Appendix A. Segment 0831 Anecdotal Record

First Supplemental Survey - 26-27 July 2001- Clear Fork Trinity Project

On the first supplemental, Jeff Stroebel and Tim Jones visited all locations identified as sampling stations and additional stations which will be used in the modeling effort in FY2001-2002. At all stations, notes were made, GPS data were collected and photographs taken. At the sampling stations for the Clear Fork Trinity project, stream velocity was measured.

Station 17446 - located immediately downstream of the Lake Weatherford Dam on East Lake Drive. Investigator arrived at this station at approximately 1030 CST on 26 July. The weather had settled into a typical July day, clear, calm and hot. A large pool extends from the outfall of the dam to just upstream of the bridge on East Lake Dr. where it is bounded by a relatively long riffle that extends from upstream of the bridge to downstream of the bridge. It is suspected that the riffle is man-made as a result of building the bridge. The riffle empties into a large pool that extends some 30 to 40 meters downstream before the channel bends into another riffle area. The riparian zone is confined only to the channel sides to the top of the bank. There is considerable construction evident in the area from south of East Lake Dr. to IH20. All parameters required were collected.

Station 11060 - is a TNRCC station at IH20 in Willow Park east of Weatherford. Data were collected beneath the IH20 bridge at approximately 1236 CST on 26 July. Though hot, skies began to be partly cloudy and a light breeze could be felt. GPS coordinates were collected at the USGS weight box on the access road bridge at the interstate. Upstream of the bridge the water appeared still and covered with algae. A pipe crossed the channel north of the bridge. Velocity and physicochemical parameters were measured in the constricted channel beneath the highway crossing. The area was trashy and a lot of construction debris littered the area beneath the bridge. A more suitable location for the intensive survey will be investigated when the time arrives.

Station 17445 - is on the Clear Fork and Underwood Rd. west of Aledo. This station was visited at approximately 1405 CST on 26 July. Flow was very low and algal mats were observed on the pool surfaces. Velocity measurements and physicochemical parameters were collected in a flowing area beneath the bridge. Upstream of the bridge, the stream side vegetation is dense and luxuriant. Downstream, the channel is fenced and impacts of cattle are observed. This is validated by the presence of a substantial number of cows with some calves that crossed through the stream when we arrived. The stream banks and substrate are mostly sand and loose small sized gravel downstream of the bridge, thus very little vegetation is observed downstream of the crossing, except for a few large trees.

Station 17454 - is a station located in the South Fork of the Clear Fork just above its confluence with the Clear Fork. This is the major tributary of the Clear Fork south of the dam and is formed by the union of Town Branch and Willow Creek. Access to this station is achieved by passing through private lands and crossing the Clear Fork beneath a railroad bridge. Pleasing aesthetically, this stream flows through a deep channel bounded to the north by a train track and to the south by developing property. It was related that a golf course and housing development was being built in that area. Investigators arrived at this station at approximately 1455 CST on 26 July. All data were collected at this station.

Station 17444 - is located on the Clear Fork at the FM5 crossing southwest of Aledo. This station was visited at approximately 1600 CST on 26 July. Late in the afternoon and clouds have increased and the wind picked up to 5 - 10 mph. Temperature is still in the upper 90s to low 100s. The channel at this location is very deep and steep. Accessibility is moderately difficult. The channel winds through sand and pebble bars and is generally narrow and shallow. GPS, velocity, physicochemical and photo data were collected. Though formerly agricultural land, the acreage abutting this station both upstream and down has been subdivided into ranchettes of approximately 5 - 10 acres. Riparian zone relatively intact. No evidence of livestock, but density of trees along stream and steepness of the bank appears to reduce the understory to some degree.

Station 13691 - is a TNRCC designated station located on the Clear Fork south of US Hwy 377 in Wheatland. This is the lowest station on segment 0831 just above Lake Benbrook. Investigators arrived at this station on 27 July at approximately 0835 CST. Weather conditions were clear and calm with

temperatures in the mid 80s. This may be the most aesthetically pleasing station visited so far in terms of riparian vegetation, stream configuration and general appearance. One detractor is the trash left by persons fishing at the large pool approximately 200 m downstream of Hwy 377. Located on US Army Corps of Engineers property, the riparian is relatively intact. Vegetation, including large trees and understory extend far back from the banks, greater than 100 meters. The stream bottom ranges from bedrock to gravel/cobble, providing good habitat for fish and benthos. Velocity, physicochemical parameters and GPS data were collected at this station. Photos were also taken.

Supplemental Stations for Modeling

Station 17458 - a crossing over Squaw Creek north of IH20. Though not an approved sampling location at this time, GPS coordinates were collected at this location.

Station 17448 - outfall of Aledo WWTP. Arrived approximately 0910 CST 27 July. Recorded GPS coordinates and photographed. Plant is located west of FM 5 behind a residential development near the Clear Fork. Rather secluded and difficult to find. Outfall empties into an unnamed receiving stream that does not flow above the plant except during storm runoff events.

Station 17447 - confluence of Aledo WWTP receiving stream and the Clear Fork. Recorded GPS coordinates and photographed at approximately 0930 CST on 27 July. Receiving stream winds through a wooded area that has roads cleared by a private landowner. Channel is very deep and steep, difficult to access due to steepness and abundance of poison ivy.

Station 17450 - is the outfall of the Willow Park Wastewater Treatment Plant north of IH 20. GPS coordinates were made at the plant and at the outfall as it enters the Clear Fork.

Station 17456 - Rufe Evans Hollow at Old Annetta Rd. west of Aledo. Slightly flowing (had not been in May when preliminary search was done). Water flows out of hills on south side of road, under the road and through a culvert under a construction road being used to develop the land north of the road to the South Fork. GPS coordinates and photos were collected.

Station 17455 - South Fork of the Clear Fork at FM 5 in Annetta. At this point the South Fork flows through a rural area and a moderate velocity was observed. GPS coordinates and photos were collected.

Station 17453 - Burgess Creek at Cedar Point Road. Burgess Creek is a small drainage from the south side of Cedar Point Road. Though observed flowing in the past, no water was observed on 27 July at 1020. GPS coordinates and photos were collected.

Station 17451 - Town Branch at Cedar Point Road. This stream starts above Weatherford and flows through town. It is the receiving stream for the City of Weatherford WWTP effluent. Just below this point, Town Branch joins Willow Creek to form the South Fork. GPS coordinates and photos were collected.

Station 17452 - Willow Creek at Bankhead highway. The eastern branch of the South Fork. This creek was dry at the time of this visit, 27 July at approximately 1037. GPS coordinates and photos were collected.

Station 17457 - Town Branch in downtown Weatherford. This station is located under the US Hwy 180 bridge just east of the Parker County courthouse. Very trashy as one might expect. Small pools in a rocky bottom with minimal flows observed. This station is above the outfall of the WWTP. GPS coordinates and photos were collected.

Station 17449 - Weatherford WWTP outfall. The plant discharges through an elevated weir and water falls down a chute of “dragon’s teeth” for aeration where it enters the South Fork. GPS coordinates and photos were collected.

First Intensive Survey - 07-23 August 2001- Clear Fork Trinity Project

Station 17446 - TIAER field personnel set 5 transects at this stations at 50 meter intervals to perform a habitat assessment and biological sampling effort. The lowest transect (A) was set in a run approximately 150 meters downstream of the East Lake Dr. bridge. Transect B was set in a pool, Transect C also in a pool, Transect D was set in the riffle below the bridge and Transect E was set in a pool just upstream of the bridge toward the dam. The investigation began at station at approximately 0745 CST and ended around 1230 CST on 08 August. Water transparency in the deepest pool where the data sonde was deployed for the 24-hour DO measurement was measured at 17 inches with a maximum depth of 4 feet recorded. Water color was a milky-gray to gray green suggesting some algae and suspended solids reducing transparency. No noxious water odors were detected at the station, even when sediments were disturbed. Conditions were partly cloudy with light and variable winds with temperatures around 98°F.

Habitat assessments were performed at each of the five transects, benthic samples were collected by 5-minute kicknets in the riffles and fish were collected using seines and electroshock (see monitoring plan). All biological samples were preserved for return to the lab for further analysis. In addition to the biological data, water chemistry samples, velocity measurements, and physicochemical parameters were collected, and photographs were taken at each transect and upstream and downstream from the midpoint of the reach. 24-hour dissolved oxygen values at 30 minute intervals were also measured.

There continues to be a considerable amount of construction around and downstream of the station, a new water plant has been built to the east and much of the land has been cleared, including most of the stream bank (riparian zone) starting approximately 200 meters downstream of the lowest transect. In addition, there is a large bed of riprap wrapped in a vinyl chain link material that lies completely across the stream just above Transect A. A wide strip of the riparian vegetation has been cleared at this location and this is obviously a management practice to reduce erosion. Generally, the station selected for Station 17446 is disturbed by human activity to a far greater degree than previously noted.

Station 11060 - Clear Fork at IH20. The intensive survey at this station was begun on 08 August at approximately 1520 CST, although the habitat survey was completed in the morning beginning at 0950 CST, and ended at approximately 1800 CST. Originally, the reach identified for the survey was to begin above IH20 and move downstream for about 200 meters (at 50 meter intervals). After further evaluation of the station it was determined that the survey would be best served if the reach be shifted downstream to avoid complications caused by the highway crossing. For this reason, the uppermost transect (E) was set in a pool approximately 50 meters downstream of the highway bridge. Each additional transect was set at 50 meter intervals moving downstream as follows: Transect D was set in a run, Transect C in a riffle, Transect B in a riffle and Transect A (the downstream most cross section) in a shallow glide area. Water transparency at the pool where the data sonde was set was recorded as 9 inches with a total depth of 2.5 feet. Water color was brownish but clear at the shallower stations. No odors were detected that were worth noting. The habitat assessment details the widths and depths of each cross section. A railroad bridge crosses the creek between Transects A and B and there is old trestle debris (including a large slab of concrete) and some large trees that make access to A somewhat difficult. Weather conditions were similar to those described for 17446.

Habitat assessments were performed at each of the five transects, benthic samples were collected by 5-minute kicknets in the riffles and fish were collected using seines and electroshock (see monitoring plan). All biological samples were preserved for return to the lab for further analysis. In addition to the biological data, water chemistry samples, velocity measurements, and physicochemical parameters were collected, and photographs were taken at each transect and upstream and downstream from the midpoint of the reach. 24-hour dissolved oxygen values at 30 minute intervals were also measured.

Though there appears to be some fishing in the area under the bridge, there was not evidence of this occurring in the area selected for monitoring. It is more difficult to access and the water is generally shallow in narrow channels once it exits the pool at Transect E.

The data sondes recording 24-hour DO values at Stations 17446 and 11060 were retrieved on the afternoon of 8 August, re-calibrates and redeployed at Stations 17445 and Stations 17444 later that evening.

Station 17444 - Clear Fork at FM5 southwest of Aledo. On 9 August beginning at 0751 CST, five transects were set at this station and a habitat assessment was performed, starting with Transect E, approximately 50 m downstream of the FM 5 bridge and continuing downstream at 50 m intervals until a reach of 200 m had been attained. Transect E occurred at a riffle, Transect D at a run, Transect C in a glide, Transect B in a riffle and Transect A in a pool. Water transparency at this location, taken in the pool where the data sonde was deployed was 1-foot two-inches, the same as the total depth. Color was clear except in the pool at Transect A where there appeared to be a presence of suspended solids, creating a muddy gray caste to the water. Algae was present but not common. Overall habitat for benthic organisms was very poor and habitat for fish was minimal (see habitat assessment). No odors noxious were detected. Overall, the station was clean of trash except for a submerged tire and some appliance parts embedded at the station of the first riffle. Weather conditions were sunny with light and variable winds and temperatures around 93°F. Once the transects were identified and the habitat assessment concluded, the team at this station joined the team at 17445 to perform the biological monitoring there. The entire staff returned at 1400 CST to complete the biological sampling at 17444. This effort concluded at approximately 1730 CST.

Habitat assessments were performed at each of the five transects, benthic samples were collected by 5-minute kicknets in the riffles and fish were collected using seines and electroshock (see monitoring plan). All biological samples were preserved for return to the lab for further analysis. In addition to the biological data, water chemistry samples, velocity measurements, and physicochemical parameters were collected, and photographs were taken at each transect and upstream and downstream from the midpoint of the reach. 24-hour dissolved oxygen values at 30 minute intervals were also measured.

There were little evidence of human use at this location, except at the pool at Transect A where a large borrow pit had been dug in one corner of the pool, presumably for sand. The bank had been cleared at this point and there was evidence of a “road” down to the stream at this point.

Station 17445 - Clear Fork at Underwood Rd. west of Aledo. On 09 August at approximately 0910 CST, a team of TIAER field staff identified the 5 transects required for the habitat assessment at the station and performed the assessment. Cross sections were staked at 50 meter intervals starting with the riffle under the bridge on Underwood road. Two transects were place at 50 m intervals upstream of the bridge and two at 50 m intervals downstream. Transect A, the downstream most, was located in a pool, Transect B in a run, Transect C in a glide, Transect D in a pool and Transect E in a riffle/run. At approximately 1000 CST the team from 17444 joined this team and performed the biological assessment at this location. Water transparencies in the pool in which the data sonde was deployed for 24-hour DO monitoring was 1-feet 9-inches, at a total depth of 2-feet 2-inches. Algae was abundant at this station, particularly upstream of the bridge where there was more substrate to allow attachment. The upstream had a less impacted riparian zone that the reach downstream of the bridge, owing to the fact that a sizable herd of cattle live in the riparian zone downstream. The reach below the bridge inhabited by the cattle had a definite odor, a cattle smell that is associated with the cattle themselves and their manure. The banks were criss-crossed with trails that had worn away vegetation and opened opportunities for extensive erosion. Winds were light and variable, the sky was clear and temperatures were around 99°F when we began this station at 1000 CST. Efforts at this station were concluded at approximately 1330 and the team move to 17444.

Habitat assessments were performed at each of the five transects, benthic samples were collected by 5-minute kicknets in the riffles and fish were collected using seines and electroshock (see monitoring plan). All biological samples were preserved for return to the lab for further analysis. In addition to the biological data, water chemistry samples, velocity measurements, and physicochemical parameters were collected, and photographs were taken at each transect and upstream and downstream from the midpoint of the reach. 24-hour dissolved oxygen values at 30 minute intervals were also measured.

Other than the cattle, other impacts by humans was not evident. A local landowner stopped to inquire as to our purpose and shared the information that fishing was better upstream of the bridge than downstream. He wished us good luck and went on his way.

Station 17454 - the lowest point of the South Fork of the Clear Fork prior to the confluence of the two. Water transparency of 10-inches was recorded in a total depth of 2 feet. Though no unusual color or odor were noted, there appeared to be some suspended solids in the pool. Algae was present but not common. Weather consisted of light and variable winds, sunny skies and a temperature of around 86°F.

At this station, a data sonde was deployed on 9 August at 0819 CST. On 10 August it was retrieved at 1435. Also on 9 August, velocity measurements, water chemistry samples and physicochemical measurements were made. Additionally, a photographic record and field notes were collected. This was performed by the team that set the transects at 17445.

Station 13691 - on 10 August at 0904 CST, the TIAER field staff laid out the 5 cross sections for habitat assessment and performed the intensive survey protocols used at the above stations. Transects were spaced at 75 m intervals for a total reach of 300 m. Transect A, the downstream most location, was set in a run/glide area, Transect B in a run, Transect C in a pool, Transect D in a glide and Transect E in a pool. Water transparency in the pool where the data sonde was deployed was 1-foot in a total depth of 1.5-feet. The water color was a greenish gray suggesting algae and suspended solids. No unusual odors were detected. Though not appearing to be a problem in terms of clogging the stream and affecting flow, attached algae was common throughout the reach. In some pooled areas, floating mats were observed some of which appeared dead. The riparian zone for this station was the least impacted observed in Segment 0831. As the entire study area lies within US Army Corps of Engineers property and is in the flood plain, no development has occurred. To the west, the riparian buffer exceeded 200 meters, while to the east it appeared to extend approximately 75 meters where it is bounded by a road. Weather conditions were clear and calm with a recorded temperature of 102°F during the time the survey was performed.

Habitat assessments were performed at each of the five transects, benthic samples were collected by 5-minute kicknets in the riffles and fish were collected using seines and electroshock (see monitoring plan). All biological samples were preserved for return to the lab for further analysis. In addition to the biological data, water chemistry samples, velocity measurements, and physicochemical parameters were collected, and photographs were taken at each transect and upstream and downstream from the midpoint of the reach. 24-hour dissolved oxygen values at 30 minute intervals were also measured.

There were no impacts observed related to agriculture or urban development. The station appears to be frequented by fishermen or loiters, as there are evidences of campfires and litter, bottles, cans, boxes and the like. Other than the trash, the station is relatively natural in its appearance.

24-hour Dissolved Oxygen - 11-20 September 2001 - Clear Fork Trinity Project

Station 17446 - A data sonde for 24-hr DO measurements was deployed on 11 September 2001 at 1043 CST and a photographic record of the station was made. At the time of the deployment, a side by side reading of physicochemical data were also collected with a different unit. No notable differences from the August sampling period were observed at this location. Water transparency was 0.3 m in the 1.1 meter deep pool where the sonde was deployed. Color was similar to before and no odors were noted. The velocity of the water appeared to be slightly elevated from the previous sampling effort. On 12 September 2001 the sonde was retrieved and instantaneous measurements of physicochemical parameters along with a side by side reading from a different unit were made. Additionally, velocity measurements and water quality samples were collected at this location on 12 September. Construction continues downstream of this location and a golf course is taking shape as well as housing tracts and roads becoming apparent. Weather conditions were clear to partly cloudy with calm to light and variable winds and temperatures in the mid 80s.

Station 11060 - A data sonde for 24-hr DO measurements was deployed on 11 September 2001 at 1150 CST and a photographic record of the station was made. At the time of the deployment, a side by side reading of physicochemical data were also collected with a different unit. Water transparency was 6 inches at a total depth of .75 m. Color was a dirty brown in the pools but clear in the shallow areas. Since the

August intensive survey, a utility construction crossing had been built immediately down stream of the old railroad trestle. The crossing consisted of a large cement pipe covered with dirt from the stream bank. At some time after its construction it was apparent that a significant runoff event, most likely the rainfall that occurred on 5 September, had occurred as much of the dirt was washed away from the bridge and deposited on top of Transect A. We will have to deal with this next spring when we perform the next intensive survey. On 12 September at 1435, the data sonde was retrieved and instantaneous measurements of physicochemical parameters along with a side by side reading from a different unit were made. Additionally, velocity measurements and water quality samples were collected. Weather conditions were clear to partly cloudy with calm to light and variable winds and temperatures in the mid 80s.

Station 17445 - A data sonde for 24-hr DO measurements was deployed on 11 September 2001 at 1150 CST and a photographic record of the station was made. At the time of the deployment, a side by side physicochemical data were also collected with a different unit. Water transparency was 18-inches, equal to total water depth. Water color was not notably different from previous visits and the odor associated with the cattle at the lower portion of the station was still apparent. Algae was abundant below and upstream of the bridge crossing. On 12 September at 1558 CST, the data sonde was retrieved and instantaneous measurements of physicochemical parameters along with a side by side reading from a different unit were made. As noted at deployment, secche depth at retrieval was equal to total depth, 18 inches. Additionally, velocity measurements and water quality samples were collected at this location on 12 September. Weather conditions were clear to partly cloudy and calm to light winds from the southeast with temperatures in the low 80s.

Station 17454 - A data sonde for 24-hr DO measurements was deployed on 12 September 2001 at 1707 CST and a photographic record of the station was made. At the time of the deployment, a side by side reading of physicochemical data were also collected with a different unit. There were signs at this location that water level had been up since the August sampling. The channel through the sand bar below a rock outcrop had changed and drift material was on the sides of the stream. The sonde was deployed in a pool approximately 75 m upstream of the confluence with the Clear Fork. Transparency was 0.5 ft at a total depth of 1.0 ft. No unusual odors were evident. On 14 September at 1120 CST, the data sonde was retrieved and instantaneous measurements of physicochemical parameters along with a side by side reading from a different unit were made. At this time, it was realized that the DO membrane had been compromised, thus rendering the DO data useless. It appeared from the data logged in the sonde the breach occurred around midnight on 12 September. Additionally, velocity measurements and water quality samples were collected at this location on 12 September. Transparency and color had not appreciably changed since the time of the deployment. Weather conditions at the time this station was visited was sunny and calm with temperatures around 82F.

Station 17444 - A data sonde for 24-hr DO measurements was deployed on 12 September 2001 at 1757 CST and a photographic record of the station was made. At the time of the deployment, a side by side reading of physicochemical data were also collected with a different unit. Water velocity appeared to be elevated since the August sampling, otherwise little difference was observed at the station since the previous trips. Water transparency was near or equal to the total depth of 2 feet. On 14 September at 1032 CST, the data sonde was retrieved and instantaneous measurements of physicochemical parameters along with a side by side reading from a different unit were made. Additionally, velocity measurements and water quality samples were collected at this location on 12 September. Weather conditions were sunny to partly cloudy with light and variable winds and temperature the low 80s.

Station 13691 - A data sonde for 24-hr DO measurements was deployed on 12 September 2001 at 1829 CST and a photographic record of the station was made. At the time of the deployment, a side by side reading of physicochemical data were also collected with a different unit. Turbidity appeared to be elevated since the August sampling. Transparency was at 1-foot in the pool in which the sonde was deployed, on 14 September it had increased slightly to 1-foot 4-inches. Velocity also appeared elevated since the last sampling. Additionally, velocity measurements and water quality samples were collected at this location on 12 September. At the time of deployment, there were two young men fishing the stream. They were curious and ask questions, seemingly interested. A general explanation of the project was offered and parted company and went on our way. This station appears to be frequently used for fishing

and moderate camping. There is always litter on the large bedrock shelf that is located at the upper end of the reach being monitored. On 14 September at 1032 CST, the data sonde was retrieved and instantaneous measurements of physicochemical parameters along with a side by side reading from a different unit were made. Weather conditions from 12 - 14 September were consistent, being clear and calm with temperatures in the mid to low 80s. One additional note, when the sonde was retrieved, the case in which it was housed appeared to have been moved. It did not seem to be at the same level and angle at which it was left. It is speculated that someone may have taken it out of the water to examine it but returned it with no damage. As it was chained to a tree, it could not be moved far. Examination of the data does not reveal any readings that appear to be out of the ordinary.

Supplemental Survey - 4 October 2001- Clear Fork Trinity Project

All stations were visited on 4 October 2001. Generally, the day was cool, temperatures ranged from 72 to 79 F, and the sky began as overcast changing to mostly cloudy with a south wind at 15-20 mph. Forecasters are calling for rain later in the week and during the weekend. Seasonal changes are apparent. At all sites, leaves are falling as trees are showing signs of dormancy. In general, water levels and velocities appear elevated since the last trip to the sites.

Station 17446 - was flowing nicely and velocity measurements were collected at 1040 at Transect A in a narrow run near the bank stabilization structure that crosses the stream. Sonde data and photographs were also taken. Construction on the golf course continues, greens can be identified from the road.

Station 11060 - was visited at 1107 CST. Velocity measurements, physicochemical data and photographs were made at this site. The utility construction crossing is still present but not repaired. On the west side of the creek south of IH20, a utility construction crew has been working since sometime in the summer. Some of the equipment includes larger augers, with a diameter that appears to be feet as opposed to inches. It is not certain what there purpose is but they are prepared to drill very large holes, giving rise to speculation that a new bridge may be scheduled to be built at some crossing of the creek.

Station 17454 - as at other sites, water level and velocity were noticeable here. Physicochemical data, velocity measurements and photographs were taken at this station at 1145 CST. Heavy equipment could be heard upstream and south of the site.

Station 17445 - the cattle may be getting used to us, they just look up and go about their business, which is often soiling the creek downstream of the bridge. Velocity measurements, physicochemical data and photographs were collected at 1209 CST. DO reading at this station was higher than others during the day. An abundance of attached *Cladophora* (algae) in full sunlight may be responsible for this value being so high.

Station 17444 - Velocity measurements, physicochemical data and photographs were collected at 1305 CST. Other than elevated water levels and velocity since September, no noticeable changes were observed at this location.

Station 13691 - at 1342 CST, TIAER field staff collected velocity measurements, physicochemical data, and photographs for the supplemental survey. As observed at stations upstream, the water level at this station was noticeably up. The station at which velocity measurements have been routinely made was wider and deeper than previous visits. No increased turbidity was noted and the usual litter was present. One fisherman was present downstream from mid-point of the reach where the pictures were made.

Supplemental Survey 26 and 27 March 2002

Jeff Stroebel and Tim Jones completed the first supplemental survey for 2002 in segment 0831. Velocity measurements, physiochemical data, photographs and anecdotal annotations were collected at Stations 17446, 11060, 17445, 17454, 17444 and 13691. General observations were that the flooding that occurred as a result of the storms on 18 and 19 March 2001 impacted the stations in and below the confluence of the South Fork. Personal communication from staff at the City of Weatherford water treatment facility just below the dam indicated that about 3.5 inches were recorded during the recent storm.

Station 17446
This station is located directly below the dam on Lake Weatherford, therefore there was not much impact from storm water runoff at this location. Flow appeared normal at the riffle below the dam, however, at the riprap that crosses the stream at the lower end of the reach there appears to be a beaver dam. This is causing the water to backup in the large pool and has created a small bypass stream around the sand bar at the point the riprap crosses the stream. The water at the station was clear but green in color. Velocity was measured at the head of the riffle below the bridge and below the confluence of a small tributary that flows into the stream from the west. All data were collected between 0945 and 1000 CST. As previously mentioned, there is considerable construction downstream of the study area. A local resident that is an employee of the City of Weatherford indicated that two 18-hole golf courses were being built between this station and Interstate Highway (IH) 20. Much of the land around this segment of the stream has been cleared and altered, the riparian area remaining is about 200 meters long and extends to the top edge of the stream bank. There were stakes on the west side of the stream south of the bridge that indicated 6-inch irrigation line was going to be installed at that point. A dead *Carpiodes carpio* (carp) was observed just at the head of the riffle where velocity was measured. Weather conditions were clear with a south wind of 5 - 10 mph. Air temperature was approximately 49° Fahrenheit.

Station 11060
This station is immediately downstream of IH20. Data collection occurred at this station between 1025 and 1050 CST. Flow was moderate at this station, with some evidence of impacts from the previous week's storm event. The riffles that had been observed previously were intact and there was little evidence of channel alteration, either scouring or deposition, from the head of the reach to a railroad bridge located approximately 200 meters downstream of the initial transect. Water had obviously topped a large gravel bar just approximately 50 meter upstream of the train trestle as grass was bent over and debris was snagged on rocks and small trees. Evidence indicated a rise of 4 – 6 feet (a visit to the USGS web site for stream gaging station No. 08045850 indicate a rise in water level to 5.2 feet on 19 March following the storm passage). The alteration of the streambed at and below the trestle, was a result of construction, not the storm. Some type of pipeline, sewer it is suspected, has been run beneath the stream immediately south of the trestle and a bed of vinyl coated chain-link wrapped riprap has been placed across the stream at this point. Last summer, this area was impacted by a temporary construction road that was presumably used to build the pipeline. There is a welded-wire cattle-panel water gap crossing the creek just above the riprap and some debris was snagged on the lower wires of these panels. Previously, a large tree and some large cement slabs had been obstructing the stream below the trestle, but all had been removed during the construction of the pipeline. This cleared the channel and will make the lower transect of the reach more accessible when an intensive survey is performed. Weather conditions were clear with a south wind of 5 - 10 mph. Air temperature was approximately 52° Fahrenheit.

Station 17445
Flow was elevated at this station but not high compared to stations in segment 0833 or other stations downstream of this location. Data collection occurred between 1105 and 1125 CST. This sampling station is historically characterized by a small gravel and sand substrate with the only cobble riffles beneath the bridge and upstream of the bridge at Underwood Road. At this visit, it was observed that much of the sand had been moved around and there were sediment deposits on the large, submerged rocks beneath the bridge. The pool just upstream of the bridge was wider and deeper than previously observed. Riffles upstream of the bridge toward transects A and B were more fine gravel and less large rocks were evident. A debris/erosion line was observed to about 4-feet above the current level. Downstream of the bridge, a fence that crosses the creek had been totally washed out but a large log jam at the bend of the river had not

be affected appreciably. Attached algae and rooted macrophytes were observed at several locations. Water color was greenish in the depths but transparency was to the bottom where observed. No odors were detected. Cattle have access to the stream at this location but none were observed in the stream at the time of the visit. Weather conditions were clear with a south wind of 5 - 10 mph. Air temperature was approximately 57° Fahrenheit.

Station 17454
This station is located near the mouth of the South Fork of the Clear Fork Trinity approximately 25 meters upstream of the confluence. This station exhibited much higher flow than ever observed previously. A rock ledge at which velocity measurements are routinely made was completely submerged. For this reason, velocity measurements were made just upstream of this area. Data were collected between 1140 and 1205 CST. The water was not too colored, more grayish than tan but transparency was good to about 1.5 feet. No unusual odor was evident. Debris and erosion were evident to 8-feet above the current water level. There appeared to have been so much flow exiting the stream that the sand bar at the mouth was "blown out" and the pool at the mouth of the South Fork was 2 – 3 feet deeper that previously observed. The channel was straight from the riffle located 25-30 meters upstream of the confluence to the confluence. A large pile of trees that had been observed previously at the confluence had increased in size in both height and depth. There is a large area of cobble to boulder size rocks that make up the riffle at the area thought most of it is usually exposed. On this day, very little of this area was out of the water. Weather conditions were clear with a south wind of 5 - 10 mph. Air temperature was approximately 58° Fahrenheit.

Station 17444
Flow and water level was elevated at this station. Water was bank to bank in the channel and velocity measurements were collected at a location downstream from routine spot because the stream was too wide and several large embedded tree stumps interfered with the cross section. These tree stumps were previously at this spot and were not moved, though some appeared to be more exposed. Some household trash that had been collected there was gone, however. Data were collected between 1250 and 1315 CST. Water was transparent where physiochemical parameters were measured but was olive colored with a slightly milky undertone. No odor was detected. Debris and erosion on bank indicated water levels had reached 8 – 10 feet in the channel. The substrate at this station is mostly very fine gravel and sand. Much of this substrate had moved considerably, and a lot of sand had been deposited in bars on the inside of bends. Sand also covered most of the substrate where the current did not scour it away. The area where velocity was measured was scoured to over 3 feet in depth near the right bank. No well-developed riffles were observed, though riffles were not a predominant feature previously. Weather conditions were clear with a south wind of 5 - 10 mph. Air temperature was approximately 60° Fahrenheit.

Station 13691
Flow was elevated to the point that the rock shelf at the upper end of the reach had water flowing over most of it. The pool at that point was mostly obliterated, only a small fall was observed and considerable sand deposits were observed in the pool. Data were collected between 1330 and 1415 CST. Area at which velocity is routinely measured was totally submerged. Again, the water was mostly bank to bank. Velocity was measured upstream of fall area where substrate is primarily bedrock and flow was constant across the stream. A station previously selected was abandoned because of eddying. Water was greenish-gray and transparent to 1 foot in the pool. Debris and evidence of erosion was observed to 7 feet, nearly reaching the top of the right bank. Again, bars in the channel were considerably altered since the last visit and a lot of sand was exposed along the sides of the bed and in bars. Several individuals were fishing for *Morone chrysops* (white bass) and we spoke with one individual that had caught four fish approximately 12 inches in length. He also indicated that someone had caught a large hybrid stripper as well. Weather conditions were clear with a south wind of 5 - 10 mph. Air temperature was approximately 67° Fahrenheit.

Supplemental Survey 16 and 17 April 2002

Jeff Stroebel and Heather Dixon completed supplemental survey in segment 0831 on 17 April. Velocity measurements, physiochemical data, photographs and anecdotal annotations were collected at Stations 17446, 11060, 17445, 17454, 17444 and 13691. Rainfall had occurred the this watershed on 13April2002.

Station 17446
Flow appeared normal at the riffle below the dam. Velocity was measured at the head of the riffle below the bridge and below the confluence of a small tributary that flows into the stream from the west. All data were collected between 0900 and 0935 CST. Dominant substrate was cobble to bolder sized rocks embedded in gravel. Water transparency was good with almost no turbidity, water in the riffles appeared clear with no color water in the pool was green-blue but clear to approximately 2 feet. No odor was detected. Construction on the golf courses downstream of the monitoring station continues and the riparian area remains altered. Aquatic macrophytes were common and algae were abundant though no aquatic invertebrates were observed. Weather conditions were partly cloudy with south wind of 15 - 25 mph.

Station 11060
This station is immediately downstream of IH20. Data collection occurred at this station between 0950 and 1020 CST. Flow was moderate at this station, though some evidence existed of a 1 – 2-foot rise since the 27 March visit. Substrate at the station of data collection was predominately gravel. Algae were common and some macrophytes were present but no aquatic insects or fish were observed. Water was turbid with a brown-green tint presumably affected by runoff from a storm event that had occurred the previous weekend. Visibility was good to at least a foot, bottom of stream visible except in deepest pool upstream of gravel bar. Riffles were present and showed little signs of scouring. The bank and gravel bar at the mid point of the reach showed signs of revegetation. Weather conditions were mostly cloudy with a south wind of 5 - 10 mph.

Station 17445
Data collection occurred between 1035 and 1110 CST. Predominant substrate is sand with small shell fragments embedded, very unstable bottom except for cobble riffle beneath bridge. Some algae and few macrophytes were observed along stream bank and some algae were observed attached to rocks and logs in stream bottom. Downstream of the bridge, a fence across the creek that had previously washed out had been repaired. Water color was gray-green in the depths and cloudy but not the muddy turbidity observed at other stations. Transparency was to the bottom where observed. No odors were detected. Signs that cattle had been visiting the stream were present. Weather conditions were overcast with a south wind of 5 - 10 mph.

Station 17454
This station is located near the mouth of the South Fork of the Clear Fork Trinity approximately 25 meters upstream of the confluence. Flow was still elevated but subsided since the 27 March sampling trip, although the rock ledge at which velocity measurements are routinely made was still submerged. Velocity measurements were made at the same point as in March. Data were collected between 1115 and 1150 CST. Evidence indicated a 1.5 –2 foot rise and fall since the last sampling effort. Water color was a tan-green but transparency was good to about 1.0 foot. No unusual odor was evident. Predominant substrate was large gravel with some sand. Algae were observed both of the edge of the stream bank and on rocks in the streambed. No aquatic insects or fish were noted. Weather conditions were partly with a south wind of 5 - 10 mph.

Station 17444
Flow and water level was elevated at this station above the March visit. Water was bank to bank in the channel and it appeared that there had been a 2 – 3 foot rise and fall in water level from the rains that occurred the previous weekend. The large group of logs that persist in the stream had collected considerable more debris than noted in March. Velocity measurements were collected at a location that was suitable for the activity. Data were collected between 1255 and 1330 CST. Water was cloudy green but somewhat transparent. No odor was detected. The substrate at this station is mostly sand and very fine gravel. This substrate is very unstable and provides little for attachment. No algae or in stream

macrophytes were observed. Some aquatic insects, e.g. Gyrinidae, and small fish were noted. Weather conditions were partly cloudy with a south wind of 5 - 10 mph.

Station 13691
Flow was still elevated to the point that the rock shelf at the upper end of the reach had water flowing over most of it. The pool at that point was mostly obliterated, only a small fall was observed and considerable sand deposits were observed in the pool. Data were collected between 1345 and 1425 CST. Area at which velocity is routinely measured was totally submerged. Again, the water was mostly bank to bank. Velocity was measured upstream of fall area where substrate is primarily bedrock and flow was constant across the stream. Water was greenish and transparent to 1 foot in the pool. Algae were observed attached to substrate. Some aquatic insects and small fish were observed. Several individuals were fishing upstream near the bridge at the time of the visit. Weather conditions were partly cloudy with a south wind of 0 - 5 mph.

Second Intensive Survey – 30 April - 15 May 2002- Clear Fork Trinity Project

Sampling in Segment 0831 began on 7 May and was completed on 15 May 2002. Rainfall during this month hampered continuous sampling in 0831.

Segment 0831 monitoring was scattered over several days due to a series of storm systems that moved through the area during mid May. Three stations above the confluence with the South Fork of the Clear Fork and the station in the South Fork were collected on 7 and 8 May. The remaining two stations were not able to be sampled until 15 May when it was determined sufficient time had passed since the last significant runoff event.

Station 17445 - Clear Fork at Underwood Rd. west of Aledo. On 7 May at approximately 1139 CST, a team of TIAER field staff began an intensive survey at this station. Staff members identified the 5 transects required for the habitat assessment at the station and performed the assessment. Cross sections were staked at 50 meter intervals starting with the riffle under the bridge on Underwood road. Two transects were placed at 50 m intervals upstream of the bridge and two at 50 m intervals downstream. Transect A, the downstream most, was located in a pool, Transect B in a glide, Transect C in a riffle, Transects D and Transect E in a run. Water transparencies in the pool in which the data sonde was deployed for 24-hour DO monitoring was 1 foot, in a total depth of 1.33 feet. Water is clear, with no observable color. Algae was absent at most cross sections and only rare in the riffle. The upstream had a less impacted riparian zone that the reach downstream of the bridge, owing to the fact that a sizable herd of cattle live in the riparian zone downstream. The reach below the bridge inhabited by the cattle had a definite odor, a cattle smell that is associated with the cattle themselves and their manure. The banks were criss-crossed with trails that had worn away vegetation and opened opportunities for extensive erosion. Winds south at 20 to 25 mph, under mostly cloudy conditions and temperature 32 C. Efforts at this station were concluded at approximately 1630.

Habitat assessments were performed at each of the five transects, benthic samples were collected by 5-minute kick net in the riffle and fish were collected using seines and electroshock (see monitoring plan). All fish were identified in the field and returned to the stream. Benthic samples were preserved and returned to the lab for further analysis. In addition to the biological data, water chemistry samples, velocity measurements, and physicochemical parameters were collected, and photographs were taken at each transect and upstream and downstream from the midpoint of the reach. 24-hour dissolved oxygen values at 30 minute intervals were also measured beginning on 7 May and retrieved on 8 May.

Other than the cattle, other human impacts were not evident. The station was visibly altered since the previous year, presumably due to the heavy storms that passed through the area in March and April. Gravel bars had been pushed around changing the substrate in some areas and the water gap across the stream had once again been washed out. Attached algae, that had been abundant in August 2001 was absent but sufficient benthic organisms were found and a fair number of fish species collected.

Station 17454 - the lowest point of the South Fork of the Clear Fork prior to the confluence with the Clear Fork. Water transparency of 1 foot was recorded in a total depth of 4.1 feet. Though no unusual color or odors were noted, but the water was very turbid with suspended solids. Algae were observed but not common. Weather consisted of south winds 20 to 25 mph with mostly cloudy skies and a temperature of 33 C.

At this station, a data sonde was deployed on 7 May at 1100 CST and retrieved on 8 May at 1751. Also on 8 May, velocity measurements, water chemistry samples and physicochemical measurements were collected. Additionally, a photographic record and field notes were collected.

This station was altered considerably from previous rainfall events. The mouth of the stream was cut much deeper than before and a pile of dead trees and debris had increased at the confluence of the two creeks. The station at which velocity measurements are typically made was under water at this time. Flow was elevated and greater than that in the receiving stream.

Station 11060 - Clear Fork at IH20. The intensive survey at this station was begun on 08 May at approximately 0730 CST. The uppermost transect (E) was set in a pool approximately 50 meters downstream of the highway bridge. Each additional transect was set at 50 meter intervals moving downstream as follows: Transect D was set in a riffle, Transect C in a riffle, Transect B in a run and Transect A (the downstream most cross section) in a glide. Water transparency at the pool where the data sonde was set was recorded as 1 foot with a total depth of 1.8 feet. Water color was brownish and turbid in pools and glides but clear at the shallower stations. No offensive odors were detected. A water pipeline was buried across the stream just below the railroad bridge that crosses between Transects A and B. A rock rip-rap erosion abatement structure lies across the stream bed at this point and a water gap was constructed. The construction has caused some alteration to the lowest transect (A) but the trees and debris that was present in August 2001 had been removed. Wind was south at 20 to 25 mph under mostly cloudy skies and temperatures of 30 C.

Habitat assessments were performed at each of the five transects, benthic samples were collected by 5-minute kick net in the riffle at Transect C and fish were collected using seines and electroshock (see monitoring plan). All fish except one specimen were identified and returned to the stream. The fish specimen and benthic samples were preserved and returned to the lab for identification. In addition to the biological data, water chemistry samples, velocity measurements, and physicochemical parameters were collected, and photographs were taken at each transect and upstream and downstream from the midpoint of the reach. 24-hour dissolved oxygen values were measured at 30 minute intervals beginning on 7 May and retrieved on 8 May.

Though there appears to be some fishing in the area under the bridge, there was not evidence of this occurring in the area selected for monitoring. It is more difficult to access and the water is generally shallow in narrow channels once it exits the pool at Transect E. There usually is some household trash at this station.

Station 17446 - TIAER field personnel set 5 transects at this station at 50-meter intervals to perform a habitat assessment and biological sampling effort. The lowest transect (A) was set in a pool just below a short run approximately 150 meters downstream of the East Lake Dr. bridge. Transect B was set in a pool, Transect C also in a pool, Transect D was set in the riffle below the bridge and Transect E was set in a pool just upstream of the bridge toward the dam. The investigation began on 08 May at station at approximately 1300 CST and ended around 1615 CST. Water transparency in the deepest pool where the data sonde was deployed for the 24-hour DO measurement was measured at .8 feet at a maximum depth of 4 feet. Water color was green in the pools below the road crossing suggesting algae affected transparency. In the large pool above the road crossing water color was brown suggesting more influence from suspended solids, possibly stirred up by large carp that inhabit the pool. No noxious water odors were detected at the station, even when sediments were disturbed. Meteorological conditions were mostly cloudy with south winds at 20 to 25 mph and a temperature of 33.5 C.

Habitat assessments were performed at each of the five transects, benthic samples were collected by 5-minute kick net in the riffle at Transect B and fish were collected using seines and electroshock (see monitoring plan). All fish except two individuals were identified and returned to the stream. The two specimens and all benthic samples were preserved and returned to the lab for identification. In addition to the biological data, water chemistry samples, velocity measurements, and physicochemical parameters were collected, and photographs were taken at each transect and upstream and downstream from the midpoint of the reach. 24-hour dissolved oxygen values were measured at 30 minute intervals beginning on 7 May and retrieved on 8 May

There continues to be a considerable amount of construction around and downstream of the station, a new water plant has been built to the east and much of the land has been cleared, including most of the stream bank (riparian zone) starting approximately 200 meters downstream of the lowest transect. In addition, there is a large bed of riprap wrapped in a vinyl chain link material that lies completely across the stream just above Transect A. A wide strip of the riparian vegetation has been cleared at this location and this is obviously a management practice to reduce erosion. Generally, the station selected for Station 17446 is disturbed by human activity to a far greater degree than previously noted. There is very little moving water observed at this location. The run that was below the beaver dam at Transect A is now in back water and the run below the beaver dam is less than a meter in length.

15 May 2002

Due to several strong storms that impacted the area following the 8 May sampling area, the following stations were not able to be sampled until 15 May 2002. Two TIAER field crews working independently collected all data at both stations beginning on the morning of 15 May. Habitat, water chemistry and physicochemical data and benthic and seine samples were collected at 17444 and 13691. As only one electroshocker was available, station 13691 was collected first then station 17444 later that afternoon.

Station 17444 - Clear Fork at FM5 southwest of Aledo. The intensive survey began on 15 May at 0932 CST. Five transects were set at this station and a habitat assessment was performed, starting with Transect E, approximately 50 m downstream of the FM 5 bridge and continuing downstream at 50 m intervals until a reach of 200 m had been attained. Transect E occurred at a run, Transect D at a run, Transect C in a glide, Transect B in a glide and Transect A in a pool. Water transparency at this location, taken in the pool where the data sonde was deployed was 1.5 feet at a total depth of 3 feet. Color was green to olive and turbid. Flow was elevated more than previously observed at any previous sampling visit. Algae were rare. Overall habitat for benthic organisms was very poor and habitat for fish was minimal (see habitat assessment). No odors noxious were detected. Overall, the station was clean of trash except for a submerged tire and some appliance parts embedded at the station near Transect E. Weather conditions were sunny with south winds at 5 to 15 mph and a temperature of 25 C. The team at this station performed all phases of the intensive survey except electroshocking procedures. This team was joined by staff with the shocking equipment around 1400 CST for completion of the survey. All phases were completed by 1525 CST.

Habitat assessments were performed at each of the five transects, benthic samples were collected by 5-minute kick net in a riffle between Transects A and B. Fish were collected using seines and electroshock (see monitoring plan). All fish except one specimen was identified in the field and returned to the stream. The fish and benthic samples were preserved and returned to the lab for identification. In addition to the biological data, water chemistry samples, velocity measurements, and physicochemical parameters were collected, and photographs were taken at each transect and upstream and downstream from the midpoint of the reach. 24-hour dissolved oxygen values were measured at 30 minute intervals beginning on 15 May and retrieved on 16 May.

There were little evidence of human use at this location, except at the pool at Transect A where a large borrow pit had been dug in one corner of the pool, presumably for sand. The bank had been cleared at this point and there was evidence of a road down to the stream at this point.

Station 13691 - The intensive survey began on 15 May at 0842 CST. TIAER field staff laid out 5 cross sections for habitat assessment and performed the intensive survey protocols previously described.

Transects were spaced at 75 m intervals for a total reach of 300 m. Transect A, the downstream most location, was set in a run area, Transect B and Transect C in glides, Transect D in a riffle and Transect E in a glide/pool. Because of water quantity at this station, no true pools were observed. Water was observably flowing in all areas of the reach. Water transparency where the data sonde was deployed was 1.25-feet in a total depth of 2.25-feet. The water color was mostly green suggesting suspended algae. No unusual odors were detected. Unlike August 2001, attached algae was rare to absent at all transects. The riparian zone for this station was the least impacted observed in Segment 0831. As the entire study area lies within US Army Corps of Engineers property and is in the flood plain, no development has occurred. To the west, the riparian buffer exceeded 200 meters, while to the east it appeared to extend approximately 75 meters where it is bounded by a road. Weather conditions were sunny with south winds 5 to 10 mph a recorded temperature of 25 C.

Habitat assessments were performed at each of the five transects, benthic samples were collected by 5-minute kick net in a riffle and fish were collected using seines and electroshock (see monitoring plan). All fish specimens were identified and returned to the stream and benthic samples were preserved and returned to the lab for identification. All available habitats were worked for collecting fish. Six seine hauls were made of at least 10 m while electroshocking was performed for 1430 seconds. Fewer species and specimens were observed since the August sampling effort, possibly attributed to elevated water level and velocity. In addition to the biological data, water chemistry samples, velocity measurements, and physicochemical parameters were collected, and photographs were taken at each transect and upstream and downstream from the midpoint of the reach. 24-hour dissolved oxygen values were measured at 30-minute intervals beginning on 15 May and retrieved on 16 May.

There were no impacts observed related to agriculture or urban development. The station appears to be frequented by fishermen or loiterers, as there are evidences of campfires and litter, bottles, cans, boxes and the like. Other than the trash, the station is relatively natural in its appearance.

The crew at this station finished at 1355 CST. Two members returned to TIAER with equipment and samples while two other members joined the staff at station 17444 to perform the electroshock procedure.

24-Hour Dissolved Oxygen Survey –June 2002

On 12 June 2002, Jeff Stroebel and Tim Jones deployed YSI multiprobe sondes in Segment 0831, Clear Fork Trinity, to record 24-hr dissolved oxygen data. Sondes were retrieved on 13 June. Additional data included physicochemical, water quality, velocity, photos and field notes. All sondes were deployed first from downstream to upstream. Once deployed, water chemistry and velocity measurements were made from upstream to downstream.

Station 13691 – Sonde was deployed at 0841 CST. Water level and velocity were visibly diminished since May, however, there were at least two seeps (one quite substantial) entering the river upstream of transect B. Water color was green to olive brown and appeared to be laden with suspended sediments, no odors were detected. The Secchi disc reading was 1.5 feet. Winds were strong from the south at 20 to 25 mph under partly cloudy skies. Temperature was 30.5 C in the morning and 33C when the water quality data were collected. No one was present at the time of deployment but there were signs of fishing activities. Campfires, rod supports and lots of trash. Water quality data and velocity measurements were made in the afternoon of 12 June between 1600 and 1630. The sonde was retrieved on 13 June between 0945 and 1000 CST. Some sediment had collected on the outside of the protective case and worm tubes were present. All in all the deployment was successful.

Station 17444 – Sonde was deployed at 0945 CST. Again water levels and velocity were notably lower since May. Water was turbid with sediments and the color was green to olive. No odors were detected. As at 13691, Secchi disc depth was 1.5 feet. Sand bars out of the water were covered with a film of algae that appeared to be a cyanobacteria. Some algae of a different color was present on gravel just beneath the surface of the water near shore. Some debris is collected on a log jam at transect E and near the bottom of the reach in which samples are collected, but most is organic, vegetation remnants. Winds were 20 to 25

mph from the south and skies were partly cloudy. Temperature at the time of deployment was 28C and at the time other data were collected later that day, it had risen to 32C. Velocity measurements and water quality data were collected between 1500 and 1530 on the afternoon of 12 June. The sonde was retrieved between 1030 and 1045 CST on 13 June.

Station 17445 – Sonde was deployed just after 1030 CST on 12 June. Level and flow were much lower that in May. Attached algae were abundant in the pool and riffle beneath the bridge. The water gap was repaired and cattle were present at the stream station. Though no cattle were observed in the water there was free access and manure was observed along the bank. Water was turbid at the time the sonde was deployed, 0.75 feet Zsd, but had cleared to 3 feet by 13 June when samples were retrieved. Color was grayish to green and was aqua in pool on 13 June. Bovine odors were common in the area but there were no unusual odors associated with the water. Water upstream of the water gap, in the area unaffected by the cows, was clear both days. Winds were 20 to 25 mph from the south and skies were partly cloudy. Temperatures ranged from 31C at the time the sonde was deployed to 32C when water quality and velocity measurements were made. Water chemistry and flow were collected between 1345 and 1430. The sonde was retrieved between 1115 and 1130 on 13 June.

Station 11060 – Sonde was deployed between 1130 and 1145 CST. As at other stations, level and flow were reduced. Not much algae were observed. Water color was brown with suspended sediments but no odors. A film or scum was on the surface and some had collected into small mats. Secchi disc depth was 1.5 feet. No activity was observed at this station. Winds remained 20 to 25 from the south and conditions were partly cloudy. Temperature ranged from 31 to 32C. Water chemistry and velocity were measured between 1300 and 1330. The sonde was retrieved between 1200 and 1215 CST on 13 June.

Station 17446 – Sonde was deployed between 1215 and 1230 CST. Water level is up at this station due to the industries of beaver. In May, and early June, a dam was observed at riprap at a pipeline crossing diverting flow through a smaller channel on the east side of the stream. At this visit, it appeared that the creature has now dammed the smaller channel and all water is flowing over the primary dam, though flow is slight. The area below the beaver dam also shows signs of no flow, giving rise to potential other dams down stream. An attempt to wade downstream was made but the bottom was too mucky to get far and time was critical. Water was green in color but no odors were detected. Winds were south at 20 to 25 mph and partly cloudy conditions remained. Temperature was 31C. Water samples and velocity measurements were made at the time of deployment, between 1245 and 1315 CST. The sonde was retrieved on 13 June, between 1315 and 1330 CST. Prior to arriving at this station, weather conditions had been mostly sunny with calm winds. At the time we arrived at this station to retrieve the sonde, skies were darkening rapidly from the north. While in the water retrieving the sonde, winds shifted from calm to 20 to 25 mph from the north and temperatures dropped from 33C to 28C in seconds. Heavy rains hit the area just after the station had been exited.

Station 17454 – water chemistry, velocity, photos and field notes were made at this station on 12 June 2002 between 1415 and 1500. Water was cloudy and no algae were observed. No odors were detected. Though diminished since May, velocity is still elevated. Weather conditions were partly cloudy, south winds 20 to 25 mph and 33C.

24 Hour Modeling support CFT –June 2002 (documenting cancellation of survey)

On 24 June 2002, Jeff Stroebel, Thad Scott, Jeff Brister and Tim Jones deployed YSI multiprobe sondes and ISCO 3700 automated samplers Segment 0831, Clear Fork Trinity, at CFT stations 17444, 11060 and 17447. Sondes only were deployed at 13691 and 17446. ISCO automated samplers were programmed to collect 5 liters of water every 6 hours beginning at 1100 CDT and YSI datasondes were programmed to collect DO, pH, specific conductivity and water temperature at 15-minute intervals. In addition, 24-hour grab samples, including, sonde data where no sondes were deployed, were collected at 6-hour intervals. Stations at which 24 – hour grab samples were collected included, 17446 (water only), 17450 (all), 17637 (all) (a new station requested by the TNRCC), 17458 (omitted due to lack of sufficient flow), 17445 (all), 17448 (all) and 13691 (water only). Sample retrieval began at 1200 CDT at 174446 on 24 June and was

completed at 0810 CDT at 13691 on 25 June. All automated stations worked with out fail and all data were successfully collected. Retrieval of automated equipment was completed at 1330 CDT. Equipment was returned to the motel, recalibrated and reprogrammed for a second deployment in the South Fork of the CFT. At approximately 1600 CDT, a thunderstorm struck the area around Willow Park in the CFT watershed and traveled south across the South Fork between Weatherford and Aledo, concentrating in intensity around Annetta. The storm produced rainfall sufficient enough to cause a substantial rise the water level in the South Fork. This runoff event subsequently resulted in the canceling of the monitoring, scrapping the previous days effort. Prior to discovering the impact on the South Fork, an ISCO sampler and YSI sonde had already been deployed at Station 17449 (City of Weatherford WWTP), as rain had occurred in the city. Traveling through the watershed to deploy an automated system at Station 17454, elevated flow conditions and substantial evidence of heavy runoff was observed (Fig.1).

Figure 1. – South Fork at FM5 in Annetta, Texas.

Upon discovering the change in the water conditions, Dr. Larry Hauck was consulted at TIAER and he made the decision that all facets of the monitoring be scratched, including the time of travel study being conducted by Jeff Stroebel and Thad Scott at Station 17444. This team was contacted and the equipment was removed from the field. The effort has been rescheduled pending subsidence of the water levels and an extended period of no rainfall.

Station 13691 – Sonde was deployed at 0814 CST on 24 June 2002. Grab samples for chemistry analyses were collected at 1308, 1908, 0108 and 0708 CST. The Secchi disc reading was 2.25 feet both at deployment and retrieval in 2.75 feet of water. Winds were calm and skies were sunny throughout the study. Temperature ranged from 22 to 35.5C during the 24-hour period. No one was present at the time of deployment but there were signs of fishing activities, e.g. campfires, rod supports and lots of trash. Water level and velocity were diminished since the last visit on 13 June. The two seeps observed upstream of transect B were still quite active. Water color was green to olive brown and but appeared to be more affected by algae that suspended sediments as previously noted, no odors were detected. The sonde was

retrieved on 25 June 0833 CST. There was less sediment on the casing than at the last deployment in mid-June. Velocity measurements were made at 0800 on 24 June. The sonde deployment was successful.

Station 17444 – a YSI sonde and an ISCO automated sampler were deployed at 0836 CST on 24 June 2002. Water samples were collected at 6 hour intervals for 24-hours beginning at 1100 CST. Water levels and velocity continue to fall. Water was turbid with sediments and the color was green to olive. No odors were detected. Secchi disc depth ranged from 1.3 (24^{th}) to 1.75 (25^{th}) feet. Algae (possibly Cyanobacteria) were still evident on some sandbars that were out of the water. Algae were attached to gravel substrate in shallow water. Velocity measurements were made around 0845 on 24 June. Winds were calm and skies were sunny. Temperature ranged from 25 to 30 C while present. The sonde was retrieved after the 0915 reading on 25 June 2002.

Station 17445 – no sonde was deployed at this station. Level and flow were some lower than in mid-June. Attached algae were abundant in the pool and riffle beneath the bridge. The water gap was repaired though no cattle were observed in the water there was free access to the water, very little evidence of cattle was observed at this time. Water was clear no odors were detected. Winds were calm and skies were sunny. Temperatures ranged from 22 C to 37C. A velocity measurement was made around 1800 on 24 June. Samples were collected at 6-hour intervals beginning on 24 June at 1220 and ending on 25 June at 0620.

Station 11060 – a YSI datasonde and an ISCO automated sampler were deployed at 0945 CST on 24 June 2002. As at other stations, level and flow were reduced. Algae were rare if present. Water color was brown with suspended sediments but no odors. A film or scum was on the surface. Secchi disc depth ranged from 1.6 to 2.1 feet at deployment and retrieval respectively. No human activity was observed at this station. Winds were calm and skies were sunny. Temperature ranged from 29 to 30.5C at the times this station was visited. Water chemistry samples were collected automatically at 1100, 1700, 2300 and 0500 CST. Sonde data were collected at 15-minute intervals from 1015 on 24 June to 1100 on 25 June.

Station 17446 – a sonde was deployed at 1025 CST on 24 June. Grab samples were collected at this station beginning at 1100 CST on 24 June and ending at 0500 CST on 25 June. Secchi disc depth ranged from 1.5 feet on 24 June to 2.75 feet on 25 June in 4.5 feet of water. Water was green in color but no odors were detected. Winds were calm and skies were cloudy during most of the sampling time but at the time the sonde was retrieved on 25 June, skies were mostly cloudy and winds were 15 – 20 from the northwest. Temperature ranged from 24 to 34 C during the 24-hour period. Velocity measurements were made on 24 June at 1049 CST. The sonde was retrieved on 25 June at 1245 CST. The water level continues to be elevated in the pool above the riprap due to the industries of beaver. At this visit, the water in the stream below the beaver dam was showing some signs of flow and the level was lower than observed in May and mid-June by about 18-inches. On 19 June, it was discovered that the golf course construction down stream of 17446 included a low water dam just upstream of Crown Road. This had caused water to back up to the beaver dam. It was not determined what if any effect the course construction had on the lowering of the water level below the beaver dam.

Station 17458 – this station is in Squaw Creek, a tributary to the Clear Fork that enters from the east just above IH 20. The first visit to this station on 24 June at 1120 made it evident that there was insufficient flow at this station to require it to be monitored. No subsequent visits were made to this station.

Station 17447 - a YSI datasonde and an ISCO automated sampler were deployed at 0914 CST on 24 June 2002. This was the first visit to this location. Water color was clear and no odors were detected until the sediments in the small pool in which the sonde was deployed were disturbed. Winds were calm and skies were sunny. Temperature ranged from 24 to 30.5C at the times this station was visited. Water chemistry samples were collected automatically at 1100, 1700, 2300 and 0500 CST. Sonde data were collected at 15-minute intervals from 0930 on 24 June to 1000 on 25 June.

Station 17448 – grabs samples were collected at this station every 6 hours for 24 hours beginning at 1242 CST on 24 June 2002. This station is located at the City of Aledo WWTP. Sonde and water grabs were collected in the effluent of the WWTP and level data was read from the 90° V-notched weir for

computation of flow. Weather was clear and calm for the study period and temperatures ranged from 24 to 32 C. Over all the output of the plant was low, with flow ranging from .819 to .223 CFS.

Station 17450 - grabs samples were collected at this station every 6 hours for 24 hours beginning at 1115 CST on 24 June 2002. This station is located at the City of Willow Park WWTP. Sonde and water grabs were collected in the effluent of the WWTP and level data was read from the 90° V-notched weir for computation of flow. Weather was clear and calm for the study period and temperatures ranged from 24 to 33.5 C. Over all the output of the plant was low, with flow ranging from .002

Third Intensive Survey – 23 July – 1 August 2002- Clear Fork Trinity Project

Segment 0831 monitoring occurred between 30 July and 2 August 2001.

Station 17446 – On 30 July 2002, TIAER field personnel performed a habitat assessment and biological sampling effort at this location. Location of transects is described in the May intensive survey. The investigation began at approximately 1145 CST and ended around 1645 CST. Water transparency in the deepest pool where the data sonde was deployed for the 24-hour DO measurement was measured at 2.5 feet at a maximum depth of 4 feet. Water color was green-gray in the pools below the road crossing. In the large pool above the road crossing water color was brown suggesting influence from suspended solids, possibly stirred up by large carp that inhabit the pool. No noxious water odors were detected at the station, even when sediments were disturbed. Meteorological conditions were partly cloudy with south winds 5 - 10 mph and temperature around 35C. While at the station, a brief, moderately heavy shower moved through the station, however no runoff was observed.

Habitat assessments were performed at each of the five transects, benthic samples were collected by 5-minute kick net in the riffle at Transect B and fish were collected using seines, electroshock, and gill net methods (see monitoring plan). All fish were identified and returned to the stream. Benthic samples were preserved and return to the lab for identification. In addition to the biological data, water chemistry samples (31 July), velocity measurements, and physicochemical parameters were collected, and photographs were taken at each transect and upstream and downstream from the midpoint of the reach. 24-hour dissolved oxygen values were measured at 15 minute intervals beginning on 30 July and retrieved on 31 July 2002. The water chemistry samples were collected on 31 July prior to the sonde retrieval to alleviate logistical problems created by holding times.

Golf course construction continues to occur downstream of the station. The beaver dam at Transect A has raised the water level in the pool several inches and a low water dam at the far end of the golf course has pooled water back to the beaver dam. Algae mats both submerged and floating occur in the pool below the beaver dam.

Station 17445 - Clear Fork at Underwood Rd. west of Aledo. A sonde was deployed at this station on 30 July at 0948 CST. TIAER field staff began the intensive survey at this station on 31 July at approximately 0745 CST. Water transparencies in the pool in which the data sonde was deployed for 24-hour DO monitoring was 1.3 feet, in a total depth of 2 feet. Water is clear, but with a grayish green tint. Algae were abundant at most cross sections but only common in the riffle. The upstream had a less impacted riparian zone that the reach downstream of the bridge, owing to the fact that a sizable cattle herd live in the riparian zone downstream. The reach below the bridge inhabited by the cattle had a definite odor. Trails are evident on the banks at this point and vegetation is worn away, opening opportunities for extensive erosion. Winds were south at 10 - 15 mph, under sunny conditions and temperatures ranged from 29 to 37 C while at the station. Efforts at this station were concluded at approximately 1430.

Habitat assessments were performed at each of the five transects, benthic samples were collected by 5-minute kick net in the riffle and fish were collected using seines and electroshock (see monitoring plan). All fish were identified in the field and returned to the stream. Benthic samples were preserved and returned to the lab for further analysis. In addition to the biological data, water chemistry samples, velocity measurements, and physicochemical parameters were collected, and photographs were taken at each

transect and upstream and downstream from the midpoint of the reach. 24-hour dissolved oxygen values at 15-minute intervals were also measured between 30 and 31 July.

Other than the cattle, other human impacts were not evident. Attached algae, that had been absent in May 2002 was reestablished to levels observed in August 2001. Sufficient benthic organisms were found and a fair number of fish species collected.

Station 17454 - the lowest point of the South Fork of the Clear Fork prior to the confluence with the Clear Fork. Water transparency of 0.9 feet was recorded in a total depth of 3.8 feet. Though no unusual color or odors were noted, the water was still very turbid with suspended solids. Algae were observed but not common. Weather consisted of south winds 5 – 10 mph under sunny skies and a temperature of 32 C on 31 July.

At this station, a data sonde was deployed on 7 May at 1100 CST and retrieved on 8 May at 1751. Also on 8 May, velocity measurements, water chemistry samples and physicochemical measurements were collected. Additionally, a photographic record and field notes were collected.

Flow was down from previous visits this year but the station remains turbid, presumably from construction of a golf course upstream.

Station 11060 - Clear Fork at IH20. The intensive survey at this station was begun on 31 May at approximately 0830 CST. The sonde had been deployed on 30 July at 1058 CST. The cross sections are described in the May 2002 anecdotal record. Water transparency at the pool where the data sonde was set was recorded as 1 - 1.5 feet with a total depth of 2.2 feet. Water color was brownish and turbid in pools and glides but clear at the shallower stations. No offensive odors were detected. The water pipeline buried across the stream just below the railroad bridge that crosses between Transects A and B is acting as a dam and has backed up the water to transect B forming a glide instead of a run. The stream has recovered somewhat since the construction has been completed. Algae were very abundant at the lower transects but less common upstream where the canopy shades the water. Winds were calm and skies were partly cloudy. Temperatures ranged from 27 to 32 C.

Habitat assessments were performed at each of the five transects, benthic samples were collected by 5-minute kick net in the riffle at Transect C and fish were collected using seines and electroshock (see monitoring plan). All fish were identified and returned to the stream. Benthic samples were preserved and returned to the lab for identification. In addition to the biological data, water chemistry samples, velocity measurements, and physicochemical parameters were collected, and photographs were taken at each transect and upstream and downstream from the midpoint of the reach. 24-hour dissolved oxygen values were measured at 15-minute intervals beginning on 30 July and retrieved on 31 July at 1452 CST.

This station is natural but not aesthetically pleasing. Water is slow moving and turbid and trash washes downstream from IH 20. Some fishing occurs but does not appear to be a problem.

Station 17444 - Clear Fork at FM5 southwest of Aledo. The intensive survey began on 1 August 2002 at 0801 CST with the deployment of a sonde and a grab sample collection. The five transects, described in the May anecdotal record, were used for this effort. Water transparency, taken in the pool where the data sonde was deployed was 1.3 feet at a total depth of 3.6 feet. Color was green to olive and turbid. Flow was considerably diminished from the previous sampling visit. Algae were rare at all transects, reducing overall habitat for fish. Overall habitat for benthic organisms was very poor and habitat for fish was minimal (see habitat assessment). No odors noxious were detected. Generally, the station was clean of trash except for a submerged tire and some appliance parts embedded at the station near Transect E. Weather conditions were sunny with south winds at 5 - 10 mph and a temperature range of 27.5 to 35 C.

Habitat assessments were performed at each of the five transects, benthic samples were collected by 5-minute kick net in a riffle between Transects A and B. Fish were collected using seines and electroshock (see monitoring plan). All fish were identified in the field and returned to the stream. Benthic samples were preserved and returned to the lab for identification. In addition to the biological data, water chemistry

samples, velocity measurements, and physicochemical parameters were collected, and photographs were taken at each transect and upstream and downstream from the midpoint of the reach. 24-hour dissolved oxygen values were measured at 15-minute intervals beginning on 1 August and retrieved on 2 August 2002.

There were little evidence of human use at this location, except at the pool at Transect A where a large borrow pit had been dug in one corner of the pool, presumably for sand. The bank had been cleared at this point and there was evidence of an old road down to the stream at this point.

Station 13691 - The intensive survey began on 1 August at 0829 CST with the collection of a water quality grab sample. The 75-m spaced transects were described in the May intensive survey report. Water transparency where the data sonde was deployed was 2.5-feet in a total depth of 2. 5-feet. The water color was mostly green but clear. No unusual odors were detected. Unlike May 2002, attached algae were common to abundant at all transects. The riparian zone for this station was the least impacted observed in Segment 0831. As the entire study area lies within US Army Corps of Engineers property and is in the flood plain, no development has occurred. To the west, the riparian buffer exceeded 200 meters, while to the east it appeared to extend approximately 75 meters where it is bounded by a road. Weather conditions were sunny with south winds 5 to 10 mph and temperatures ranging from 28 to 37 C.

Habitat assessments were performed at each of the five transects, benthic samples were collected by 5-minute kick net in a riffle and fish were collected using seines and electroshock (see monitoring plan). All but two fish specimens were identified and returned to the stream. The tow specimens and benthic samples were preserved and returned to the lab for identification. All available habitats were worked for collecting fish. Six seine hauls were made of at least 10 m while electroshocking was performed for 1943 seconds. More species and specimens were observed since the May 2002 sampling effort In addition to the biological data, water chemistry samples, velocity measurements, and physicochemical parameters were collected, and photographs were taken at each transect and upstream and downstream from the midpoint of the reach. 24-hour dissolved oxygen values were measured at 15-minute intervals beginning on 1 August and retrieved on 2 August 2002.

There were no impacts observed related to agriculture or urban development. The station appears to be frequented by fishermen or loiterers, as there are still evidences of campfires and litter, bottles, cans, boxes and the like, possibly more that observed in May. Other than the trash, the station is relatively natural in its appearance.

Habitat assessment and biological sampling was completed by approximately 1530 CST.

Supplemental Survey 20 through 22 August 2002

Tim Jones, Jeff Stroebel, Abel Martinez and Jeff Brister performed a supplemental survey in segment 0831 on 20 and 21 August in concert with a dissolved oxygen modeling effort. Velocity measurements, physiochemical data, photographs and anecdotal annotations were collected at Stations 17446, 11060, 17445, 17454, 17444 and 13691.

Station 17446
Flow appeared normal, compared to previous visits, at the riffle below the dam. Velocity was measured at the head of the riffle below the bridge and below the confluence of a small tributary that flows into the stream from the west. Sonde data were collected between 0921 CST. Dominant substrate was cobble to bolder sized rocks embedded in gravel. Water transparency was good with almost no turbidity, water in the riffles appeared clear with no color water in the pool was green-blue but clear to approximately 2 feet. No odor was detected. Construction on the golf courses downstream of the monitoring station continues and the riparian area remains altered. Aquatic macrophytes were common and algae were abundant though no aquatic invertebrates were observed. The beaver dam at the riprap area at transect A remains intact. Water appears pooled both upstream and downstream of the beaver dam. Below the beaver dam, floating algae

were abundant. Weather conditions were partly cloudy with south wind of 10-15 mph with an air temperature of 30.5 C.

Station 11060
This station is immediately downstream of IH20. Sonde data collection occurred at 1025 CST and velocity measurements collected between 1230 and 1242 CST. Flow was low at this station. Substrate at the station of data collection was predominately gravel. Algae were common and some macrophytes were present. Water was turbid in the upstream reach with a tan-brown tint and a film of "scum" covering the large pool immediately downstream of IH20 but very clear in the pool just above transect C. The bottom of this pool was covered with algae but the water was very clear. The bank and gravel bar at the midpoint of the reach showed is totally revegetated. Weather conditions were clear and calm with an air temperature of 30.5 C.

Station 17445
Data were collected on 20 August 2002, with sonde data being collected at 1153 CST and velocity measurements collected between 1245 and 1315 CST. Predominant substrate is sand with small shell fragments embedded, very unstable bottom except for cobble riffle beneath bridge. Abundant algae and few macrophytes were observed along stream bank and abundant algae were observed attached to rocks and logs in stream bottom of pools. Downstream of the bridge, the water gap fence remained intact. Water color was mostly clear even in pools. Transparency was to the bottom where observed. No odors were detected. Signs that cattle had been visiting the stream were present. Weather conditions were clear and calm. Air temperature was 31.5 C.

Station 17454
This station is located near the mouth of the South Fork of the Clear Fork Trinity approximately 25 meters upstream of the confluence. Flow is more elevated than the mainstem of the Clear Fork but considerably reduced from earlier visits. Velocity measurements were made at 1355 CST on 20 August. Sonde data were collected at 0945 CST. Water color was a brown-green and turbid with transparency to about 1 foot. No unusual odor was evident. Predominant substrate was large gravel with some sand. Algae were rare at this visit. Weather conditions were partly with a south wind of 5 - 10 mph and a temperature of 32 C.

Station 17444
Flow and water level was visibly lower than the previous visit on 1 August. Much of the stream bed was exposed along the entire reach. Velocity measurements were collected at a location that was suitable for the activity on 20 August between 1050 and 1100. Sonde data were collected at 0857 CST. Water was turbid with a brown to green color. No odor was detected. The substrate at this station is mostly sand and very fine gravel. This substrate is very unstable and provides little for attachment. Some attached algae were observed. Weather conditions were partly cloudy with a south wind of 5 - 10 mph and an air temperature of 29 C.

Station 13691
Flow was low, reduced from the last visit on 1 August 2002. The falls at the top of the reach were prominent. Sonde data and photographs were collected around 1223 CST while velocity measurements were made from 1530 to 1540 CST. Water was clear to the bottom of the uppermost pool. Algae were abundant and attached to substrate. A considerable quantity of floating algae was observed along the shoreline. Some aquatic insects and several fish, carp and lepomids, were observed in the pooled area. No fishermen were observed but refuse from their visits is abundant. No unusual odors were detected. Weather conditions were partly cloudy with a south wind of 15 - 20 mph. Air temperature was 34.5 C.

Supplemental Survey 23 September 2002

Station 13691
Flow was elevated above the level observed in August 2002 and evidence of a rise in water level was exhibited by remnants of filamentous algae on the gravel bars and mud deposits. Physiochemical data were collected at 0850 CST. Velocity was measured. Photographs were taken in both upstream and downstream

views from the midpoint of the reach. Water was clear and no odors were detected. Algae were attached to substrate but were not abundant. Some aquatic insects and small fish were observed. No fishermen were observed but trash remains the primary detractor to the aesthetics of the station. Weather conditions were clear and calm.

Station 17444
Flow and water level was elevated at this station above the August visit and evidence of elevated flow was exhibited by mud deposits on the exposed substrate. Velocity measurements were collected at a location that was suitable for the activity. Physiochemical data were collected at 0917 CST. Water was transparent in the shallow areas but somewhat cloudy in pooled areas. No odor was detected. The substrate at this station is mostly sand and very fine gravel. This substrate is very unstable and provides little for attachment. No algae or in stream macrophytes were observed. Weather conditions were clear and calm.

Station 17445
Physiochemical data collection occurred at 0934 CST. Predominant substrate is sand with small shell fragments embedded, very unstable bottom except for cobble riffle beneath bridge. Some algae and few macrophytes were observed along stream bank and some algae were observed attached to rocks and logs in stream bottom. Downstream of the bridge, the water gap positioned to keep cattle downstream was down again. Several cattle were observed in the stream below the water gap and one cow was on the upstream side of the fence when we arrived, though she crossed back down stream when we approached the station. Water color was gray-green in the depths downstream and turbid due to the cattle crossing. Upstream, the water was clear in all habitats. No odors were detected, although we did not cross the water gap to the area inhabited by the cattle. Weather conditions were clear with a northeast wind of 5 - 10 mph.

Station 17454
This station is located near the mouth of the South Fork of the Clear Fork Trinity approximately 25 meters upstream of the confluence. Flow was somewhat elevated but similar to the August sampling trip, the rock ledge at which velocity measurements are initially made was still partially submerged. Velocity measurements were collected and physiochemical data were collected 0948 CST. Water color was a brown and very turbid, though no unusual odor was evident. Predominant substrate was large gravel with some sand. Algae rare but some were observed at the edge of the streambed. Weather conditions were clear with a northeast wind of 5 - 10 mph.

Station 11060
This station is immediately downstream of IH20. Physiochemical data collection occurred at this station at 1039 CST. Flow was moderate at this station, and no evidence of a rise was observed. Substrate at the station of data collection was predominately gravel. Algae were present but not common and some macrophytes were observed. Water was slightly turbid in the pooled areas. No unusual odors were detected. Riffles were present and showed no signs of scouring. Weather conditions were clear with a northeast wind of 0 - 5 mph.

Station 17446
Flow appeared normal at the riffle below the dam. Velocity was measured at the head of the riffle below the bridge and below the confluence of a small tributary that flows into the stream from the west. Physiochemical data were collected at 1059 CST. Dominant substrate was cobble to bolder sized rocks embedded in gravel. Water transparency was good with almost no turbidity, water in the riffles appeared clear with no color, while water in the pool was green-blue but clear to approximately 2 feet. No odor was detected. Construction on the golf courses downstream of the monitoring station continues and the riparian area remains altered. Aquatic macrophytes were common and algae were abundant. The beaver dam at the lower end of the reach is still intact and almost completely vegetated. Water below the beaver dam is pooled and covered with algal mats. Weather conditions were clear with a northeast wind of 5 - 10 mph.