

Recreational Use Attainability Analysis of Bullhead Bayou (Segment 1245C) and Unnamed
Tributary of Bullhead Bayou (Segment 1245D)

Appendix 2

Field Data Sheets

1

Field Data Sheets – Basic RUAA Survey

(should be completed for each site)

Data Collectors & Contact Information:	L. Ray, R. Condra, R. Thompson, L. Benavides
Date & Time:	7/5/2010 09:17-09:30 County Name: Fort Bend
Stream Name:	Bullhead Bayou
Segment No. or nearest downstream Segment No.:	1245C
Description of Site:	Plantation Dr. Crossing

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. 0.870 cfs 10/29/10

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 34.4 °C Water Temp 28 °C Secchi 0.243 m

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

- | | | |
|---|--|-----------------------------------|
| <input type="checkbox"/> Forest | <input type="checkbox"/> Urban | <input type="checkbox"/> Rip rap |
| <input type="checkbox"/> Shrub dominated corridor | <input type="checkbox"/> Pasture | <input type="checkbox"/> Concrete |
| <input type="checkbox"/> Herbaceous marsh | <input type="checkbox"/> Row crops | Other (specify): _____ |
| <u>R, L</u> <input checked="" type="checkbox"/> Mowed/maintained corridor | <input type="checkbox"/> 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):

Easily accessible, parking lot nearby and a strip mall, fence across creek @ 150 m makes it not accessible for

8. Dominant Primary Substrate

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

Very far, NEAR A PRISON

DC GP EKC

Field Data Sheets – Basic RUAA Survey

Stream Name: Bullhead Bayou Date: 7/15/2010 0917 Site: 0917-0950

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, Secondary touch: fishing, pets and related contact with 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), Primary touch: Individual's body (or portion) immersed in water, Individual is in a boat touching water, 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).

This is a drainage ditch, muddy, shallow,

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

Must, to strip mall, sports complex, paved parking lot

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 KC 7/16/10

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 Bullhead Bayou Site: 1
Date: 7/5/2010 Time: 0917-0950

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.

N/A

Field Data Sheets – Basic RUAA Survey

Stream Name Bullhead Bayou Site: 1
 Date: 7/5/2010 FDS Page 3 of 8 0917-0950

E. Stream Channel 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	30 PLS (2) .5 ft 0.1524 m
180 meters	60 .65 ft 0.19812 m
210 meters	90 1.1 ft 0.33528 m
240 meters	120 .6 ft 0.18288 m
270 meters	130 .5 m ft 0.15 m
300 meters	180 PLS (1) .1 m ft 0.03 m
Average	0.18 m

*are pictures
 300m is → 150
 and 150m → 30*

Field Data Sheets – Basic RUA Survey

Stream Name Bullhead Bayou Site: 1
 Date: 7/5/2010 Time: 0917-0950

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	8.6 ft	2.62 m
Width at narrowest point of the stream within 300 meter reach	5.1 ft	1.55 m
Width at the widest point of the stream within 300 meter reach	15.2 ft	4.63 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

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 RUA Survey

Stream Name Bull head Bayou Site: 2
 Date: 7/5/2010 Time: 0917-0950

F. Additional RUA 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: Culverts

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

Comments: _____

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

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

Comments: _____

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

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

Other: Lawnmower tracks Fireworks
 Comments: _____

Field Data Sheets – Basic RUA Survey

Stream Name Bullhead Bayou Site: 1
 Date: 7/5/2010 Time: 09:17 ~ 09:50

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: _____

*1 snake or
ducks
Turtle*

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: cups, plastic bags

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 Sheets – Basic RUAA Survey
(should be completed for each site)

2

Data Collectors & Contact Information:	L. Ray, K. Conrad, L. Benavides, R. Thompson
Date & Time:	7/5/2010 1012-1051 County Name: Fort Bend
Stream Name:	Bullhead Bayou
Segment No. or nearest downstream Segment No.:	1245A 1245C
Description of Site:	Crossing of SH 99 / Grand Pkwy

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. 1.795 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 31.6 °C Water Temp 29 °C Secchi 0.25 m

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

- | | | |
|--|--|-----------------------------------|
| <input type="checkbox"/> Forest | <input type="checkbox"/> Urban | <input type="checkbox"/> Rip rap |
| <input type="checkbox"/> Shrub dominated corridor | <input type="checkbox"/> Pasture | <input type="checkbox"/> Concrete |
| <input type="checkbox"/> Herbaceous marsh | <input type="checkbox"/> Row crops | Other (specify): _____ |
| <u>R/L</u> <input checked="" type="checkbox"/> Mowed/maintained corridor | <input type="checkbox"/> 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):

Bridge crossing with low bank to creek. Have to park on the shoulder

8. Dominant Primary Substrate

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

E RC OC 50

Field Data Sheets – Basic RUAA Survey

Stream Name: Bayou Bullhead Bayou Site: 2
Date: 7/5/2010 Time: 1012-1051

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, Secondary touch: fishing, pets and related contact with 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).

The creek is shallow and muddy, have to park on the shoulder of a busy road (Grand Parkway)

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 KC 7/16/10

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 Billhead Bayou Site: 2
Date: 7/5/2010 Time: 1012-1051

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: 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 Bayou Bullhead Bayou Site: 2
 Date: 7/5/2010 FDS Page 3 of 8 1012-1051

E. Stream Channel 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	0.45 ft	0.14 m
60 meters	1.15	0.35
90 meters	1.3	0.40
120 meters	1.4	0.43
150 meters	1.4	0.43
180 meters	1.3	0.40
210 meters	1.3	0.40
240 meters	1.25	0.38
270 meters	1.2	0.37
300 meters	1.15 ft	0.35
Average		0.37 m

Field Data Sheets – Basic RUAA Survey

Stream Name Bullhead Bayou Site: 2
 Date: 7/5/2010 Time: 1012-1051

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	4m
Width at narrowest point of the stream within 300 meter reach	2.5m
Width at the widest point of the stream within 300 meter reach	6m

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

COMMENTS:
Too shallow for swimming or fishing.

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 Bullhead Bayou Site: 2
 Date: 7/5/2010 Time: 1012-1051

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 Bullhead Bayou Site: 21
 Date: 7/5/2010 Time: 1012-1051

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

Whistling Ducks

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: Bull head Bayou Date: 7/5/2010
 Site: 2 Site
 Description: Crossing of st 99 / Grand Prairie
 Time Begin: 0100 Time End: 1046 Meter Type: Son Tek Flowtracker
 Observers: K. Candra, L. Ray Stream Width*: 20 Section Width (W): 1.0
 Observations: _____

Section Midpoint (ft)(m)	Section Depth (ft)(m) (cm) (D)	Observational Depth** (ft)(m)	Velocity (V)		Flow (Q) (m³/s)(ft³/s) Q = (W)(D)(V)
			At Point (ft/s)(m/s)	Average (ft/s)(m/s)	
0.5	0.4			0.07	0.028
1.5	0.7			0.11	0.077
2.5	0.8			0.12	0.096
3.5	0.9			0.13	0.117
4.5	1.05			0.14	0.147
5.5	1.15			0.16	0.069
6.5	1.25			0.13	0.163
7.5	1.20			0.12	0.144
8.5	1.15			0.15	0.173
9.5	1.10			0.13	0.143
10.5	1.10			0.11	0.121
11.5	0.90			0.11	0.099
12.5	0.80			0.11	0.088
13.5	0.90			0.10	0.090
14.5	0.85			0.08	0.068
15.5	0.80			0.07	0.056
16.5	0.90 0.80 ^{14/10}			0.05	not negative ^{14/10}
17.5	0.65			0.08	0.052
18.5	0.50			0.05	0.025
19.5	0.0 0.2 ^{14/10}			-0.00	0.000

Total Q = ~~1.786~~
1.795 cfs

3

Field Data Sheets – Basic RUAA Survey
(should be completed for each site)

Data Collectors & Contact Information:	L. Ray, K. Conda, R. Thompson, L. Benavonides		
Date & Time:	11/10 1056-1122	County Name:	Fort Bend
Stream Name:	Bullhead Bayou		
Segment No. or nearest downstream Segment No.:	1245C		
Description of Site:	crossing of US 96		

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. 4.098 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 36.2 °C Water Temp 31 °C Secchi 0.492 m

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

<input type="checkbox"/> Forest	<input type="checkbox"/> Urban	<input type="checkbox"/> Rip rap
<input type="checkbox"/> Shrub dominated corridor	<input type="checkbox"/> Pasture	<input type="checkbox"/> Concrete
<input type="checkbox"/> Herbaceous marsh	<input type="checkbox"/> Row crops	Other (specify): _____
<input checked="" type="checkbox"/> Mowed/maintained corridor	<input type="checkbox"/> 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):
Bank is easy because it is low, near paved parking lot, skip small, gas station, Houses

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

E
KC
QC
50

Field Data Sheets – Basic RUAA Survey

Stream Name Bull head Bayou Site: 3
Date: 7/15/10 Time: 1056-1122

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).

No real features to hinder Recreation except narrow in spots, and shallow in spots, next to busy road.

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

Next to subdivision, paved parking lot, gas station, 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 N/A NO
KC 7/16/10

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 Bullhead Bayou Site: 3
Date: 7/5/10 Time: 1056-1122

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 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.

N/A

Field Data Sheets – Basic RUAA Survey

Stream Name Bullhead Bayou Site: 3
 Date: 7/5/10 FDS Page 3 of 8 1056-1122

E. Stream Channel 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	1.1 ft	0.34 m
60 meters	1.5	0.46
90 meters	1.2	0.37
120 meters	1.1	0.34
150 meters	1.1	0.34
180 meters	1.1	0.34
210 meters	0.9	0.27
240 meters	1.1	0.34
270 meters	1.1	0.34
300 meters	1.1 ft	0.34 m
Average		0.35 m

Field Data Sheets – Basic RUAA Survey

Stream Name: Bullhead Bayou Site: 3
 Date: 7/5/10 Time: 1056-1122

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	8' 10"	2.47 m
Width at narrowest point of the stream within 300 meter reach	7' 0"	2.13 m
Width at the widest point of the stream within 300 meter reach	14' 8"	4.51 m

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

COMMENTS:
Too shallow and too narrow

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 Bullhead Bayou Site: 3
 Date: 7/5/10 Time: 1056-1122

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: Bullhead Bayou Site: 8
 Date: 7/5/10 Time: 1056-1122

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

*whistling
Ducks*

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: snack bags & wrappers

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).

4

Field Data Sheets – Basic RUAA Survey
(should be completed for each site)

Data Collectors & Contact Information:	L. Ray, K. Condra, L. Benavides, R. Thompson	
Date & Time:	7/5/19 1134-1200	County Name: Fort Bend
Stream Name:	Bullhead Bayou	
Segment No. or nearest downstream Segment No.:	1245C	
Description of Site:	Crossing of University Blvd, 1/4 mile from S#6	

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. 6.042 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

31.4 °C

Water Temp

30 °C Secchi D. 390m

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

- | | | |
|---|--|-----------------------------------|
| <input type="checkbox"/> Forest | <input type="checkbox"/> Urban | <input type="checkbox"/> Rip rap |
| <input type="checkbox"/> Shrub dominated corridor | <input type="checkbox"/> Pasture | <input type="checkbox"/> Concrete |
| <input type="checkbox"/> Herbaceous marsh | <input type="checkbox"/> Row crops | Other (specify): _____ |
| <u>R, L</u> <input checked="" type="checkbox"/> Mowed/maintained corridor | <input type="checkbox"/> 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):

Mowed Bank, near Hilton with paved parking and Remnants of a gravel road go along the bank.

8. Dominant Primary Substrate

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

E
KC
QC
SP

Field Data Sheets – Basic RUAA Survey

Stream Name Bullhead Bayou Site: 4
Date: 7/5/20 Time: 1134-1207

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).

Muddy water, thick vegetation between edge of bank and water

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

Bridge crossing, next to subdivision, and hotel

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 Bullhead Bayou Site: 4
Date: 7/5/10 Time: 1134-1207

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: 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: Bullhead Bayou Site: 4
 Date: 7/15/10 1134-1207
 FDS Page 3 of 8

E. Stream Channel and Substantial Pool

Please check the following which best describes the river or stream: Wadeable Non-wadeable

I. 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)	KL 7/16/10
30 meters	1.65 ft	0.165 m 0.50 m
60 meters	1.6 ft	0.49
90 meters	1.6 ft	0.49
120 meters	1.8 ft	0.55
150 meters	1.85 ft	0.56
180 meters	1.7 ft	0.52
210 meters	1.9 ft	0.58
240 meters	1.75 ft	0.53
270 meters	1.8 ft	0.55
300 meters	1.3 ft	0.4 m
Average		0.52 m

Field Data Sheets – Basic RUAA Survey

Stream Name Bullhead Bayou Site: 4
 Date: 7/5/10 Time: 11:30-12:01

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	6m
Width at narrowest point of the stream within 300 meter reach	1m
Width at the widest point of the stream within 300 meter reach	25m 21 7.68m

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

COMMENTS:
Shallow and narrow

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: Bullhead Bayou Site: 4
 Date: 7/5/10 Time: 1134-1207

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
- Log jams
- Thick vegetation
- Other (specify): _____
- 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: near small airport (Regional)

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: Bullhead Bayou Site: 4
 Date: 7/5/10 Time: 11:34-12:07

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: Herons

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: Cups

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).

S

Field Data Sheets – Basic RUAA Survey

(should be completed for each site)

Data Collectors & Contact Information:	L. Ray, K. Condra, R. Thompson, L. Bongvanides
Date & Time:	7/5/10 1216-1252 County Name: Fort Bend
Stream Name:	Bullhead Bayou
Segment No. or nearest downstream Segment No.:	1245C
Description of Site:	Lexington Blvd above ground portion

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. 10.984 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

29 °C 7/5/10
37.2

Water Temp

29 °C Secchi: 0.904 m

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

- | | | |
|---|--|-----------------------------------|
| <input type="checkbox"/> Forest | <input type="checkbox"/> Urban | <input type="checkbox"/> Rip rap |
| <input type="checkbox"/> Shrub dominated corridor | <input type="checkbox"/> Pasture | <input type="checkbox"/> Concrete |
| <input type="checkbox"/> Herbaceous marsh | <input type="checkbox"/> Row crops | Other (specify): _____ |
| <u>R, L</u> <input checked="" type="checkbox"/> Mowed/maintained corridor | <input type="checkbox"/> 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):

Mowed Bank, Slightly steep, next to subdivision and strip malls

8. Dominant Primary Substrate

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

LR
7/5/10

0.904
50
TKC

Field Data Sheets – Basic RUAA Survey

Stream Name Bullhead Bayou Site: 5
Date: 7/5/10 Time: 1216-1252

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).

It is Relatively shallow; otherwise not many hindrances to wading

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

bridge crossing next to subdivision, storage facility, strip malls with paved 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?

N/A NO
7/16/10

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 Bullhead Bayou Site: 5
Date: 7/5/10 Time: 1216-1252

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: 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 Bullhead Bayou Site: 8
 Date: 7/5/10 FDS Page 3 of 8 12/16-12/20/2

E. Stream Channel and Substantial Pool:

Please check the following which best describes the river or stream: Wadeable Non-wadeable

I. 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	1.7 ft 0.52 m
60 meters	1.9 ft 0.58
90 meters	1.7 ft 0.52
120 meters	2.1 ft 0.79
150 meters	1.3 ft 0.40
180 meters	1.5 ft 0.46
210 meters	1.6 ft 0.49
240 meters	1.5 ft 0.46
270 meters	2.1 ft 0.64
300 meters	2.2 ft 0.67 m
Average	0.56m

Field Data Sheets – Basic RUAA Survey

Stream Name Bullhead Bayou Site: 5
 Date: 7/15/10 Time: 12:16 - 12:52

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	8m
Width at narrowest point of the stream within 300 meter reach	5m
Width at the widest point of the stream within 300 meter reach	9m

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 Bullhead Bayou Site: 5
 Date: 7/5/10 Time: 1216-1252

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
- None
- Water control structure

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: Graffiti on Bridge

Field Data Sheets – Basic RUAA Survey

Stream Name: Bullhead Bayou Site: 5
Date: 7/5/10 Time: 1216 - 1252

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: Herms, 2 Turtles

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: Beer cans, Bottles

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: Bullhead Bayou Date: 7/5/10
 Site: 5 Site
 Description: Lexington Blvd above ground portion
 Time Begin: 1223 Time End: 1250 Meter Type: Son Tech Flowtracker
 Observers: L. Ray, K. Conder Stream Width*: 80.2 Section Width (W): 1.01
 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)	
0.505	0.50			-0.28	-0.141
1.515	1.3			-0.03	-0.039
2.525	1.4			0.41	0.580
3.535	1.2			0.81	0.982
4.545	1.5			1.06	1.602
5.555	1.2			1.05	1.273
6.565	1.4			0.81	1.145
7.575	1.4			0.84	1.188
8.585	1.25			0.66	0.833
9.596	1.30			0.69	0.906
10.605	1.35			0.57	0.777
11.615	1.40			0.40	0.566
12.625	1.80			0.39	0.709
13.635	1.3			0.31	0.407
14.645	1.2			0.16	0.194
15.655	1.2			0.11	0.133
16.665	1.25			-0.02	-0.025
17.675	1.0			-0.05	-0.051
18.685	.75			-0.07	-0.053
19.695	0.30	0.45 LR		-0.01	-0.005
		7/5/10			

Total Q = ~~11.007~~ ^{KE 10/29/10}
10.984 cfs

Field Data Sheets – Basic RUAA Survey

(should be completed for each site)

6

Data Collectors & Contact Information: <u>L. Roy, R. Conder, L. Benavonides, R. Thompson</u>	
Date & Time: <u>7/5/2010 1310-1330</u>	County Name: <u>Fort Bend</u>
Stream Name: <u>Bullhead Bayou</u>	
Segment No. or nearest downstream Segment No.: <u>1245C</u>	
Description of Site: <u>First Colony Athletic Park off Austin Hwy</u>	

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. 0.272 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 33.8 °C Water Temp 30 °C Secchi: 0.08 m

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

<u>L</u> Forest	Urban	Rip rap
Shrub dominated corridor	Pasture	Concrete
Herbaceous marsh	Row crops	Other (specify): _____
<u>R</u> 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):

Park vehicle in First Colony Athletic Park right by bridge, Bank was gently sloped so easy to access

8. Dominant Primary Substrate

Cobble Sand Silt Mud/Clay Gravel Bedrock Rip rap Concrete

Field Data Sheets – Basic RUA Survey

Stream Name: Bullhead Bayou Site: 6
Date: 7/5/10 Time: 1310-1330

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 [checked] 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

b. Check the number of individuals observed at the site: None [checked] 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, Secondary touch: fishing, pets and related contact with 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 Maintenance workers

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)

Too shallow? NARROW in spots; lot of garbage in stream.

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

By golf course and athletic park

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 [checked] 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:

Handwritten initials and marks in the bottom right corner.

Field Data Sheets – Basic RUAA Survey

Stream Name Bullhead Bayou Site: 6
Date: 7/5/10 Time: 1310-1330

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 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: 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 Bullhead Bayou Site: 6
 Date: 7/5/10 FDS Page 3 of 8 1310, 1330

E. Stream Channel 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	0.5 ft	0.15 m
60 meters	0.4	0.12
90 meters	0.55	0.17
120 meters	0.5	0.15
150 meters	0.3	0.09
180 meters	0.5	0.15
210 meters	0.65	0.20
240 meters	0.3	0.09
270 meters	0.7	0.21
300 meters	0.5	0.15 m
Average		0.15 m

1st set of PICS taken at 150m
 2nd set of PICS taken at 30m
 3rd set of PICS taken 300m downstream

Field Data Sheets – Basic RUA Survey

Stream Name Bullhead Bayou Site: 6
 Date: 7/5/10 Time: 1310-1350

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	1.83m
Width at narrowest point of the stream within 300 meter reach	1.13
Width at the widest point of the stream within 300 meter reach	2.50

Handwritten notes: 7/5, 8'2", 5'11", 3.7m

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 Bullhead Bayou Site: 6
 Date: 7/5/10 Time: 1310-1330

F. Additional RUAA Information

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

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

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

Comments: _____

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

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

Comments: _____

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

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

Comments: _____

Field Data Sheets – Basic RUAA Survey

Stream Name Bullhead Bayou Site: 6
 Date: 7/5/10 Time: 1310-1330

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: turtle

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: folding chair, general household trash, plastic, cans, bottles

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 Sheets – Basic RUAA Survey

(should be completed for each site)

Data Collectors & Contact Information:	M. Shepard, M. Franks, R. Thompson, L. Benavides
Date & Time:	6/19/10 1020 - 1050 County Name: Fort Bend
Stream Name:	Mesquite Park @ Unnamed Tributary to Bullhead Bayou
Segment No. or nearest downstream Segment No.:	1245D
Description of Site:	City Park at Mesquite Dr and Windmill St (Mesquite Park)

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. 0.185 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 33.4 °C Water Temp 28 °C secchi: 0.316

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

- | | | |
|---|--|-----------------------------------|
| <input type="checkbox"/> Forest | <u>R,L</u> Urban | <input type="checkbox"/> Rip rap |
| <input type="checkbox"/> Shrub dominated corridor | <input type="checkbox"/> Pasture | <input type="checkbox"/> Concrete |
| <input type="checkbox"/> Herbaceous marsh | <input type="checkbox"/> Row crops | Other (specify): _____ |
| <u>R,L</u> Mowed/maintained corridor | <input type="checkbox"/> 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):

Banks clean & mowed to water's edge for entire 300m, slopes easy

8. Dominant Primary Substrate

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

Field Data Sheets - Basic RUAA Survey

Stream Name: Mesquite Park @ Unnamed Trib Site: 1
Date: 6/19/10 Time: 6:19 1020-1050
7/16/10

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 | <input checked="" type="checkbox"/> 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 too shallow for anything but wading, channel is very narrow

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

Park within neighborhood, but has no parking area. Sidewalks & foot bridge along channel

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 Mesquite Park @ Unnamed Trib Site: 1
Date: 6/19/10 Time: 1020-1050

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) XN/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).

Water too shallow & channel too narrow

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 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 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 Mesquite Park @ Unnamed Trib Site: 1
 Date: 6/19/10 Time: 1020-1050

E. Stream Channel and Substantial Pools Measurements

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			<u>75</u>
Pool 2			<u>5</u>
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	<u>0.21</u> m
60 meters	<u>0.15</u>
90 meters	<u>0.17</u>
120 meters	<u>0.18</u>
150 meters	<u>0.09</u>
180 meters	<u>0.12</u>
210 meters	<u>0.18</u>
240 meters	<u>0.21</u>
270 meters	<u>0.17</u>
300 meters	<u>0.11</u>
Average	<u>0.16</u> m

Field Data Sheets - Basic RUAA Survey

Stream Name Mesquite Park @ Unnamed Trib Site: 1
 Date: 6/19/10 Time: 1020-1050

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	6.3 6.3 ft	1.9 m
Width at narrowest point of the stream within 300 meter reach	6.0 ft	1.8 m
Width at the widest point of the stream within 300 meter reach	6.7 8 ft	2.4 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	

Field Data Sheets – Basic RUAA Survey

Stream Name: Mesquite Park @ unnamed Trib Site: 1
 Date: 6/14/10 Time: 1020-1050

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: There wasn't a walk way to the creek just along it.

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: There was easy access

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: There was graffiti

Field Data Sheets - Basic RUAA Survey

Stream Name Mesquite Park @ Unnamed Trib Site: 1
 Date: 6/19/10 Time: 1020-1050

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).

2

Field Data Sheets – Basic RUAA Survey

(should be completed for each site)

Data Collectors & Contact Information:	M. Shepard, M. Franks, R. Thompson, L. Benavides
Date & Time:	6/19/10 1104- County Name: Fort Bend
Stream Name:	Green Fields Dr @ Unnamed Tributary to Bullhead Bayou
Segment No. or nearest downstream Segment No.:	1245D
Description of Site:	Crossing of Greens Fields Dr

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. 0.133 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 33.1 °C Water Temp 34 °C Secchi 0.206 m

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

- | | | |
|--|--|-----------------------------------|
| <input type="checkbox"/> Forest | <input checked="" type="checkbox"/> <u>R,L</u> Urban | <input type="checkbox"/> Rip rap |
| <input type="checkbox"/> Shrub dominated corridor | <input type="checkbox"/> Pasture | <input type="checkbox"/> Concrete |
| <input type="checkbox"/> Herbaceous marsh | <input type="checkbox"/> Row crops | Other (specify): _____ |
| <input checked="" type="checkbox"/> <u>R,L</u> Mowed/maintained corridor | <input type="checkbox"/> 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):

Banks cleared to water for 300+ m, slopes relatively gentle

8. Dominant Primary Substrate

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

E QC
JB TB
7/1 7/1

Field Data Sheets – Basic RUAA Survey

Stream Name Green Fields Dr @ Unnamed Trib Site: 2
Date: 6/19/10 Time: 1104-

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 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	<input checked="" type="checkbox"/> 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).

shallow water - except for one pool

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

bridge crossing, can park & walk down, homes all along top of R & L banks

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 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: Green Fields @ Unnamed Trib Site: 2
Date: 6/19/10 Time: 1104-

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) X 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).

too shallow, narrow channel

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 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.

Blank lines for site-specific information and documentation.

Field Data Sheets - Basic RUAA Survey

Stream Name Green Fields Dr @ unnamed Trib Site: Z
 Date: 6/19/10 Time: 1104-

E. Stream Channel and Substantial Pools Measurements

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 **3**
 Photos #s (150 meters) Upstream Downstream Left Bank Right Bank **2**
 Photos #s (300 meters) Upstream Downstream Left Bank Right Bank **1**

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.

The first set of pictures are in reverse order

Distance	Depth (meters)	
30 meters	.75	0.23 m
60 meters	1.0	0.30
90 meters	.8	0.24
120 meters	.45	0.26 0.13
150 meters	.8	0.23 0.24
180 meters	.05	0.26
210 meters	.75	0.23
240 meters	.85	0.26
270 meters	.6	0.18
300 meters	1.0	0.30
Average		0.24m

Field Data Sheets – Basic RUAA Survey

Stream Name Green Fields Dr @ Unnamed Trib Site: 2
 Date: 6/19/10 Time: 1104

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	19.10 ft	5.82 m
Width at narrowest point of the stream within 300 meter reach	10 ft	3.04 m
Width at the widest point of the stream within 300 meter reach	29.3 ft	8.93 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

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 Green Fields Dr @ Unnamed Trib Site: 2
 Date: 6/19/10 Time: 1104-

F. Additional RUAA Information

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

- | | |
|---|---|
| <input type="checkbox"/> Drinking or water in mouth | <input type="checkbox"/> Playing on shoreline |
| <input type="checkbox"/> Bathing | <input type="checkbox"/> Picnicking |
| <input type="checkbox"/> Walking | <input type="checkbox"/> Motorcycle/ATV |
| <input type="checkbox"/> Jogging/running | <input type="checkbox"/> Hunting/Trapping |
| <input checked="" type="checkbox"/> Bicycling | <input type="checkbox"/> Wildlife watching |
| <input type="checkbox"/> Standing | <input type="checkbox"/> None |
| <input type="checkbox"/> Sitting | <input type="checkbox"/> Other: _____ |
| <input type="checkbox"/> Lying down/sleeping | |

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).

- | | | | | |
|---------------------------------------|---|---|--------------------------------------|--|
| <input type="checkbox"/> Culverts | <input type="checkbox"/> Fences | <input type="checkbox"/> Log jams | <input type="checkbox"/> Rip rap | <input type="checkbox"/> Water control structure |
| <input type="checkbox"/> Barbed wire | <input type="checkbox"/> Dams | <input type="checkbox"/> Thick vegetation | <input type="checkbox"/> Low bridges | <input checked="" type="checkbox"/> None |
| <input type="checkbox"/> Utility pipe | <input type="checkbox"/> Other (specify): _____ | | | |

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

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

Comments: _____

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

- | | |
|---|---|
| <input type="checkbox"/> Private Property | <input type="checkbox"/> Fence |
| <input type="checkbox"/> No trespass sign | <input type="checkbox"/> Barge/ship traffic |
| <input type="checkbox"/> Wildlife | <input type="checkbox"/> Industrial |
| <input type="checkbox"/> Steep slopes | <input checked="" type="checkbox"/> None of the Above |
| <input type="checkbox"/> No public access | <input type="checkbox"/> Other: _____ |
| <input type="checkbox"/> No roads | |

Comments: Easy access

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

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

Comments: There was an abandoned bike in the creek.

Field Data Sheets – Basic RUAA Survey

Stream Name: Green Fields dr @ Unnamed Trib Site: 2
 Date: 6/19/10 Time: 1104-

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:

There was a neon green film in the 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: There was two wading birds

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: abandon bike

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 Sheets – Basic RUAA Survey

Stream Name Austin PKwy @ Dunmore Trib Site: 3
Date: 7/16/10 Time: 1138

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 of water is low; mud very soft, sink to calf &

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

School & park on L bank w/ 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 Austin PKWY @ Unnamed Trib Site: 3
Date: 6/19/10 Time: 1138

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) XN/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).

too shallow, narrow channel

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.

Stream Name Austin PKWY @ Unnamed Trib Site: 3
 Date: 6/19/10 Time: 1138

Field Data Sheets - Basic RUAA Survey

E. Stream Channel and Substantial Pools Measurements

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	.33	0.17m
60 meters	.55	0.17
90 meters	.5	0.15
120 meters	.2	0.06
150 meters	1.0	0.55
180 meters	.45	0.14
210 meters	1.0	0.30
240 meters	.5	0.15
270 meters	.8	0.24
300 meters	.6	0.18
Average	0.5	0.21

Field Data Sheets - Basic RUAA Survey

Stream Name Austin & Kury @ Unnamed Tr. 6 Site: 3
 Date: 6/19/10 Time: 1138 -

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	3.5 ft	1.07
Width at narrowest point of the stream within 300 meter reach	5.2	1.58
Width at the widest point of the stream within 300 meter reach	30.2 ft	9.20

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: Austin Pkwy @ Unnamed Trib Site: 3
Date: 6/19/10 Time: 1138

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: Easy Access

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: There was a cooler, and tractor tracks/

Field Data Sheets – Basic RUAA Survey

Stream Name Austin Pkwy @ unnamed Trib Site: 3
 Date: 6/19/10 Time: 1138

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: one wading bird & two ducks

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: cooler

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).

