams
If accessible, take 10 width measurements which represent typical widths of the 300 meter reach. If the water is too deep and not accessible record the estimated average width of the water body.

Also, take photos facing upstream, downstream, left bank, and right bank at .
Photos #s (30 meters) Upstream ✓ Downstream ✓ Left Bank ✓ Right Bank ✓
Photos #s (150 meters) Upstream____ Downstream____ Left Bank ____ Right Bank____
Photos #s (300 meters) Upstream____ Downstream____ Left Bank ____ Right Bank____

# Measurements	Width (meters)
1	25m
2	
3	
4	
5	
6	
7	
8	
9	
10	

Navarota **Field Data Sheets – Basic RUAA Survey** 13

Stream Name: rivers below lake Limestone Site: _____

Date: 6/29/10 Time: 1521 – 1535

F. Additional RUAA Information

1. Check the following activities observed over the site reach.

- ☐ Drinking or water in mouth
- ☐ Bathing
- ☐ Walking
- ☐ Jogging/running
- ☐ Bicycling
- ☐ Standing
- ☐ Sitting
- ☐ Lying down/sleeping
- ☐ Playing on shoreline
- ☐ Picnicking
- ☐ Motorcycle/ATV
- ☐ Hunting/Trapping
- ☐ Wildlife watching
- ☒ None
- ☐ Other: _____

2. Are there permanent or long-term hydrologic modifications that are constructed and operated in a way that affects the recreational uses? ☐ Yes ☒ No (If yes, please provide supporting documentation and photos.)

Comments: _____

3. Check any channel obstructions that apply (Attach photos).

- ☐ Culverts
- ☐ Barbed wire
- ☐ Utility pipe
- ☐ Fences
- ☐ Dams
- ☐ Other (specify): _____
- ☐ Log jams
- ☐ Thick vegetation
- ☐ Rip rap
- ☐ Low bridges
- Water control structure
- ☒ None

4. Check all surrounding conditions that promote recreational activities (Attach photos of evidence or unusual items of interest).

- ☐ Campgrounds
- ☐ Playgrounds
- ☒ Rural area
- ☐ Residential
- ☐ National forests
- ☐ Urban/suburban location
- ☐ Golf Course
- ☐ Sports Field
- ☐ Stairs/walkway
- ☒ Boating access (ramps)
- ☐ Beach
- ☐ Bridge crossing
- ☐ Commercial boating
- ☒ Trails/paths (hiking/biking)
- ☐ Paved parking lot
- ☒ Unimproved parking lot
- ☒ Roads (paved/unpaved) possible
- ☐ Populated area
- ☐ Docks or rafts
- ☐ Commercial outfitter
- ☐ Nearby school
- ☐ Power Line Corridor
- ☐ Parks (national/city/county/state)
- ☐ Public Property
- ☐ Other: _____
- ☐ None of the Above

Comments: _____

5. Check all surrounding conditions that impede recreational activities (Attach photos of evidence or unusual items of interest).

- ☒ Private Property
- ☒ No trespass sign
- ☐ Wildlife
- ☐ Steep slopes
- ☐ No public access
- ☐ No roads
- ☐ Fence
- ☐ Barge/ship traffic
- ☐ Industrial
- ☐ None of the Above
- ☐ Other: _____

Comments: _____

6. Check any indications of human use (Attach photos).

- ☐ Roads
- ☐ Rope swings
- ☐ Dock/platform
- ☒ Foot paths/prints
- ☐ Other: _____
- ☐ RV/ATV Tracks
- ☐ Camping Sites
- ☒ Fire pit/ring
- ☒ Fishing Tackle
- ☐ NPDES Discharge
- ☐ Gates on corridor
- ☐ Children's toys
- ☐ Remnant's of Kid's play
- ☐ Organized event
- ☐ No Human Presence

Comments: minnow bucket, foot paths into private property

Nawasota **Field Data Sheets – Basic RUAA Survey** 13

Stream Name river below lake Limestone Site: ___

Date: 6/25/10 Time: 1521 - 1531

7. Check all water characteristics that apply (Attach photos).

Aquatic Vegetation: ☒ absent ☐ rare ☐ common ☐ abundant

Algae Cover: ☒ absent ☐ rare ☐ common ☐ abundant

Odor: ☒ none ☐ rare ☐ common ☐ abundant

Color: ☐ clear ☐ green ☐ red ☒ brown ☐ black

Bottom Deposit: ☐ sludge ☐ solids ☒ fine sediments ☐ none ☐ other

Water Surface: ☒ clear ☐ scum ☐ foam ☐ debris ☐ oil

Other:

8. Vertebrates Observed within 300 meter reach

Snakes ☒ None ☐ slight presence ☐ moderate presence ☐ large presence

Water Dependent Birds ☒ None ☐ slight presence ☐ moderate presence ☐ large presence

Alligators ☒ None ☐ slight presence ☐ moderate presence ☐ large presence

Comments:

9. Mammals Observed within 300 meter reach

Wild ☒ None ☐ slight presence ☐ moderate presence ☐ large presence

Domesticated Pets ☒ None ☐ slight presence ☐ moderate presence ☐ large presence

Livestock ☒ None ☐ slight presence ☐ moderate presence ☐ large presence

Feral Hogs ☒ None ☐ slight presence ☐ moderate presence ☐ large presence

Comments:

10. Evidence of wild animals or evidence of birds, cattle, hogs, etc.

☒ Tracks ☐ Fecal droppings ☐ Bird nests

11. Garbage Observed

Large garbage in the channel ☒ None ☐ Rare ☐ Common ☐ Abundant

Small garbage in the channel ☒ None ☐ Rare ☐ Common ☐ Abundant

Bank Garbage ☐ None ☒ Rare ☐ Common ☐ Abundant

Briefly describe the kinds of garbage observed:

fishing ~~tate~~ tackle packaging, food & drink containers,

12. Is the site located in a wildlife preserve with large wildlife (i.e waterfowl) population? ☐ Yes ☐ No

13. Please document any other relevant information regarding recreational activities and the water body in general (for example, area outside of the stream reach evaluated).

2 vehicles came down, one interviewed 2nd just turned around. ↳ (checking water level)

Field Data Sheet - Basic RUAA Survey

Stream Flow (Discharge) Measurement

Stream: Navasota river below lake Limestone Date: 6/25/10

Site: 13 Site

Description: Sulphur Springs Rd 1 @ Navasota

Time Begin: _____ Time End: _____ Meter Type: Sontek Flowtracker

Observers: _____ Stream Width*: _____ Section Width (W): _____

Observations: _____

Section Midpoint (ft) (m)	Section Depth (ft) (m) (cm) (D)	Observational Depth** (ft)(m)	Velocity (V) At Point (ft/s)(m/s)	Velocity (V) Average (ft/s)(m/s)	Flow (Q) (m^3/s) (ft^3/s) Q = (W)(D)(V)
		No flow taken - too deep			

Field Data Sheets – Basic RUAA Survey

(should be completed for each site)

Data Collectors & Contact Information:	J. West, J. Shepard, R. Thompson, L. Bellavides
Date & Time: 6/25/10 1438 – 1500	County Name: Grimes / Brazos
Stream Name: Navasota river below lake Limestone	
Segment No. or nearest downstream Segment No.: 1209	
Description of Site: SH 6 @ Navasota	

At any point during the Basic RUAA Survey it becomes apparent that primary contact recreation is clearly the use for the water body the investigator should stop conducting the UAA.

A. Stream Characteristics:

1. Check the following channel flow status that applies.

☐ dry ☐ no flow ☐ low ☒ normal ☐ high ☐ flooded

2. Check the following stream type that applies on the day of the survey:

☐ Ephemeral: A stream which flows only during or immediately after a rainfall event, and contains no refuge pools capable of sustaining a viable community of aquatic organisms.

☐ Intermittent: A stream which has a period of zero flow for at least one week during most years. Where flow records are available, a stream with a 7Q2 flow of less than 0.1 cubic feet per second is considered intermittent.

☐ Intermittent w/ perennial pools: An intermittent stream which maintains persistent pools even when flow in the stream is less than 0.1 cubic feet per second.

☒ Perennial: A stream which flows continuously throughout the year. Perennial streams have a 7Q2 equal to or greater than 0.1 cubic feet per second.

☐ Designated or unclassified tidal stream: A stream that is tidally influenced. If you checked this box, you will need to contact the Water Quality Standards Group and evaluate whether or not a bathing beach is located along the tidal stream and whether or not a bathing beach is located along the estuary, bay or Gulf water that the tidal stream flows into.

3. Streamflow

Use USGS gage data (if a gage is located at a site or within a quarter mile of a site) or use the Stream Flow (Discharge) Measurement Form and follow the procedures outlined in the most recent TCEQ Surface Water Quality Monitoring Procedures, Volume 1, RG-415. If USGS gage data is used for a site, include that information as an attachment and list the streamflow on the sampling date below. If the stream flow taken at one site is representative of the flow at another site(s), then that flow can be used as the observed flow and should be documented below. If the stream flow measured at one site is different from another site, then stream flow should be taken at both sites. ____ cfs

4. Water Quality Data (Field Parameters)

Field parameters should be collected in accordance with the procedures outlined in the most recent TCEQ Surface Water Quality Monitoring Procedures, Volume 1.

Air Temp 32.5 °C Water Temp 30 °C Secchi 0.164 m

5. Riparian Zone (Mark dominant categories with L (Left Bank) and R (Right Bank). Bank orientation is determined by the investigator facing downstream.)

L,R Forest	____ Urban	____ Rip rap
____ Shrub dominated corridor	____ Pasture	____ Concrete
____ Herbaceous marsh	____ Row crops	Other (specify): ____
____ Mowed/maintained corridor	____ Denuded/Eroded bank	

6. Ease of bank access to the water body: ☒ Easy ☐ Moderately easy ☐ Moderately difficult ☐ Difficult

7. Please describe access opportunities or explain why the site is not easily accessible (Attach photos for documentation): one access point to water under bridge, muddy but easy slope

8. Dominant Primary Substrate

☐ Cobble ☐ Sand ☐ Silt ☒ Mud/Clay ☐ Gravel ☐ Bedrock ☐ Rip rap ☐ Concrete

E TB 7/1 QC JB 7/1

Field Data Sheets – Basic RUAA Survey

Stream Name: Navasota River below Lake Limestone Site: 14
Date: 6/25/10 Time: 1438-1500

B. Primary Contact Water Recreation Evaluation:
- Primary contact recreation draft definition: Water recreation activities, such as wading by children, swimming, water skiing, diving, tubing, surfing, and whitewater kayaking, canoeing, and rafting, involving a significant risk of ingestion of water.

1. Were water recreation activities that involve a significant risk of ingestion (full body immersion) observed at this site?
☐ Yes ☒ No primary contact recreation activities were observed
a. Check the following boxes of primary contact recreation activities observed at the time of the sampling event at the site (Attach photos of the activities or lack of activities).

☐ Wading-Children	☐ Tubing	☒ No primary contact activities that commonly occur were observed
☐ Wading-Adults	☐ Surfing	
☐ Swimming	☐ Whitewater-kayaking, canoeing, rafting	
☐ Water skiing	☐ Other: _____	
☐ Diving	☐ frequent public swimming-created by publicly owned land or commercial operations	

b. Check the number of individuals observed at the site: ☒ None ☐ 1-10 ☐ 11-20 ☐ 20-50 ☐ greater than 50

c. Check the following that apply regarding the individuals proximity to the water body.
☐ Water in mouth or nose of the individual ☐ Primary touch: Individual's body (or portion) immersed in water
☐ Secondary touch: fishing, pets and related contact with water ☐ Individual is in a boat touching water
☐ Individual is on shore near water within 8 meters (25ft) of water ☐ Individual is well away from water between 8 and 30 meters (100 ft) ☒ Not applicable

2. If primary contact recreation activities are not observed, describe the physical characteristics of the water body that may hinder the frequency of primary contact (depth, etc.) (Attach photos, etc. for documentation).
potential debris in water (trees) turbid water, steep banks (except 1 access point) fast flowing water overgrown banks

3. Describe if there is public access (e.g. parks, roads, etc.) (Attach photos, maps, etc. for documentation).
gravel drive from Highway to under bridge. plenty of parking.

4. Is an area with primary contact recreation activities or a bathing beach (e.g. state/local parks with swimming, etc.) located near (e.g. within 5 miles upstream and downstream) this site? NO

C. Secondary Contact Water Recreation Evaluation:
- Secondary contact recreation 1: Water recreation activities, such as fishing, commercial and recreational boating, and limited body contact incidental to shoreline activity, not involving a significant risk of water ingestion and that commonly occur.
- Secondary contact recreation 2: Water recreation activities, such as fishing, commercial and recreational boating, and limited body contact incidental to shoreline activity, not involving a significant risk of water ingestion but that occur less frequently than for secondary contact recreation 1 due to (1) physical characteristics of the water body and/or (2) limited public access.

1. Were water recreation activities observed at the site, but the nature of the recreation does not involve a significant risk of ingestion (e.g. secondary contact recreation activities)? ☐ Yes ☒ No secondary contact recreation activities were observed
a. Check the following boxes of secondary contact recreation activities that were observed at the time of the sampling event at the site (Attach photos of activities or lack of activities).
☐ Fishing
☐ Boating-commercial, recreational
☐ Non-whitewater-kayaking, rafting, canoeing
☒ No secondary contact recreation activities were observed
☐ Other secondary contact activities: _____

Field Data Sheets – Basic RUAA Survey

Stream Name Navasota River below Lake Limestone Site: 14
Date: 6/25/10 Time: 1435 - 1500

b. Check the number of individuals observed at the site.
☒ None ☐ 1-10 ☐ 11-20 ☐ 20-50 ☐ greater than 50

c. Check the following that apply regarding the individuals proximity to the water body.
☐ Secondary touch: fishing, pets and related contact with water ☐ In a boat touching water
☐ Body on shore near water within 8 meters (25ft) of water ☐ Body well away from water between 8 and 30 meters (100 ft)

N/A

2. If secondary contact recreation activities are not observed, describe the physical characteristics of the water body that may hinder the frequency of secondary contact (Attach photos, etc. for documentation).

Same

3. If secondary contact recreation activities are observed, how often do water recreational activities occur that do not involve a significant risk of water ingestion? ☐ frequently ☐ infrequently
Please describe how often the activities occur? ☒ Unknown ☐ Never ☐ Daily ☐ Monthly ☐ Yearly

4. If infrequently, what is the reason? ☐ physical characteristics of the water body ☐ limited public access ☐ other
If other, list reasons: _____

5. Describe the physical characteristics of the water body that hinders the frequency of secondary contact recreation (depth, etc.) (Attach photos or depth measurements, etc. for documentation).

Same

6. Describe why there is limited public access (e.g. lack of roads, river or stream banks overgrown, etc.) (Attach photos, maps, etc. for documentation).

Same

D. Noncontact Recreation Evaluation

Noncontact recreation applies to water bodies where recreation activities do not involve a significant risk of water ingestion, and where primary and secondary contact recreation uses do not occur because of unsafe conditions, such as barge traffic.

1. Provide site-specific information and documentation (including photographs) regarding unsafe conditions, recreation activities, and presence or absence of water recreation activities.

Field Data Sheets – Basic RUAA Survey

Stream Name: Navasota River below Lake Limestone Site: 14
Date: 6/25/10 FDS Page 3 of 8 Time: 1438 - 1500

E. Stream Channel and Substantial Pools
Please check the following which best describes the river or stream: ☐ Wadeable ☒ Non-wadeable

1. Wadeable Streams N/A
Determine whether or not the average depth at the thalweg is greater than 0.5 meters and if there are substantial pools with a depth of 1 meter or greater. Walk an approximately 300 meter reach (total) at the site and take the following measurements within the 300 meter reach. Measurements should be taken during base flow conditions (sustained or typical dry, warm-weather flows between rainfall events, excluding unusual antecedent conditions of drought or wet weather

Also, take photos facing upstream, downstream, left bank, and right bank at the 30 meters, 150 meters, and 300 meters.
Photos #s (30 meters) Upstream____ Downstream____ Left Bank ____ Right Bank____
Photos #s (150 meters) Upstream____ Downstream____ Left Bank ____ Right Bank____
Photos #s (300 meters) Upstream____ Downstream____ Left Bank ____ Right Bank____

a) Substantial pools - Measure the length of each pool (if > 10 pools only measure 10 pools), the width (at the widest point), and the deepest depth. A substantial pool is considered a pool greater than 10 meters in length for the purposes of a Basic RUAA Survey. If depth and/or width measurements were not attainable, explain why.

	Length (meters)	Width (meters)	Depth (meters)
Pool 1			
Pool 2			
Pool 3			
Pool 4			
Pool 5			
Pool 6			
Pool 7			
Pool 8			
Pool 9			
Pool 10			

b)Average depth at the thalweg –Take depth measurements approximately every 30 meters to calculate an average depth at the thalweg (at least 10 measurements needed). If depth and/or width measurements were not attainable, explain why.

Distance	Depth (meters)
30 meters	
60 meters	
90 meters	
120 meters	
150 meters	
180 meters	
210 meters	
240 meters	
270 meters	
300 meters	
Average	

Field Data Sheets – Basic RUAA Survey

Stream Name Navasota river below Lake Limestone Site: 14
Date: 6/25/10 Time: 1438 - 1500

c) Stream width - Measure (1) the width at one point which represents the typical average width of the 300 meter reach; (2) the width at the narrowest point of the stream within the 300 meter reach; and (3) the width at the widest point of the stream within the 300 meter reach.

Measurement Type	Width (meters)
Typical Average Width of 300 meter reach	
Width at narrowest point of the stream within 300 meter reach	
Width at the widest point of the stream within 300 meter reach	

d) Is there sufficient water within a 300 meter stream reach during base flow conditions to support primary contact recreation? ☒ Yes ☐ No
COMMENTS:

2. Non-wadeable Streams
If accessible, take 10 width measurements which represent typical widths of the 300 meter reach. If the water is too deep and not accessible record the estimated average width of the water body.

Also, take photos facing upstream, downstream, left bank, and right bank at .
Photos #s (30 meters) Upstream ✓ Downstream ✓ Left Bank ✓ Right Bank ✓ 3
Photos #s (150 meters) Upstream ✓ Downstream ✓ Left Bank ✓ Right Bank ✓ 2
Photos #s (300 meters) Upstream ✓ Downstream ✓ Left Bank ✓ Right Bank ✓ 1

# Measurements	Width (meters)
1	
2	
3	
4	
5	
6	
7	
8	30m
9	23m
10	29m

Navasota **Field Data Sheets – Basic RUAA Survey**

Stream Name River below lake Limestone Site: 14

Date: 6/25/10 Time: 1438-1500

F. Additional RUAA Information

1. Check the following activities observed over the site reach.

- ☐ Drinking or water in mouth
- ☐ Bathing
- ☐ Walking
- ☐ Jogging/running
- ☐ Bicycling
- ☐ Standing
- ☐ Sitting
- ☐ Lying down/sleeping
- ☐ Playing on shoreline
- ☐ Picnicking
- ☐ Motorcycle/ATV
- ☐ Hunting/Trapping
- ☐ Wildlife watching
- ☒ None
- ☐ Other: _____

2. Are there permanent or long-term hydrologic modifications that are constructed and operated in a way that affects the recreational uses? ☐ Yes ☒ No (If yes, please provide supporting documentation and photos.)

Comments: _____

3. Check any channel obstructions that apply (Attach photos).

- ☐ Culverts
- ☐ Barbed wire
- ☐ Utility pipe
- ☐ Fences
- ☐ Dams
- ☐ Other (specify): _____
- ☐ Log jams
- ☐ Thick vegetation
- ☐ Rip rap
- ☐ Low bridges
- ☐ Water control structure
- ☒ None

4. Check all surrounding conditions that promote recreational activities (Attach photos of evidence or unusual items of interest).

- ☐ Campgrounds
- ☐ Playgrounds
- ☐ Rural area
- ☐ Residential
- ☐ National forests
- ☐ Urban/suburban location
- ☐ Golf Course
- ☐ Sports Field
- ☐ Stairs/walkway
- ☐ Boating access (ramps)
- ☐ Beach
- ☒ Bridge crossing
- ☐ Commercial boating
- ☒ Trails/paths (hiking/biking)
- ☐ Paved parking lot
- ☒ Unimproved parking lot
- ☒ Roads (paved/unpaved)
- ☒ Populated area
- ☐ Docks or rafts
- ☐ Commercial outfitter
- ☐ Nearby school
- ☐ Power Line Corridor
- ☐ Parks (national/city/county/state)
- ☐ Public Property
- ☐ Other: _____
- ☐ None of the Above

Comments: _____

5. Check all surrounding conditions that impede recreational activities (Attach photos of evidence or unusual items of interest).

- ☐ Private Property
- ☐ No trespass sign
- ☐ Wildlife
- ☒ Steep slopes
- ☐ No public access
- ☐ No roads
- ☐ Fence
- ☐ Barge/ship traffic
- ☐ Industrial
- ☒ None of the Above
- ☐ Other: _____

Comments: _____

6. Check any indications of human use (Attach photos).

- ☒ Roads
- ☐ Rope swings
- ☐ Dock/platform
- ☒ Foot paths/prints
- ☐ Other: _____
- ☒ RV/ATV Tracks
- ☐ Camping Sites
- ☐ Fire pit/ring
- ☐ Fishing Tackle
- ☐ NPDES Discharge
- ☐ Gates on corridor
- ☒ Children's toys
- ☐ Remnant's of Kid's play
- ☐ Organized event
- ☐ No Human Presence

Comments: string/small rope hanging from under bridge, possibly for stringing fish.

Navasota **Field Data Sheets – Basic RUAA Survey**

Stream Name: river below Lake Limestone Site: 14

Date: 6/25/10 Time: 1438 - 1500

7. Check all water characteristics that apply (Attach photos).

Aquatic Vegetation: X absent ☐ rare ☐ common ☐ abundant

Algae Cover: X absent ☐ rare ☐ common ☐ abundant

Odor: X none ☐ rare ☐ common ☐ abundant

Color: ☐ clear ☐ green ☐ red X brown ☐ black

Bottom Deposit: X sludge ☐ solids ☐ fine sediments ☐ none ☐ other

Water Surface: X clear ☐ scum ☐ foam ☐ debris ☐ oil

Other:

8. Vertebrates Observed within 300 meter reach

Snakes	X None	☐ slight presence	☐ moderate presence	☐ large presence
Water Dependent Birds	X None	☐ slight presence	☐ moderate presence	☐ large presence
Alligators	X None	☐ slight presence	☐ moderate presence	☐ large presence

Comments:

9. Mammals Observed within 300 meter reach

Wild	X None	☐ slight presence	☐ moderate presence	☐ large presence
Domesticated Pets	X None	☐ slight presence	☐ moderate presence	☐ large presence
Livestock	X None	☐ slight presence	☐ moderate presence	☐ large presence
Feral Hogs	X None	☐ slight presence	☐ moderate presence	☐ large presence

Comments:

10. Evidence of wild animals or evidence of birds, cattle, hogs, etc.

X Tracks ☐ Fecal droppings ☐ Bird nests Raccoon

11. Garbage Observed

Large garbage in the channel	X None	☐ Rare	☐ Common	☐ Abundant
Small garbage in the channel	X None	☐ Rare	☐ Common	☐ Abundant
Bank Garbage	☐ None	☐ Rare	X Common	☐ Abundant

Briefly describe the kinds of garbage observed: fishing lure packaging, ice bags, beer cans, water bottles, doll

12. Is the site located in a wildlife preserve with large wildlife (i.e waterfowl) population? ☐ Yes X No

13. Please document any other relevant information regarding recreational activities and the water body in general (for example, area outside of the stream reach evaluated).

- "life size doll" pictured. frightening at first sight.

Field Data Sheet - Basic RUAA Survey

Stream Flow (Discharge) Measurement

Stream: Nawasota river below lake Limestone Date: 6/25/10

Site: 14 Site

Description: SH 6 @ Nawasota

Time Begin: _____ Time End: _____ Meter Type: Sontek Flowtracker

Observers: _____ Stream Width*: _____ Section Width (W): _____

Observations: _____

Section Midpoint (ft) (m)	Section Depth (ft) (m) (cm) (D)	Observational Depth** (ft)(m)	Velocity (V)		Flow (Q) (m^3/s) (ft^3/s) Q = (W)(D)(V)
			At Point (ft/s)(m/s)	Average (ft/s)(m/s)	

No Flow

Too deep

"Fast moving water"

Field Data Sheets – Basic RUAA Survey

(should be completed for each site)

Data Collectors & Contact Information: J. Wrast, M. Shepard, R. Thompson, L. Benavides	
Date & Time: 6/25/10 1340 - 1416	County Name: Grimes / Brazos
Stream Name: Navasota river below lake Limestone	
Segment No. or nearest downstream Segment No.: 1209	
Description of Site: SH 105 @ Navasota	

At any point during the Basic RUAA Survey it becomes apparent that primary contact recreation is clearly the use for the water body the investigator should stop conducting the UAA.

A. Stream Characteristics:

1. Check the following channel flow status that applies.

☐ dry ☐ no flow ☐ low ☒ normal ☐ high ☐ flooded

2. Check the following stream type that applies on the day of the survey:

Ephemeral: A stream which flows only during or immediately after a rainfall event, and contains no refuge pools capable of sustaining a viable community of aquatic organisms.

☐ Intermittent: A stream which has a period of zero flow for at least one week during most years. Where flow records are available, a stream with a 7Q2 flow of less than 0.1 cubic feet per second is considered intermittent.

☐ Intermittent w/ perennial pools: An intermittent stream which maintains persistent pools even when flow in the stream is less than 0.1 cubic feet per second.

☒ Perennial: A stream which flows continuously throughout the year. Perennial streams have a 7Q2 equal to or greater than 0.1 cubic feet per second.

☐ Designated or unclassified tidal stream: A stream that is tidally influenced. If you checked this box, you will need to contact the Water Quality Standards Group and evaluate whether or not a bathing beach is located along the tidal stream and whether or not a bathing beach is located along the estuary, bay or Gulf water that the tidal stream flows into.

3. Streamflow

Use USGS gage data (if a gage is located at a site or within a quarter mile of a site) or use the Stream Flow (Discharge) Measurement Form and follow the procedures outlined in the most recent TCEQ Surface Water Quality Monitoring Procedures, Volume 1, RG-415. If USGS gage data is used for a site, include that information as an attachment and list the streamflow on the sampling date below. If the stream flow taken at one site is representative of the flow at another site(s), then that flow can be used as the observed flow and should be documented below. If the stream flow measured at one site is different from another site, then stream flow should be taken at both sites. _____ cfs

4. Water Quality Data (Field Parameters)

Field parameters should be collected in accordance with the procedures outlined in the most recent TCEQ Surface Water Quality Monitoring Procedures, Volume 1.

Air Temp 32.5 °C Water Temp 29.5 °C Secchi 0.134 m

5. Riparian Zone (Mark dominant categories with L (Left Bank) and R (Right Bank). Bank orientation is determined by the investigator facing downstream.)

L/R Forest	_____ Urban	_____ Rip rap
_____ Shrub dominated corridor	_____ Pasture	_____ Concrete
_____ Herbaceous marsh	_____ Row crops	Other (specify): _____
_____ Mowed/maintained corridor	_____ Denuded/Eroded bank	

6. Ease of bank access to the water body: ☐ Easy ☐ Moderately easy ☒ Moderately difficult ☐ Difficult

7. Please describe access opportunities or explain why the site is not easily accessible (Attach photos for documentation): place to park under bridge, steep banks w/ soft mud.

8. Dominant Primary Substrate

☐ Cobble ☐ Sand ☐ Silt ☒ Mud/Clay ☐ Gravel ☐ Bedrock ☐ Rip rap ☐ Concrete

E TB 7/1 QC TB 7/1

Field Data Sheets – Basic RUAA Survey

Stream Name Navasota river below lake Limestone Site: 15
Date: 6/25/10 Time: 1340-1416

B. Primary Contact Water Recreation Evaluation:
- Primary contact recreation draft definition: Water recreation activities, such as wading by children, swimming, water skiing, diving, tubing, surfing, and whitewater kayaking, canoeing, and rafting, involving a significant risk of ingestion of water.

1. Were water recreation activities that involve a significant risk of ingestion (full body immersion) observed at this site?
☐ Yes ☒ No primary contact recreation activities were observed
a. Check the following boxes of primary contact recreation activities observed at the time of the sampling event at the site (Attach photos of the activities or lack of activities).

☐ Wading-Children	☐ Tubing	☒ No primary contact activities that commonly occur were observed
☐ Wading-Adults	☐ Surfing	
☐ Swimming	☐ Whitewater-kayaking, canoeing, rafting	
☐ Water skiing	☐ Other: _____	
☐ Diving	☐ frequent public swimming-created by publicly owned land or commercial operations	

b. Check the number of individuals observed at the site: ☒ None ☐ 1-10 ☐ 11-20 ☐ 20-50 ☐ greater than 50

c. Check the following that apply regarding the individuals proximity to the water body.
☐ Water in mouth or nose of the individual ☐ Primary touch: Individual's body (or portion) immersed in water
☐ Secondary touch: fishing, pets and related contact with water ☐ Individual is in a boat touching water
☐ Individual is on shore near water within 8 meters (25ft) of water ☐ Individual is well away from water between 8 and 30 meters (100 ft) ☒ Not applicable

2. If primary contact recreation activities are not observed, describe the physical characteristics of the water body that may hinder the frequency of primary contact (depth, etc.) (Attach photos, etc. for documentation). Steep/slippery banks, turbid water, fast moving water, concrete debris in water.

3. Describe if there is public access (e.g. parks, roads, etc.) (Attach photos, maps, etc. for documentation). under bridge, w/ worn tire tracks. and foot path to the water.

4. Is an area with primary contact recreation activities or a bathing beach (e.g. state/local parks with swimming, etc.) located near (e.g. within 5 miles upstream and downstream) this site? no

C. Secondary Contact Water Recreation Evaluation:
- Secondary contact recreation 1: Water recreation activities, such as fishing, commercial and recreational boating, and limited body contact incidental to shoreline activity, not involving a significant risk of water ingestion and that commonly occur.
- Secondary contact recreation 2: Water recreation activities, such as fishing, commercial and recreational boating, and limited body contact incidental to shoreline activity, not involving a significant risk of water ingestion but that occur less frequently than for secondary contact recreation 1 due to (1) physical characteristics of the water body and/or (2) limited public access.

1. Were water recreation activities observed at the site, but the nature of the recreation does not involve a significant risk of ingestion (e.g. secondary contact recreation activities)? ☐ Yes ☒ No secondary contact recreation activities were observed
a. Check the following boxes of secondary contact recreation activities that were observed at the time of the sampling event at the site (Attach photos of activities or lack of activities).
☐ Fishing
☐ Boating-commercial, recreational
☐ Non-whitewater-kayaking, rafting, canoeing
☒ No secondary contact recreation activities were observed
☐ Other secondary contact activities: _____

Field Data Sheets – Basic RUAA Survey

Stream Name Navasota river below lake Limestone Site: 15
Date: 6/25/10 Time: 1340-~~1410~~ 1416

b. Check the number of individuals observed at the site.
X None ☐ 1-10 ☐ 11-20 ☐ 20-50 ☐ greater than 50

c. Check the following that apply regarding the individuals proximity to the water body.
☐ Secondary touch: fishing, pets and related contact with water ☐ In a boat touching water
☐ Body on shore near water within 8 meters (25ft) of water ☐ Body well away from water between 8 and 30 meters (100 ft)

NA

2. If secondary contact recreation activities are not observed, describe the physical characteristics of the water body that may hinder the frequency of secondary contact (Attach photos, etc. for documentation).

Same

3. If secondary contact recreation activities are observed, how often do water recreational activities occur that do not involve a significant risk of water ingestion? ☐ frequently ☐ infrequently
Please describe how often the activities occur? X Unknown ☐ Never ☐ Daily ☐ Monthly ☐ Yearly

4. If infrequently, what is the reason? ☐ physical characteristics of the water body ☐ limited public access ☐ other
If other, list reasons: _____

5. Describe the physical characteristics of the water body that hinders the frequency of secondary contact recreation (depth, etc.) (Attach photos or depth measurements, etc. for documentation).

Same

6. Describe why there is limited public access (e.g. lack of roads, river or stream banks overgrown, etc.) (Attach photos, maps, etc. for documentation).

Same

D. Noncontact Recreation Evaluation

Noncontact recreation applies to water bodies where recreation activities do not involve a significant risk of water ingestion, and where primary and secondary contact recreation uses do not occur because of unsafe conditions, such as barge traffic.

1. Provide site-specific information and documentation (including photographs) regarding unsafe conditions, recreation activities, and presence or absence of water recreation activities.

Field Data Sheets – Basic RUAA Survey

Stream Name: Navasota River below lake Limestone Site: 15
Date: 6/23/10 ~~FDS Page 3 of 8~~ Time: 1340 - 1416

E. Stream Channel and Substantial Pools
Please check the following which best describes the river or stream: X Wadeable X Non-wadeable

1. Wadeable Streams N/A
Determine whether or not the average depth at the thalweg is greater than 0.5 meters and if there are substantial pools with a depth of 1 meter or greater. Walk an approximately 300 meter reach (total) at the site and take the following measurements within the 300 meter reach. Measurements should be taken during base flow conditions (sustained or typical dry, warm-weather flows between rainfall events, excluding unusual antecedent conditions of drought or wet weather

Also, take photos facing upstream, downstream, left bank, and right bank at the 30 meters, 150 meters, and 300 meters.
Photos #s (30 meters) Upstream____ Downstream____ Left Bank ____ Right Bank____
Photos #s (150 meters) Upstream____ Downstream____ Left Bank ____ Right Bank____
Photos #s (300 meters) Upstream____ Downstream____ Left Bank ____ Right Bank____

a) Substantial pools - Measure the length of each pool (if > 10 pools only measure 10 pools), the width (at the widest point), and the deepest depth. A substantial pool is considered a pool greater than 10 meters in length for the purposes of a Basic RUAA Survey. If depth and/or width measurements were not attainable, explain why.

	Length (meters)	Width (meters)	Depth (meters)
Pool 1			
Pool 2			
Pool 3			
Pool 4			
Pool 5			
Pool 6			
Pool 7			
Pool 8			
Pool 9			
Pool 10			

b)Average depth at the thalweg –Take depth measurements approximately every 30 meters to calculate an average depth at the thalweg (at least 10 measurements needed). If depth and/or width measurements were not attainable, explain why.

Distance	Depth (meters)
30 meters	
60 meters	
90 meters	
120 meters	
150 meters	
180 meters	
210 meters	
240 meters	
270 meters	
300 meters	
Average	

Field Data Sheets – Basic RUAA Survey

Stream Name: Navasota River below Lake Limestone Site: 15
Date: 6/25/10 Time: 1310 – 1416

c) Stream width - Measure (1) the width at one point which represents the typical average width of the 300 meter reach; (2) the width at the narrowest point of the stream within the 300 meter reach; and (3) the width at the widest point of the stream within the 300 meter reach.

Measurement Type	Width (meters)
Typical Average Width of 300 meter reach	
Width at narrowest point of the stream within 300 meter reach	
Width at the widest point of the stream within 300 meter reach	

d) Is there sufficient water within a 300 meter stream reach during base flow conditions to support primary contact recreation? ☒ Yes ☐ No
COMMENTS:

2. Non-wadeable Streams
If accessible, take 10 width measurements which represent typical widths of the 300 meter reach. If the water is too deep and not accessible record the estimated average width of the water body.

Also, take photos facing upstream, downstream, left bank, and right bank at .
Photos #s (30 meters) Upstream ✓ Downstream ✓ Left Bank ✓ Right Bank ✓
Photos #s (150 meters) Upstream ✓ Downstream ✓ Left Bank ✓ Right Bank ✓
Photos #s (300 meters) Upstream ✓ Downstream ✓ Left Bank ✓ Right Bank ✓

# Measurements	Width (meters)
1	
2	
3	35m
4	33m
5	28m
6	29m
7	30m
8	32m
9	27m
10	

* Could only access ~180m of stream along bank

Navasota **Field Data Sheets – Basic RUAA Survey**

Stream Name river below lake Limestone Site: 15

Date: 6/25/10 Time: 1340 - 1416

F. Additional RUAA Information

1. Check the following activities observed over the site reach.

- ☐ Drinking or water in mouth
- ☐ Bathing
- ☐ Walking
- ☐ Jogging/running
- ☐ Bicycling
- ☐ Standing
- ☐ Sitting
- ☐ Lying down/sleeping
- ☐ Playing on shoreline
- ☐ Picnicking
- ☐ Motorcycle/ATV
- ☐ Hunting/Trapping
- ☐ Wildlife watching
- ☒ None
- ☐ Other: _____

2. Are there permanent or long-term hydrologic modifications that are constructed and operated in a way that affects the recreational uses? ☐ Yes ☒ No (If yes, please provide supporting documentation and photos.)

Comments: _____

3. Check any channel obstructions that apply (Attach photos).

- ☐ Culverts
- ☐ Barbed wire
- ☐ Utility pipe
- ☐ Fences
- ☐ Dams
- ☒ Other (specify): fallen tree
- ☐ Log jams
- ☐ Thick vegetation
- ☐ Rip rap
- ☐ Low bridges
- Water control structure
- ☐ None

4. Check all surrounding conditions that promote recreational activities (Attach photos of evidence or unusual items of interest).

- ☐ Campgrounds
- ☐ Playgrounds
- ☒ Rural area
- ☐ Residential
- ☐ National forests
- ☐ Urban/suburban location
- ☐ Golf Course
- ☐ Sports Field
- ☐ Stairs/walkway
- ☐ Boating access (ramps)
- ☐ Beach
- ☒ Bridge crossing
- ☐ Commercial boating
- ☒ Trails/paths (hiking/biking)
- ☐ Paved parking lot
- ☐ Unimproved parking lot
- ☒ Roads (paved/unpaved)
- ☐ Populated area
- ☐ Docks or rafts
- ☐ Commercial outfitter
- ☐ Nearby school
- ☐ Power Line Corridor
- ☐ Parks (national/city/county/state)
- ☐ Public Property
- ☐ Other: _____
- ☐ None of the Above

Comments: _____

5. Check all surrounding conditions that impede recreational activities (Attach photos of evidence or unusual items of interest).

- ☐ Private Property
- ☐ No trespass sign
- ☐ Wildlife
- ☒ Steep slopes
- ☐ No public access
- ☐ No roads
- ☐ Fence
- ☐ Barge/ship traffic
- ☐ Industrial
- ☐ None of the Above
- ☐ Other: _____

Comments: _____

6. Check any indications of human use (Attach photos).

- ☒ Roads
- ☐ Rope swings
- ☐ Dock/platform
- ☒ Foot paths/prints
- ☐ Other: _____
- ☐ RV/ATV Tracks
- ☐ Camping Sites
- ☒ Fire pit/ring
- ☒ Fishing Tackle
- ☐ NPDES Discharge
- ☐ Gates on corridor
- ☐ Children's toys
- ☐ Remnant's of Kid's play
- ☐ Organized event
- ☐ No Human Presence

Comments: _____

Navasota **Field Data Sheets – Basic RUAA Survey**

Stream Name River below lake Limestone Site: 15

Date: 6/25/10 Time: 1340 - 1416

7. Check all water characteristics that apply (Attach photos).

Aquatic Vegetation: X absent ☐ rare ☐ common ☐ abundant

Algae Cover: X absent ☐ rare ☐ common ☐ abundant

Odor: X none ☐ rare ☐ common ☐ abundant

Color: ☐ clear ☐ green ☐ red X brown ☐ black

Bottom Deposit: X sludge ☐ solids ☐ fine sediments ☐ none ☐ other

Water Surface: X clear ☐ scum ☐ foam ☐ debris ☐ oil

Other:

8. Vertebrates Observed within 300 meter reach

Snakes	X None	☐ slight presence	☐ moderate presence	☐ large presence
Water Dependent Birds	X None	☐ slight presence	☐ moderate presence	☐ large presence
Alligators	X None	☐ slight presence	☐ moderate presence	☐ large presence

Comments:

9. Mammals Observed within 300 meter reach

Wild	X None	☐ slight presence	☐ moderate presence	☐ large presence
Domesticated Pets	X None	☐ slight presence	☐ moderate presence	☐ large presence
Livestock	X None	☐ slight presence	☐ moderate presence	☐ large presence
Feral Hogs	X None	☐ slight presence	☐ moderate presence	☐ large presence

Comments:

10. Evidence of wild animals or evidence of birds, cattle, hogs, etc.

X Tracks ☐ Fecal droppings ☐ Bird nests

11. Garbage Observed

Large garbage in the channel	X None	☐ Rare	☐ Common	☐ Abundant
Small garbage in the channel	X None	☐ Rare	☐ Common	☐ Abundant
Bank Garbage	☐ None	☐ Rare	X Common	☐ Abundant

Briefly describe the kinds of garbage observed: food containers, beer cans boards, bait containers

12. Is the site located in a wildlife preserve with large wildlife (i.e waterfowl) population? ☐ Yes X No

13. Please document any other relevant information regarding recreational activities and the water body in general (for example, area outside of the stream reach evaluated).

Field Data Sheet - Basic RUAA Survey

Stream Flow (Discharge) Measurement

Stream: Navasota River below lake Limestone Date: 6/25/10

Site: 15 Site

Description: SH 105 @ Navasota

Time Begin: Time End: Meter Type: Sontek Flowtracker

Observers: Stream Width*: Section Width (W):

Observations:

Section Midpoint (ft) (m)	Section Depth (ft) (m) (cm) (D)	Observational Depth** (ft)(m)	Velocity (V)		Flow (Q) (m^3/s) (ft^3/s) Q = (W)(D)(V)
			At Point (ft/s)(m/s)	Average (ft/s)(m/s)	

No Flow and Too Deep

No way to do flow but