March 6, 2006

OPA

MAR 0 9 2006

BY

The Office of the Chief Clerk
MC 105
TCEQ
P.O. Box 13087
Austin, TX 78711-3087

RE: Permit Application No. 5821
Upper Trinity Regional Water District

WR 13832

I am writing today to request a contested case hearing in the matter of the above referenced permit application.

I am a landowner living northeast of Ladonia, the area affected by the proposed reservoir site. I have lived here for over six years now without any water system available to me. I truck in water for my family from my business in Hunt County. Even so, I oppose the construction of this lake for many reasons: 1)It would take part or all of my property,2) it would restrict use of any property I have left, 3) it would cause my property taxes to escalate, 4) it would produce noise, pollution, and traffic (reasons I left Dallas), and finally, 5) Fannin County would hardly benefit for all the pain involved.

My property is located off 1550, between 2990 and 34.

Again, I respectfully request a contested case hearing be held so I may personally address my concerns for the future of my land, my home, and my rural lifestyle.

Sincerely,

Mr. John S. Adams
(903) 367-7371

Physical Address:
1459 CR 3365
Ladonia, TX 75449

Mailing Address:
P.O. Box 174
Ladonia, TX 75449

2006 MAR -9 AM 9:56
CHIEF CLERKS OFFICE

A
John Adams
P.O. Box 174
Ladonia, TX 75449-0174

NORTH TEXAS PROC
TX 750 2 L
06 MAR 2006 PM

The Office of the Chief Clerk
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Austin, TX 78711-3087

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March 6, 2006

OPA

MAR 0 9 2006

BY

The Office of the Chief Clerk
MC 105
TCEQ
P.O. Box 13087
Austin, TX 78711-3087

2006 MAR -9 AM 9:56
CHIEF CLERKS OFFICE

RE: Permit Application No. 5821
Upper Trinity Regional Water District

I am writing today to request a contested case hearing in the matter of the above referenced permit application.

I am a landowner living northeast of Ladonia, the area affected by the proposed reservoir site. Should Upper Trinity Regional Water District receive a permit to build Lake Ralph Hall, Davis Creek, which runs along the back of my property, would overflow onto my land and flood 20 to 30 acres. Tom Taylor has said that should be permit be granted, he would consider expanding the scope of the lake, therefore, most likely taking the rest of my property.

My property is located off 1550, between 2990 and 34.

Again, I respectfully request a contested case hearing be held so I may personally address my concerns for the future of my land and my home.

Sincerely,

Mrs. Leslie A. Adams
(903) 367-7371

Physical Address:
1459 CR 3365
Ladonia, TX 75449

Mailing Address:
P.O. Box 174
Ladonia, TX 75449

Mrs. Leslie Adams
P.O. Box 174
Ladonia, TX 75449

NORTH TEXAS 0800

TX 750 2 L
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Jeff Barnett
14812 E. FM 1550
Honey Grove, TX 75446

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
2006 MAR 13 AM 9: 50
CHIEF CLERKS OFFICE

March 8, 2006

HR OPA
MAR 13 2006
BY

The Office of the Chief Clerk
MC 105
TCEQ
P.O. Box 13087
Austin, TX 78711-3087

WR 13832

Dear Sir:

My name is Jeff Barnett and my mailing address is 14812 E. FM 1550, Honey Grove, TX 75449 and my cell phone number is (903) 583-0771.

I am writing this letter in reference to the Upper Trinity Regional Water District and the permit application number 5821.

I, Jeff Barnett, request a contested case hearing

My land has been in my family for 6 generations. This land is precious to me and my family and we do not want to lose this heritage that I plan to pass on to my heirs.

My land is in the immediate vicinity of the dam.

Sincerely,

Jeff Barnett
Concerned Landowner

Jeff Barnett
14812 E. FM 1550
Honey Grove, TX 75446

TX 750 7 L
09 MAR 2006 PM

The Office of the Chief Clerk
MC 105
TCEQ
P.O. Box 13087
Austin, TX 78711-3087

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TEXAS COMMITTEE ON NATURAL RESOURCES
3532 Bee Caves Road, Suite 110
Austin, Texas 78746
512-327-4119

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

2006 MAR 16 PM 3:05

CHIEF CLERKS OFFICE

March 14, 2006

HR OPA
MAR 17 2006
BY

Ms. LaDonna Castañuela, Chief Clerk
Texas Commission on Environmental Quality
Office of the Chief Clerk
MC 105
P.O. Box 13087
Austin, TX 78711-3087

WR/43832

Dear Ms. Castañuela:

Texas Committee on Natural Resources (TCONR) requests that the Texas Commission on Environmental Quality conduct a contested case hearing on Application No. 5821. Application No. 5821 is a permit request by the Upper Trinity Regional Water District to construct a reservoir call Ralph Hall Lake on the North Sulphur River in the Sulphur River Basin in Fannin County.

TCONR also requests to be named as a party in the contested case hearing re Application No. 5821. Texas Committee on Natural Resources is a thirty-five-year-old statewide conservation organization with a long history of addressing water development issues.

TCONR has members whose land will be inundated if Ralph Hall Lake is built. In addition, we also have members downstream of the Ralph Hall Lake site whose land could be taken as mitigation for the reservoir if it is built.

Any notices should be sent or questions addressed to me as TCONR's executive director at the following address

Janice Bezanson, Executive Director
Texas Committee on Natural Resources (TCONR)
3532 Bee Caves Road, Suite 110
Austin, TX 78746
512-327-4119
Fax 512-857-0594
bezanson@texas.net

It is our understanding that the contested case hearing, if granted, will consider only issues that have been brought to TCEQ's attention by interested parties or members of the public. Therefore we attach below a list of issues of concern to TCONR.

Issues to be considered in a contested case hearing on Permit No. 5921:

- Impacts on both aquatic and terrestrial wildlife habitat, both from building the reservoir and from diverting water that otherwise would have supplemented downstream flows
- Mitigation for impacts on wildlife habitat and for reduction in environmental flows
- All requirements for interbasin transfers
- Condemnation of land, both for the reservoir and as mitigation sites
- Requirements that the project be consistent with the long-term protection of the state's water resources, agricultural resources, and natural resources
- Economic impacts to timber industry, agribusiness industry, landowners for whom hunting leases are a major revenue, and other economic impacts
- Cost of water from Ralph Hall Lake compared to other potential sources of water, particularly compared with increased water use efficiency (conservation), reuse of current supply (recyled water), and use of unused water from existing reservoirs whose impacts have already occurred.
- The cumulative impacts of Ralph Hall Lake and the two existing reservoirs in the Sulphur Basin
- The cumulative impacts of Ralph Hall Lake and other reservoir projects proposed for the Sulphur Basin, namely Marvin Nichols and George Parkhouse Reservoirs
- Effect on the International Paper plant downstream of reducing the flood flows
- Loss of archeological and historical artifacts
- Movement of cemeteries

Thank you for your consideration of our request.

Sincerely,

Janice Bezanson

Janice Bezanson
Executive Director

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3532 Bee Caves Road, Suite 110, Austin, Texas 7874

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Ms. La Donna Castañuela
Office of the Chief Clerk
TCEQ, MC 105
P.O. Box 13087
Austin, Tx 7[redacted]
78711-3087

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78711+3087-87 B012

(Gave formal oral comment
Submitted written comments.

(2)

TCEQ Public Participation Form
Upper Trinity Regional Water District
Public Meeting
Proposed Water Use Permit
Application No. 5821
Monday, March 27, 2006

OPA RECEIVED

MAR 27 2006

AT PUBLIC MEETING

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
2006 APR -6 PM 1:24
CHIEF CLERKS OFFICE

PLEASE PRINT:

Name: Janice Bezanson

Address: 3532 Bee Caves Road Suite 110

City/State: Austin TX Zip: 78746

Phone: (512) 327-4119

☒ Please add me to the mailing list.

Are you here today representing a municipality, legislator, agency, or group? ☒ Yes ☐ No

If yes, which one? Texas Committee on Natural Resources

IF YOU WANT TO GIVE FORMAL COMMENT PLEASE ✓BELOW

☒ I wish to provide formal oral comments.

☒ I wish to provide formal written comments at tonight's public meeting.

(Written comments may be submitted any time during the meeting.)

Please give this to the person at the information table. Thank you.

TEXAS COMMITTEE ON NATURAL RESOURCES
3532 Bee Caves Road, Suite 110
Austin, Texas 78746
512-327-4119

43832
WR.

March 27, 2006

OPA RECEIVED

MAR 2 7 2006

AT PUBLIC MEETING

To the Honorable Commissioners and Staff
Texas Commission on Environmental Quality
P.O. Box 13087
Austin, Texas 78711-3087

Texas Committee on Natural Resources (TCONR) has identified the following issues that should be considered in a contested case hearing on Permit No. 5921 by Upper Trinity Regional Water District to build Ralph Hall Lake in Fannin County:

- Condemnation of land, both for the reservoir and as mitigation sites
- Requirements that the project be consistent with the long-term protection of the state's water resources, agricultural resources, and natural resources
- Cost of water from Ralph Hall Lake compared to other potential sources of water, particularly compared with increased water use efficiency (conservation), reuse of current supply (recyled water), and use of unused water from existing reservoirs whose impacts have already occurred.
- Prospect of other entities in DFW area doing joint project, with economies of scale making Ralph Hall Lake very expensive by comparison
- Need for the water for water supply
- Impacts on both aquatic and terrestrial wildlife habitat, both from building the reservoir and from diverting water that otherwise would have supplemented downstream flows
- Mitigation for impacts on wildlife habitat and for reduction in environmental flows
- All requirements for interbasin transfers
- Economic impacts to timber industry, agribusiness industry, landowners for whom hunting leases are a major revenue, and other economic impacts
- The cumulative impacts of Ralph Hall Lake and the two existing reservoirs in the Sulphur Basin
-

Fax 512-857-0594 , bezanson@texas.net, www.tconr.org

List of issues continued

- The cumulative impacts of Ralph Hall Lake and other reservoir projects proposed for the Sulphur Basin, namely Marvin Nichols and George Parkhouse Reservoirs
- Effect on the International Paper plant downstream of reducing the flood flows
- Loss of archeological and historical artifacts
- Movement of cemeteries

We request that TCEQ consider these issues during the permit process for Ralph Hall Lake.

Sincerely,

Janice Bezanson

Janice Bezanson
Executive Director

OPA RECEIVED

MAR 2 7 2006

AT PUBLIC MEETING

NATIONAL WILDLIFE FEDERATION
GULF STATES NATURAL RESOURCE CENTER
44 East Avenue, Suite 200
Austin, Texas 78701
(512) 476-9805
FAX (512) 476-9810
www.nwf.org
NATIONAL WILDLIFE FEDERATION®
www.nwf.org™

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
2006 MAR 22 PM 1:58
CHIEF CLERKS OFFICE

OPA
HR
MAR 2 2 2006
BY

Ms. LaDonna Castañuela
Office of the Chief Clerk, MC 105
Texas Commission on Environmental Quality (TCEQ)
P.O. Box 13087
Austin, Texas 78711-3087

RE: Request for Contested Case Hearing In the Matter of the Upper Trinity Regional Water District's Proposed Application No. 5821.

WR/40832

Dear Ms. Castañuela:

The National Wildlife Federation (NWF) hereby requests a contested case hearing on the above-referenced application through its Gulf States Natural Resource Center. NWF's contact information is:

Christopher Brown
Water Projects Attorney
National Wildlife Federation
44 East Avenue, Suite 200
Austin, TX 78701
Tel. 512-476-9805
Fax: 512-476-9810
E-mail: chrisbrown@nwf.org.

This REQUEST FOR CONTESTED CASE HEARING on the Upper Trinity Regional Water District's (UTRWD's) Application No. 5821 arises from the fact that UTRWD's permit application, if granted, would affect NWF in a manner not common to the general public. NWF is a national, non-profit organization that dedicates itself to protecting natural resources and the right of people to use and enjoy them. NWF's members share these goals. Approximately 38,000 people belong to NWF in Texas. Many of these NWF members use and enjoy Texas' water, fish, and wildlife resources, including those of the Sulphur River Basin.

The Gulf States Natural Resource Center is a regional office of NWF and is located in Austin, Texas. One of the primary functions of the office is the implementation of a program to ensure adequate protection of stream and river flows to support fish and wildlife resources in Texas. NWF is pursuing that goal through a variety of avenues, including the filing of this hearing request.

UTRWD seeks authorization to construct and maintain a dam and reservoir known as Lake Ralph Hall on the North Sulphur River, a tributary of the Sulphur River in the Sulphur River Basin located in Fannin County. Applicant also seeks to divert and use not to exceed 45,000 acre feet of water per year from one or more diversion points on the perimeter of Lake Ralph Hall for municipal, industrial, and agricultural purposes. UTRWD seeks to use the water within its service area in all or parts of Collin, Cooke, Dallas, Denton, Fannin, Grayson, and Wise Counties within the Trinity and Sulphur River Basins, and also seeks a request for the interbasin transfer of water pursuant to Tex. Water Code §11.085. Applicant indicates diversions from the reservoir may be "overdrafted" as a part of the system operation with existing district supplies from other basins to achieve maximum use of limited water resources.

The significant diversion and impoundment of flows from the North Sulphur River that UTRWD proposes in this application has the potential to adversely affect the fish and wildlife of the Sulphur River Basin, therefore adversely affecting the interests of NWF and its members. If the TCEQ grants UTRWD's permit amendment application without adequate permit conditions, NWF's interests in protecting fish and wildlife resources would suffer adverse effects, as would NWF's interest in protecting the ability of its members to use and enjoy the natural resources found in the Sulphur River Basin. NWF members would therefore suffer adverse effects as well.

NWF seeks to participate in the permitting process to ensure the development and inclusion of appropriate environmental flow and habitat mitigation conditions in any authorization that may be granted. NWF also seeks to participate in order to ensure that strong water efficiency and drought management measures are implemented in the UTRWD's service area in order to ensure that the proposed diversion and impoundment are actually necessary, and that the state's water is used in a manner consistent with the public welfare and without waste. NWF also seeks participation to ensure that the interbasin transfer proposed in UTRWD's application strictly complies with the Texas Water Code and TCEQ regulations. NWF will be glad to discuss permit provisions and other measures that, if included in any permit which might be granted, would make it possible for NWF to withdraw its hearing request.

Please contact me at the telephone number, physical address, or email address listed above if you have questions or need additional information.

Sincerely,

Christopher Brown
Texas Bar Number 90000883
Water Projects Attorney

OPA

MAR 03 2006

BY

2006 MAR -3 AM 10:10

CHIEF CLERKS OFFICE

WR 4383 2

The Office of the Chief Clerk
MC 105 TCEQ
P. O. Box 13087
Austin, TX 78711-3087

February 28, 2006

Office of the Chief Clerk:

Re: Application No. 5821, Upper Trinity Regional Water District, for building Ralph Hall Lake

We are landowners along the North Sulphur River in the proposed area concerned with mitigation and the water development area for the proposed Ralph Hall Reservoir. We would like to first thank you for letting us air our feelings and for your support against the planned reservoir.

We have built our life on our 42 acres of land. We built our home and raised our three children and eight grandchildren here and are looking forward to retirement. The actions of Leon Hurst and the Upper Trinity Regional Water District have turned our lives upside down at this point.

We do not want to relocate just because a few greedy people want what amounts to more money in their pockets. We know if our land is taken from us for a few dollars an acre for the building of this lake it can be sold at a much higher price, a profit to a few, but not us. Why would anyone in their right mind think we would not oppose such a setup?

Also, if we are not made to sell, we do not want the type of life a lake would bring to our area. We have seen other areas after lakes have been formed and do not like what becomes of it. A lake built on the North Sulphur would not hold water for very many years before it filled with silt and run-off from the farm land to the west. The area is already washing down the river. This would continue until it filled in the lake. Then Fannin County would have just another big mud puddle.

The proposed lake on lower Bois d' Arc is already on the Region C Water Plan. North Texas Utility District projects by 2020 to be getting water from Lower Bois d'Arc with the probability of 16,000 acres of mitigation land around this lake. Why take more land out of the tax base just to support the metroplex when there are other sources for their water.

As we stated at the beginning we are opposed to the permit, Application No. 5821, being granted, to Upper Trinity Regional Water District. We request a contested case hearing at your earliest convenience.

Tommy Brown

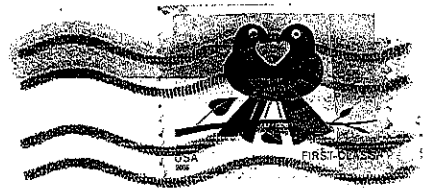
TOMMY BROWN
586 CR 3345
Ladonia, Texas 75449

Gail Brown

GAIL BROWN
586 CR 3345
Ladonia, Texas 75449

Tommy Brown
586 CR 3345
Ladonia, Tx 75449

NORTH TEXAS P&DC
TX 750 6 T
01 MAR 2006 PM



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MC 105 TCEQ
P.O. Box 13087
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TOWN OF DOUBLE OAK
320 WAKETON ROAD
DOUBLE OAK, TEXAS 75077
(972) 539-9464

DOUBLE OAK

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
2006 MAR 22 PM 2:41
CHIEF CLERKS OFFICE

HR

OPA
MAR 23 2006
BY

March 21, 2006

LaDonna Castañuela, Chief Clerk
Texas Commission on Environmental Quality
MC 105
P.O. Box 13087
Austin, TX 78711-3087

WR/5832

RE: Revised Notice of an Application for a Water Use Permit and Public Meetings dated February 8, 2006

Application No. 5821 submitted by the Upper Trinity Regional Water District

Dear Ms. Castañuela,

In accordance with the above referenced notice and application, The Town of Double Oak submits the following information.

Item 1

Name:	The Town of Double Oak
Contact Person:	John Dondrea, Town Councilperson
Mailing Address	320 Waketon Road, Double Oak, TX 75077
Daytime Phone	972-539-9464
Fax	972-539-9613

signature is on list

[redacted]

Item 2

Applicants Name	Upper Trinity Regional Water District
Permit Number	5821

Item 3

The Town of Double Oak requests a contested case hearing.

Item 4

Provided in this item is a brief and specific description of how we would be affected by the application in a way not common to the general public. The Town of Double Oak has three specific reasons for requesting the contested hearing as listed below.

1) Construction cost estimates for Lake Ralph Hall are significantly understated based upon the rapid increase in costs for building materials experienced since the estimates were originally prepared several years ago. Recently, the Upper Trinity Regional Water District analyzed their construction costs associated with a 6-month delay in the construction of the Tom Harpool Water Treatment Plant. Their conclusion was that this delay resulted in a cost increase of $4.1 million. Subsequent to that assessment, construction costs have increased dramatically due to recent price increases in fuel and materials and the effects of the storms and flooding along the Gulf Coast in 2005. Cost estimates for the construction of Lake Ralph Hall should be updated and indexed to construction material inflation rates and the relative cost / benefit relationship should be reevaluated in view of the higher costs and other cost effective alternatives available.

2) The financial position of the UTRWD indicates that they may not have the financial strength necessary to follow through with a project of this magnitude. One of the financial indicators taken from the UTRWD Comprehensive Annual Financial Report (CAFR) as of September 30, 2005 indicated that their Net assets invested in capital assets - net of related debt is a negative $15 million. Simply put, the UTRWD debt exceeds the value of its assets by a considerable margin. Another measure of the fragile nature of the District is the continued losses being incurred in the Regional Treated Water System Segment. In 2005 the System lost in excess of $700 thousand even though there were significant price increases. In 2004 this Segment lost over $3 million. Their current debt of $295 million includes State participation debt owed to the Texas Water Development Board of $55 million plus accrued, unpaid interest of $16 million bringing this portion of the debt to $71 million. Repayment of any principle will not occur until after 2010 (total interest payments on this debt will amount to $78 million over the life of the loan and must be repaid in addition to the loan amount of $55 million.) Additionally, the District has embarked upon a strategy of utilizing the Commercial Paper market (short term borrowing with interest only payments) for other than short term needs. Approval to borrow up to $50 million in this manner has been approved by the Board. The Lake Ralph Hall project was estimated originally at just over $200 million. A revised estimate based upon today's costs will approach the size of the current UTRWD debt. The plans of the UTRWD rely upon being able to obtain an additional $100 million in State Participation funding which has yet to be approved. Several members have asked for audits of the practices and management of the District by an unbiased third party, such as the State Comptroller's Office to gain assurances that these practices are in the best interests of the District. This suggestion has not been acted upon to date. We believe these are vital questions that must be addressed before the District takes on the additional financial burden.

3) The additional water supply is unnecessary due to the inflated population projections, supply reserves, and demand reserves used in the justification process. Comparison of population estimates used by Region C and UTRWD to selected community build-out projections indicate that the Region C/UTRWD population estimates exceed those of the communities by approximately 41%. While a complete analysis of the population data was not possible with the resources and time available, we believe that additional analysis is warranted given the uncertainties involved with forecasting and water utilization outlooks. In addition, the UTRWD Surplus as shown in the 2006 Region C Water Plan is 17% - 35% of their Supply and 20% - 54% of their Demand over the 50 year period shown in the report. The other regional water suppliers show significantly lower ranges for their surpluses of Supply and of Demand. The UTRWD higher than average surplus plus potentially inflated population estimates could significantly overstate the need for Lake Ralph Hall and merits additional investigation before proceeding with the construction of an additional lake.

Item 5

The location and distance of The Town of Double Oak relative to the proposed activity is approximately 80 miles.

On March 20, 2006, The Town of Double Oak authorized the submission of this letter requesting a contested case hearing.

Thank you for consideration of this request for a contested case hearing.

Sincerely,

Richard Cook, Mayor

Town of Double Oak

C: My Files/Correspondence/TCEQ Letter – Double Oak 3-21-06 – contested case hearing.doc

DOUBLE OAK

TOWN OF DOUBLE OAK
320 WAKETON ROAD
DOUBLE OAK, TEXAS 75077

Texas Commission on Environmental Quality
Office of the Chief Clerk
Room 1101
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Austin, TX 78753

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office of Chief Clerk
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Austin, TX 78753

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MARCH 1, 2006

I, CHESTER E. DEBORD
2941 C.R. 3640
LADONIA, TX 75449
TEL. 903-367-7368,

WISH TO OBJECT TO THE FACT THAT UPPER TRINITY REGIONAL WATER DISTRICT IS APPLYING FOR A PERMIT, APPLICATION NO. 5821, TO BUILD A LAKE IN FANNIN CO. TEXAS. THE PROPOSED LAKE, TO BE CALLED RALPH HALL LAKE. I AM REQUESTING A CONTESTED CASE HEARING.

IF THIS LAKE IS BUILT, WE (my WIFE & I) WILL LOSE ALL OF OUR LAND (80 ACRES) AND OUR HOME. THE PROPOSED DAM SITE WILL GO ALMOST THROUGH THE MIDDLE OF OUR PROPERTY AND THE CENTER OF IT WILL BE APPROXIMATELY 105 FEET FROM THE CORNER OF OUR HOUSE, WHICH TOOK 2 YEARS TO BUILD AND WE HAVE LIVED HERE 3 YEARS IN APRIL, 2006.

OPA
MAR 06 2006
BY

CHIEF CLERKS OFFICE
2006 MAR -6 AM 10:25

MC

DEBORD
2941 C.R. 3640
LADONIA, TX 75449

THE OFFICE OF THE CHIEF CLERK
MC 105
TCEQ
P.O. BOX 13087
AUSTIN, TX 78711-3087

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78711-3087-47 B012

Have formal oral comment. (3)

TCEQ Public Participation Form
Upper Trinity Regional Water District
Public Meeting
Proposed Water Use Permit
Application No. 5821
Tuesday, March 28, 2006

OPA RECEIVED
MAR 28 2006
AT PUBLIC MEETING

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
2006 APR -6 PM 1:17
CHIEF CLERKS OFFICE

PLEASE PRINT:

Name: CHESTER DEBORD

Address: 2941 CR 3640

City/State: LADONIA, TX Zip: 75449

Phone: (903) 367-7368

☑ Please add me to the mailing list.

Are you here today representing a municipality, legislator, agency, or group? ☐ Yes ☐ No

If yes, which one?

IF YOU WANT TO GIVE FORMAL COMMENT PLEASE ✓BELOW

☑ I wish to provide formal oral comments.

☐ I wish to provide formal written comments at tonight's public meeting.

(Written comments may be submitted any time during the meeting.)

Please give this to the person at the information table. Thank you.

Have formal oral comment (9)

OPA RECEIVED

MAR 27 2006

AT PUBLIC MEETING

TCEQ Public Participation Form
Upper Trinity Regional Water District
Public Meeting
Proposed Water Use Permit
Application No. 5821
Monday, March 27, 2006

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
'06 APR -6 PM 1:25
CHIEF CLERKS OFFICE

PLEASE PRINT:

Name: CHESTER DEBORD

Address: 2941 C.R. 3640

City/State: LADONIA, TX Zip: 75449

Phone: (903) 367-7368

☑ Please add me to the mailing list.

Are you here today representing a municipality, legislator, agency, or group? ☐ Yes ☑ No

If yes, which one?

IF YOU WANT TO GIVE FORMAL COMMENT PLEASE ✓BELOW

☑ I wish to provide formal oral comments.

☐ I wish to provide formal written comments at tonight's public meeting.

(Written comments may be submitted any time during the meeting.)

Please give this to the person at the information table. Thank you.

Michelle Dowell
P.O. Box 52
Gober, TX 75443

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
2006 MAR 21 PM 2:11
CHIEF CLERKS OFFICE

March 15, 2006

OPA
HR
MAR 22 2006
BY

Office of the Chief Clerk
Texas Commission on Environmental Quality
MC 105
P.O. Box 13087
Austin, TX 78711-3087

WR 43032

To TCEQ:

I request that the Texas Commission on Environmental Quality conduct a contested case hearing on Application No. 5821 by the Upper Trinity Regional Water District to construct Ralph Hall Lake on the North Sulphur River in Fannin County.

I have land in the vicinity of the lake site that could be inundated or used for mitigation. Our land is located **on County Rd 3351, Mary Allen Survey.**

Any notices should be sent to me at Michelle Dowell P O Box 52 Gober, Tx 75443 or call me at 903 496 2721

Thank you for considering my request.

Sincerely,

Michelle Dowell

Michelle Dowell

Michelle Dowell
P.O. Box 52
Golden, TX 75443

Office of the Chief Clerk
Texas Commission on Environmental Quality
MC 105
P.O. Box 13087
Austin, TX 78711-3087

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FROM: (PLEASE PRINT) PHONE (903) 496-2721

MICHELLE DOWELL
P.O. BOX 52
GOBER, TX. 75443

TO: (PLEASE PRINT) PHONE ( )

OFFICE OF THE CHIEF CLERK
TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
MC 105
P.O. BOX 13087
AUSTIN, TX. 78711-3087

FOR PICKUP OR TRACKING: Visit www.usps.com or Call 1-800-222-1811

EMS

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MAR 27 2006

AT PUBLIC MEETING

TCEQ Public Participation Form
Upper Trinity Regional Water District
Public Meeting
Proposed Water Use Permit
Application No. 5821
Monday, March 27, 2006

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
2006 APR -6 PM 1:26
CHIEF CLERKS OFFICE

PLEASE PRINT:

Name: Michelle Dowell

Address: PO Box 52

City/State: Gober TX Zip: 75443

Phone: 903 496-2721

☑ Please add me to the mailing list.

Are you here today representing a municipality, legislator, agency, or group? ☐ Yes ☐ No

If yes, which one?_____

IF YOU WANT TO GIVE FORMAL COMMENT PLEASE ✓BELOW

☐ I wish to provide formal oral comments.

☑ I wish to provide formal written comments at tonight's public meeting.

(Written comments may be submitted any time during the meeting.)

Please give this to the person at the information table. Thank you.

43832
WR

OPA RECEIVED
MAR 27 2006
AT PUBLIC MEETING

I am concerned about the amount of mitigated land, I belive it will be done by talking to the Corp of Engineers ~~or other~~ agencies. My land could be mitigated. I live on a large creek in close proximity of the proposed lake Ralph Hall. Should my land be mitigated - the fair market price in Fannin Co. & the state in my area is about $750 an acre at most compared to $2000.00 plus in other areas of the county. This land is my retirement home. Also I am concerned about Ad Valerim taxes being put on me to pay for the lake or parks, etc.

Please do not let us lose our homes Livelyhoods - I raise horses for mine on my land, And be taxed off of it to build a lake that will silt in.

Sincerely
[illegible] Dow

Comment on Back

MAR 27 2006

TCEQ Public Participation Form
Upper Trinity Regional Water District
Public Meeting
Proposed Water Use Permit
Application No. 5821
Monday, March 27, 2006

PLEASE PRINT:

Name: Michelle Dowell

Address: PO Box 52

City/State: Gober TX Zip: 75443

Phone: (903) 496-2721

☐ Please add me to the mailing list.

Are you here today representing a municipality, legislator, agency, or group? ☐ Yes ☐ No

If yes, which one?_____

IF YOU WANT TO GIVE FORMAL COMMENT PLEASE ✓BELOW

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☑ I wish to provide formal written comments at tonight's public meeting.

(Written comments may be submitted any time during the meeting.)

Please give this to the person at the information table. Thank you.

INTERNATIONAL PAPER

P.O. BOX 870 • TEXARKANA, TEXAS 75504

March 21, 2006

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

2006 MAR 22 PM 2:38

CHIEF CLERKS OFFICE

OPA

HR

MAR 23 2006

BY

WR 23832

LaDonna Castañuela
Office of the Chief Clerk
MC 105
Texas Commission on Environmental Quality
P.O. Box 13087
Austin, Texas 78711-3087

Re: Application No. 5821 for a Reservoir and Water Right Permit by the Upper Trinity Regional Water District.

Dear Ms. Castañuela:

International Paper Company, with a manufacturing facility located at Texarkana, TX (herein "Texarkana mill") hereby requests a contested case hearing regarding the Upper Trinity Regional Water District "Application No. 5821" insofar as the application does not provide adequate information to determine the scope or location of the impacts of the proposed projects. The Texarkana mill is located on the Sulphur River and is a paper manufacturing facility that uses and discharges significant amounts of water. The Texarkana mill process also depends on available wood fiber supply and adequate Sulphur River flow rates. Inadequate fiber supply and river flows will adversely impact the ability of the mill to effectively operate. The proposed reservoir is upstream of the mill and approximately120 miles from the facility.

As one of 80,000 Texans employed in a wood based job and as facility manager at Texas' only International Paper mill, I am concerned by the proposed reservoir and the potential negative impact the reservoir would have on a significant amount of renewable resources. The reservoir may adversely affect our operations either through construction, water rights, river flow or possible permanent removal of a significant amount of renewable resources.

Consider that timber is Texas' third most valuable agricultural commodity and accounts for 35 percent of East Texas' agricultural income. The proposed Lake Ralph Hall could result in permanent removal of much of the region's renewable resources.

At International Paper, we operate according to the principles of the Sustainable Forestry Initiative (SFI) program and believe that through proper stewardship we can keep our forests across the globe healthy for future generations. Our leadership role in the SFI program exemplifies our commitment to the continuous planting, growing and harvesting of trees while protecting wildlife, plants, soil, air and water quality.

Certainly the water needs throughout the state of Texas are indeed significant and must be addressed. However, the potential negative impacts to significant renewable resources along with the impacts to the Sulphur River flow rates which we are greatly dependent on for our operations are also great and warrant further discussion and study.

I appreciate your review of this matter and hope you will feel free to contact me if I can of any assistance or provide any additional information.

Sincerely,

Kevin Driscoll, Texarkana Mill Manager

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TO LADONNA CASTANUELA, TCEQ
TCEQ - OFFICE OF THE CHIEF CLERK
MC 105
12100 PARK 35 CIRCLE
AUSTIN, TX 78753

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Mr. Kenneth M. and Mrs. Evelyn T. Flesher
2853 FM 2990
Ladonia, TX 75449-3410
(903) 367-7174
email: *fleshers@earthlink.net*

OPA
MAR 06 2006
BY
CHIEF CLERKS OFFICE
2006 MAR -6 AM 10:26

March 2, 2006

Office of the Chief Clerk
MC 105
Texas Commission on Environmental Quality
P.O. Box 13087
Austin, TX 78711-3087

Dear Ladies and Gentlemen:

I respectfully request a **contested case hearing** for the proposed Lake Ralph Hall project. The entity applying for the permit is the **Upper Trinity Regional Water District**, and the permit application number is **5821**.

My name and mailing address are in the heading of this letter. My daytime telephone number is (903) 783-3211.

My home and 81 acres of property are about three miles north of the town of Ladonia, which puts us near the center of the proposed project. More specifically, my home is about 1,000 yards northwest of the intersection of the Sulphur River with FM 2990.

I will be affected by the proposed project in a way not common to the general public in that I will **lose my home & be forced to relocate against my will**. I have attended every public meeting on this proposed project, and Upper Trinity Regional Water District has been **intentionally evasive, vague, and even insensitive** in the following areas related to reimbursement.

1. Will landowners be sufficiently reimbursed to buy property of **similar quality & quantity**? They won't even guarantee that the landowners will not be reimbursed less than the original investment in their homes and property. *That is criminal!*

2. Will landowners be reimbursed for **improvements to their property** that are not always considered by the local Appraisal authority, such as building fences, barns, improving pastures? Within the past twelve months, I personally spent over $20,000 clearing woods for an expanded pasture & another $5,000 preparing that pasture for cultivation. I have receipts.

3. Will landowners be reimbursed for **labor-intensive additions** to the infrastructure of their homes, such as flower beds, gardens, shelving, racks, hanging ding-dong curtains for the wife, out-buildings, etc.?

4. Will landowners be reimbursed for the **cost of relocation**, to include searching for a new home, missing time from work, physically moving, the stress of the entire ordeal, etc.?

5. If landowners are forced to move to town, will they be **reimbursed for agricultural equipment** that will no longer be of use to them?

When the chips are down, Upper Trinity Regional Water District will arm their corporate lawyers with the club of eminent domain, and they will beat poor people senseless in the courts. So-

called justice in America is based on what a party can afford, and that's the way that it really works.

My wife and I are in our mid-50's. We don't have the time to be put on the streets with a pittance of a reimbursement—and be ready for a retirement—so that Upper Trinity Regional Water District can maximize their corporate profits & executive bonus packages.

Your consideration of this request will be respectfully appreciated.

Sincerely,

Mike Flesher

Mike Flesher

Mr. KENNETH M. and Mrs. EVELYN T. FLESHER

Mike and Evelyn Flesher
2853 FM 2990
Ladonia, TX 75449-3410

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Office of the Chief Clerk
MC 105
Texas Commission on Environmental Quality
P.O. Box 13087
Austin, TX 78711-3087

Mr. Kenneth M. and Mrs. Evelyn T. Flesher
2853 FM 2990
Ladonia, TX 75449-3410
(903) 367-7174
email: *fleshers@earthlink.net*

March 1, 2006

Office of the Chief Clerk
MC 105
Texas Commission on Environmental Quality
P.O. Box 13087
Austin, TX 78711-3087

OPA
MAR 0 6 2006
BY

WR/43832

CHIEF CLERKS OFFICE
2006 MAR -3 AM 10:02
TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Dear Ladies and Gentlemen:

I will be in attendance at the public meeting hosted by TCEQ in Ladonia, TX, on March 27, 2006 in regard to the proposed Lake Ralph Hall. My home is located in the construction site of the proposed project. **Please forward this "request for comment" to a TCEQ representative who will also be in attendance & can provide a public response.**

According to an independent analysis by the engineer firm of Kellogg, Brown & Root, the proposed project will cost in the area of $300 million. This is in contrast to an analysis done by another firm on the payroll of Upper Trinity Regional Water District (UTRWD) that suggests a price tag of $200 million.

There is reason to doubt that UTRWD will be able to raise $300 million in the foreseeable future for this project. In a separate agreement between UTRWD & the town of Ladonia, the latter agreed to fund 10% ($30 million) of the cost of the lake with a bond issue. The town of Ladonia can't even afford to pave all of its streets, its public school system is on the verge of collapse (according to recent media releases), and it lacks other basic municipal services. Only a fool would buy their bonds. There has been no public discussion on how UTRWD plans to finance the other 90%.

Is there a provision in the law to delay further progress on this project—either in the permitting phase or prior to granting of eminent domain authority—until UTRWD demonstrates a reasonable ability to raise $300 million? If not, what is to preclude UTRWD from using the terror of eminent domain & legal retribution to obtain large tracts of land at discount prices & never develop the lake?

Your comments on this matter will be appreciated by more than a few people in the affected community.

Sincerely,

Mike Flesher

Mike Flesher

MC

Mr. KENNETH M. and Mrs. EVELYN T. FLESHER

18

Mike and Evelyn Flesher
2853 FM 2990
Ladonia, TX 75449-3410

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

2006 MAR -3 AM 10:02

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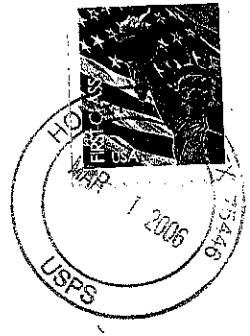
Office of the Chief Clerk
MC 105
Texas Commission on Environmental Quality
P.O. Box 13087
Austin, TX 78711-3087



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March 10, 2006

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MAR 16 2006
BY DM

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2006 MAR 15 PM 2:29
TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

To Whom It May Concern:

I am Sarah Hembree-Ashcraft-Petersen, the president and owner of Hembree Farm and Ranch Corporation.

My mailing address is:

325 CR 3360
Ladonia, Texas 75449

WR/43832

My telephone number is:

(903) 227-0305

I am requesting a contested case hearing.

The entity applying for the permit application is the Upper Trinity Regional Water District . The permit application number is Application No. 5821.

I own a working ranch south of FM 1550. Sulphur River runs through my ranch. The proposed Ralph Hall Lake would cover the ranch which has been in my family for five generations.

My homestead and another home, plus a cemetery, on my ranch would be destroyed by the proposed lake----not to mention the barns, corrals, a lake, drop structures, ponds, fencing and cross fencing, improved pastures, dirt work to control erosion—all of which has taken the hard work of my ancestors and me for years and has cost hundreds of thousands of dollars to accomplish.

This proposed lake would take away my heritage and my farming and ranching business, both of which are irreplaceable.

Very truly yours,

Sarah Hembree-Ashcraft-Petersen

Sarah-Hembree-Ashcraft-Petersen
President
Hembree Farm and Ranch Corporation, Inc.

Hembree Farm & Ranch Corporation
325 CR 3360
Ladonia, TX 75449

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MAR 27 2006

AT PUBLIC MEETING

TCEQ Public Participation Form
Upper Trinity Regional Water District
Public Meeting
Proposed Water Use Permit
Application No. 5821
Monday, March 27, 2006

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

2006 APR -6 PM 1:26

CHIEF CLERKS OFFICE

PLEASE PRINT:

Name: SARAH HEMBREE-PETERSEN

Address: 325 CR 3360

City/State: LADONIA, TX Zip: 75449

Phone: (903) 227-0305

☑ Please add me to the mailing list.

Are you here today representing a municipality, legislator, agency, or group? ☐ Yes ☑ No

If yes, which one?

IF YOU WANT TO GIVE FORMAL COMMENT PLEASE ✓BELOW

☐ I wish to provide formal oral comments.

☑ I wish to provide formal written comments at tonight's public meeting.

(Written comments may be submitted any time during the meeting.)

I AM OPPOSED TO the RALPH HALL LAKE

Please give this to the person at the information table. Thank you.

LOWERRE & FREDERICK
ATTORNEYS AT LAW
44 East Avenue, Suite 100
Austin, Texas 78701
(512) 469-6000 · (512) 482-9346 (facsimile)
Mail@LF-LawFirm.com

HR OPA
MAR 14 2006
BY DM

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
2006 MAR 14 PM 12: 57
CHIEF CLERKS OFFICE

March 14, 2006

LaDonna Castañuela
Office of the Chief Clerk
MC 105
Texas Commission on Environmental Quality
P.O. Box 13087
Austin, Texas 78711-3087

WR/13832

Re: Application No. 5821 for a Reservoir and Water Right Permit by the Upper Trinity Regional Water District.

Dear Ms. Castañela:

On behalf of Ward Timber, Ltd and Ward Timber Holdings, Ltd. (jointly referred to as "Ward Timber"), I am filing these initial comments and request for contested case hearing. Both Ward Timber companies are involved in development of forest products and could be adversely affected by the construction of the proposed reservoir and diversion of water from the Sulphur River.

Ward Timber is based in Cass County, Texas where it operates a hardwood sawmill. Ward Timber also operates 6 wood yards in East Texas for the purchase of wood harvested by others. The wood purchased from others and wood harvested by Ward Timber on its lands and on lands covered by its timber deeds is taken to its sawmill, to sawmills of others and to paper mills.

Ward Timber has over 100 employees and as many subcontractors, including truck drivers and loggers. It operates in a number of Texas counties, as well as in Arkansas and Louisiana. It has harvested timber on lands under its control throughout the Sulphur River Basin. It harvests approximately 100,000 tons of timber each year from within this River basin alone, and a significant portion of this wood is taken to Ward Timber's sawmill. It is also involved in harvesting or processing of timber throughout East Texas.

Ward Timber may be adversely affected by the reservoir, water right and associated pipelines in a number of ways, including the removal of forest lands from the pool of properties available to Ward Timber for its operations. The application of the Upper Trinity Regional Water District, "Application No. 5821," does not, however, currently provide sufficient information to determine the scope or location of the impacts of the proposed projects.

For example, the application does not provide the location or amount of lands that may be taken for mitigation. Federal and state laws will require mitigation lands. The Texas Parks and Wildlife Department ("TPWD") has requested mitigation lands.[1] Given the practice of TCEQ and the Corps

[1] In its letter of February 6, 2006 from Ms. Kathy Boydston to the Upper Trinity Regional Water District and the U. S Army Corps of Engineers, TPWD states that mitigation will be needed for loss of woodlands, wetlands, riparian habitat

of Engineers to allow the designation of mitigation lands at some distances from proposed reservoir sites for mitigation, Ward Timber is at risk of losing timber lands, not only in Fannin County, but in many other East Texas counties, where it has properties and other timber interests.

The land mitigation provisions for Cooper Lake, which is also on the Sulphur River, provide a good example. More than two acres were set aside for every acre inundated by the Reservoir and related activities. A majority of the mitigation was not in the same county as Cooper Lake. Some of the lands were as far east as Cass County.

There have been a large number of reservoirs constructed in East Texas that have also removed hundreds of thousands of acres of lands from forest production and other such economic uses. The reservoir proposed by the Upper Trinity Regional Water District could add to the loss of productive forestry land. The individual and cumulative impacts of such reservoirs need to be evaluated by TCEQ, the Corps of Engineers, and other state and federal resource agencies. Thus, Ward Timber seeks to participate in the decisions of the reservoir proposed by the Upper Trinity Regional Water District to provide technical information and evaluation for the State decision making process and to protect the interests of Ward Timber.

Ward Timber is also concerned about the impacts of the reservoir and diversions of water from the Sulphur River on the lands that depend upon the River. Water from the Sulphur River supports bottomlands and other woodlands. The water from the River recharges local aquifers. The current application does not, however, provide the needed information or analysis for the impacts on such roles of the River. Thus, the impacts on the interests of Ward Timber in maintaining bottomland hardwoods along the Sulphur River, for example, are difficult, if not impossible, to determine at this time with out more time and research.

Ward Timber is also part of an integrated forestry industry, buying wood for producers and selling wood to other processors. Ward Timber depends upon the healthy forest industry in East Texas. The proposal by the Upper Trinity Regional Water District may adversely affect the economics of this industry and those of Ward Timber. For example, Ward Timber depends upon sales of wood to International Paper for use in paper production. One of International Paper's plants discharges into the Sulphur River, but it needs a level of flow in the River sufficient for the River to accept such discharges. If the proposed reservoir and diversions upstream reduce flows, even just under low flow conditions that have occurred this year, the operations of International Paper could be limited. That would affect the ability of Ward Timber to sell its product to International Paper.

Finally, Ward Timber is concerned about the precedent this application could set for interbasin transfers of water. Ward Timber is also currently evaluating the impacts of another proposal for a reservoir on the Sulphur River, the Marvin Nichols Reservoir. That reservoir clearly would significantly impact the interests of Ward Timber. The TCEQ decision on the reservoir proposed by the Upper Trinity Regional Water District could significantly affect the decision on the Marvin Nichols Reservoir, since the first decision could set precedent under the new limitations for interbasin transfers of water from the Sulphur River.

---

and other types of important lands due to the inundation of lands for the reservoir and for properties needed for the associated pipelines.

Application 5821 by the Upper Trinity Regional Water District does not adequately address the issues required under Texas law for interbasin transfers. It does not, for example, assure the type of water conservation required for such transfers.[2] As a result, this application could result in improper application of Texas law and TCEQ rules, setting a dangerous precedent for future decisions on reservoirs and water rights, including TCEQ's decision on the application for the Marvin Nichols Reservoir.

Thus, Ward Timber requests a contested case hearing. Ward Timber will likely provide further comments once additional information on the proposal is available.

Ward Timber may be contacted through the undersigned attorneys at the address, phone number and fax numbers of Lowerre & Frederick, as provided above. The alternative contact information for Ward Timber is P.O. Box 360, Linden, Texas 75563, (903) 756-7700.

Thank you for your attention to this matter. Please let me know if you need any additional information.

Sincerely,

Richard Lowerre

Copy to: Mr. Larry N. Patterson, P.E., Upper Trinity Regional Water District
Mr. Bill Ward, Ward Timber
Mr. Brent Jasper, U.S. Army Corps of Engineers, Fort Worth, Texas
Ms. Cindy Loeffler, Texas Parks and Wildlife Department

[2] Texas law provides: INTERBASIN TRANSFERS. (1) (2) the applicant for the interbasin transfer has prepared a drought contingency plan and has developed and **implemented a water conservation plan that will result in the highest practicable levels of water conservation and efficiency achievable within the jurisdiction of the applicant.** Section 11.085, Texas Water Code.

TEXAS
COMMISSION
ON ENVIRONMENTAL
QUALITY

2006 MAR -9 AM 9:49

CHIEF CLERKS OFFICE

OPA

MAR 09 2006

BY

To: TCEQ
Office of the Chief Clerk
MC 105, TCEQ, P.O Box 13087
Austin, Texas 78711-3087

From: John D. McConnell
19764 Texas Hwy. 37 South
Bogata, Texas 75417
903: 632-0078

Date: March 6, 2006

Re: Upper Trinity Regional Water District, Application no. 5821

I, as representative of McCrury community, request a contested case hearing.

I and other members of McCrury community may be adversely affected by land mitigation in the Sulphur River Basin due to the development of Lake Ralph Hall. McCrury community is situated about 40 miles east of the proposed dam site on the South Sulphur River.

If all of the land mitigation is appropriated outside of the defined area overseen by the Sulphur River Basin Authority, that would satisfy the concerns of myself and the other members of McCrury community.

John D McConnell

JOHN D. McCONNELL
19764 TEXAS HWY. 37 SOUTH
BOGATA, TX 75417

BOGATA
MAR 7 2006
-PM

FIRST CLASS

Office of the Chief Clerk, MC 105
TCEQ
P.O. Box 13087
Austin Tex. 78711-3087

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Have form - oral comment (18)

TCEQ Public Participation Form
Upper Trinity Regional Water District
Public Meeting
Proposed Water Use Permit
Application No. 5821
Monday, March 27, 2006

OPA RECEIVED
MAR 27 2006
AT PUBLIC MEETING

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
2006 APR -6 PM 1:25
CHIEF CLERKS OFFICE

PLEASE PRINT:

Name: John McConnell

Address: 19764 Tex Hwy 37 S.

City/State: Bogata Tex Zip: 75417

Phone: (903) 632-0078

☐ Please add me to the mailing list.

Are you here today representing a municipality, legislator, agency, or group? ☐ Yes ☐ No

If yes, which one?

IF YOU WANT TO GIVE FORMAL COMMENT PLEASE ✓BELOW

☑ I wish to provide formal oral comments.

☐ I wish to provide formal written comments at tonight's public meeting.

(Written comments may be submitted any time during the meeting.)

Please give this to the person at the information table. Thank you.

WR/
43832

3-15-06
WICHITA FALLS, TX

T.C.E.Q.

DEAR SIRS
I WILLIAM McKINNEY
OF 1185 CR 3640
LADONIA, TX 75449 WOULD
LIKE TO CONTEST PERMIT
#5821 AGAINST THE
UPPER TRINITY REGENAL
WATER DISTRICT.
(LAKE RALPH HALL)
I WOULD ALSO LIKE TO
ATTEND MEETING ON
3 IN LADONIA TX.

THANKS

William McKinney

JANICE BENZENLY
SULPHER SPRINGS, TX

2006 MAR 21 AM 8:27
CHIEF CLERKS OFFICE
CONTROLLED CORRESPONDENCE
5821
RECEIVED
MAR 20 2006
WATER RIGHTS PERMITTING
HR MAR 21 2006
BY

MC

William McKinney
1101 Williams Ave.
Wichita Falls, TX 76301

WICHITA FALLS TX 763
-PM
15 MAR
2006

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T. C. E. Q
P. O. BOX 13087
AUSTIN, TX
78711-3087

TEXAS
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ON ENVIRONMENTAL
QUALITY

2006 MAR -9 AM 9:52

CHIEF CLERKS OFFICE

OPA

MAR 09 2006

BY

TCEQ
Office of Chief Clerk
MC 105
P.O. Box 13087
Austin, Texas 78711-3087

David A. Nabors
Sharron G. Nabors
1822 East Polk
Paris, Texas 75460
Ph. 903-784-3142

LOR/N3832

REQUEST FOR A CONTESTED CASE HEARING

Upper Trinity Regional Water District
Application for Ralph Hall Reservoir
Number 5821

We request a contested case hearing on this permit application because we are landowners in the Sulphur River basin about fifteen (15) miles downstream of the proposed Ralph Hall Reservoir. The property is located along both banks of the river itself and belongs to eight different members of our family. We use the river for recreational purposes of fishing, hunting, camping, and if the flow of the river is changed, it will eliminate our use and enjoyment of the river. The land along the river is agricultural production land used for crops and cattle. Because the Upper Trinity Water District has not mentioned anything publicly about the required acres of wildlife mitigation or the location it will be located at, and mitigation may directly affect our land and holdings. Also to my knowledge, there have been no environmental or economical impact studies done. Also Upper Trinity has a long term contract with Dallas Water Utilities for all the water it needs. These are some of our concerns and ask that you would not issue this permit.

Thank you for your consideration.

David A. Nabors

David A. Nabors

Sharron G. Nabors

Sharron G. Nabors

David & Sharron Nabors
1822 East Polk
Paris Texas
75460

NORTH TEXAS PADC
TX 750 6 L
07 MAR 2006 PM

TCEQ
Office of Chief Clerk
M.C. 105
P.O. Box 13087
Austin Texas

78711-3087

RECEIVED
MAR 09 2006
TCEQ MAIL CENTER

78711+3087

Have formal oral comment (14)

OPA RECEIVED

MAR 27 2006

AT PUBLIC MEETING

TCEQ Public Participation Form
Upper Trinity Regional Water District
Public Meeting
Proposed Water Use Permit
Application No. 5821
Monday, March 27, 2006

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
2006 APR -6 PM 1:25
CHIEF CLERKS OFFICE

PLEASE PRINT:

Name: David Nabors

Address: 1822 East Polk

City/State: Paris Texas Zip: 75460

Phone: 1903-784-3142

☑ Please add me to the mailing list.

Are you here today representing a municipality, legislator, agency, or group? ☐ Yes ☐ No

If yes, which one?_____

IF YOU WANT TO GIVE FORMAL COMMENT PLEASE ✓BELOW

☒ I wish to provide formal oral comments.

☐ I wish to provide formal written comments at tonight's public meeting.

(Written comments may be submitted any time during the meeting.)

Please give this to the person at the information table. Thank you.

TEXAS
COMMISSION
ON ENVIRONMENTAL
QUALITY

2011 APR 28 AM 10: 51

CHIEF CLERKS OFFICE

April 20, 2011

LaDonna Castanuela, Chief Clerk
Texas Commission on Environmental Quality
MC 105
P.O. Box 13087
Austin, TX 78711-3087

OPA
APR 28 2011
By

RE: Application No. 5821 submitted by the Upper Trinity Regional Water District Lake Ralph Hall

Dear Ms. Castanuela,

The Town of Flower Mound registered its opposition to Application No. 5821, with the Texas Commission on Environmental Quality, on March 21, 2006 (letter attached). At the request of the Upper Trinity Regional Water District, the Town reviewed our position regarding the permitting and construction of Lake Ralph Hall, and the Town Council reconfirmed our opposition by passing Resolution #13-11, also attached.

The Town of Flower Mound is opposed to this application for the following reasons:

1. cost estimates for the construction of Lake Ralph Hall are significantly understated;
2. the questionable financial condition of the UTRWD indicates that it does not have the financial strength to follow through and complete this project;
3. the UTRWD has grossly inflated population projections and the 2010 census figures do not support such population projections;
4. sedimentation rates are disproportionately high for the region and mandate further analysis and study;
5. the per unit cost calculations for Lake Ralph Hall do not promote an equitable comparison among proposed reservoirs because the calculations for Lake Ralph Hall include reuse estimates; and
6. a disproportionate amount of costs will be borne by the Town of Flower Mound and its residents.

We have provided correspondence between the UTRWD and the Town of Flower Mound for your reference, and please feel free to contact me or Cheryl Davenport, Special Projects Manager, at 972.874.6023 if you have any questions. Thank you for your consideration, and we continue to support a contested case hearing for Application No. 5821.

Sincerely,

Melissa D Northern

Melissa D. Northern
Mayor

Encl: Town Council Resolution #13-11
Letter from UTRWD, Kevin Mercer, dated March 4, 2011
Resolution No. 09-06
Letter to TCEQ requesting contested hearing, dated March 21, 2006

c: Harlan Jefferson, Town Manager
Cheryl Davenport, Special Projects Manager
Ken Parr, UTRWD Board of Directors

Attachment 1

TOWN OF FLOWER MOUND, TEXAS

RESOLUTION NO. 13 -11

A RESOLUTION OF THE TOWN COUNCIL OF THE TOWN OF FLOWER MOUND, TEXAS, REAFFIRMING ITS OPPOSITION TO THE PROPOSED CONSTRUCTION OF LAKE RALPH HALL IN FANNIN COUNTY, TEXAS; REAFFIRMING ITS FINDINGS AS CONTAINED IN RESOLUTION 09-06, WHICH RESOLUTION REQUESTED A CONTESTED CASE HEARING BEFORE THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY RELATIVE TO THE UPPER TRINITY REGIONAL WATER DISTRICT'S PROPOSED WATER USE PERMIT FOR LAKE RALPH HALL, APPLICATION NO. 5821; MAKING FINDINGS; AND PROVIDING FOR AN EFFECTIVE DATE.

WHEREAS, on or about March 20, 2006, the Town Council of the Town of Flower Mound, Texas ("Town"), adopted Resolution No. 09-06, in which the Town requested a contested case hearing before the Texas Commission on Environmental Quality ("TCEQ") relative to the Upper Trinity Regional Water District's ("UTRWD") proposed Water Use Permit for Lake Ralph Hall, Application No. 5821; and

WHEREAS, on or about March 21, 2006, the Town filed a written request for a contested case hearing with TCEQ relative to Lake Ralph Hall; and

WHEREAS, by correspondence to the Town dated March 4, 2011 ("the March 4 correspondence"), the UTRWD requested that the Town withdraw its request for a contested case hearing; and

WHEREAS, in the March 4 correspondence, the UTRWD contended that a contested case hearing "could drag on for weeks and be costly to the Town"; could result in Members of the UTRWD being "pitted against Member[s]"; and "will add to the cost of water for all present and future customers"; and

WHEREAS, as a consequence of the foregoing, the UTRWD requested that "the present Town Council . . . reevaluate the position taken by the prior Town Council;" and

WHEREAS, the Town Council again has concluded that (1) outdated construction cost estimates for the construction of Lake Ralph Hall are significantly understated; (2) the questionable financial condition of the UTRWD indicates that it does not have the financial strength to follow through and complete this project; (3) the UTRWD has grossly inflated population projections and the 2010 census figures do not support such population projections; (4) sedimentation rates are disproportionately high for the region and mandate further analysis and study; (5) the per unit cost calculations for Lake Ralph Hall do not promote an equitable comparison among proposed reservoirs because

the calculations for Lake Ralph Hall include reuse estimates; and (6) a disproportionate amount of costs will be borne by the Town of Flower Mound and its residents for this unnecessary, expensive, and ill-advised lake.

NOW, THEREFORE, BE IT RESOLVED BY THE TOWN COUNCIL OF THE TOWN OF FLOWER MOUND, TEXAS, THAT:

SECTION 1

All of the above premises are hereby found to be true and correct legislative and factual findings of the Town of Flower Mound and they are hereby approved and incorporated into the body of this Resolution as if copied in their entirety.

SECTION 2

The Town Council hereby (1) reaffirms its strong opposition to the construction of Lake Ralph Hall in Fannin County; (2) reaffirms its support for previously adopted Resolution No. 09-06; and (3) reaffirms its request for a contested case hearing with the TCEQ relative to the UTRWD's proposed Water Use Permit for Lake Ralph Hall, Application No. 5821.

SECTION 3

The Town Council hereby directs its Interim Town Secretary to forward a copy of this Resolution to the UTRWD, each member of the UTRWD, and to the TCEQ relative to the proposed Water Use Permit for Lake Ralph Hall, Application No. 5821.

SECTION 4

This Resolution shall take effect immediately from and after its passage, and it is so resolved.

DULY PASSED AND APPROVED on this the 18th day of April 2011.

TOWN OF FLOWER MOUND, TEXAS

Melissa D. Northern

Melissa D. Northern, MAYOR

ATTEST:

Theresa Fawcett

Theresa Fawcett, INTERIM TOWN SECRETARY

APPROVED AS TO FORM AND LEGALITY:

Wladd for Twelch

Terrence S. Welch, TOWN ATTORNEY

UPPER TRINITY
REGIONAL WATER DISTRICT

P.O. Drawer 305 • Lewisville, TX 75067

(972) 219-1228 • Fax: (972) 221-9896

March 4, 2011

The Honorable Melissa D. Northern
Mayor, Town of Flower Mound
2121 Cross Timbers
Flower Mound, TX 75022

CERTIFIED MAIL
RETURN RECEIPT REQUESTED
7006 2150 0000 1921 2686

Re: Future Water Supply

Dear Mayor Northern:

The Town of Flower Mound, as a Member of Upper Trinity Regional Water District, has a seat on the governing body of the District. As a fellow Member, I participate with you in achieving the shared vision for this governmental enterprise. By appointment of a Board Member, each Member entity shares in the duties of governance and policy for the District. As you would expect, votes of the Board are not always unanimous; but, a decision of the governing body represents the collective will of the membership.

In this connection, you may be aware that a prior Town Council took action in 2006 to officially oppose Upper Trinity's efforts to obtain water rights for Lake Ralph Hall in Fannin County. For your information, I am enclosing a related letter and a resolution adopted by the Town Council on March 20, 2006. Lake Ralph Hall will be a vital future water supply strategy to assure an adequate water supply for Members and Customers, as set forth in the Texas Water Plan, and as confirmed by the governing body of Upper Trinity.

With a seat at the table, each Member of the District has ample opportunity to voice their opinion about policies and projects, and to vote accordingly. This democratic process has enabled Upper Trinity to be effective in implementing regional water and wastewater systems for Members, including long-range water supply initiatives. After unanimous approval by the governing body of the District to pursue proposed Lake Ralph Hall as a future water supply, the Town, as a Member entity, took official action in direct opposition thereto. Because of the extraordinary nature of the Town's opposition to a strategic decision of the Board, and in recognition of Upper Trinity's mandate to plan for an adequate water supply for the future, I am taking this opportunity to reopen the matter, to provide you with updated information. The Lake Ralph Hall project has moved forward and it is my hope that these past differences can be overcome.

Pursuant to authorization (with no votes in opposition) by the Board of Directors in April 2003 and again in July 2003, Upper Trinity has been diligent in its efforts to acquire water rights and to pursue development of Lake Ralph Hall according to the Texas Water Plan.

- Applications were made for both the State and Federal permits; both applications are in advanced stages of process and review.
- Engineering and environmental reviews have been conducted with favorable outcomes.
- Lake Ralph Hall is the lowest cost, new water supply source available to the District.

- No adverse conditions have been found that would significantly affect the feasibility of the proposed Lake.
- The Region C Water Planning Group (16 counties) made an independent review of the Lake Ralph Hall project and endorsed it as a recommended water supply strategy for Upper Trinity.
- The Texas Legislature took action to preserve the site designated in the Texas Water Plan for Lake Ralph Hall.
- The Lake Ralph Hall project is receiving widespread support locally and in Fannin County - - in Austin as well.
- The Texas Water Development Board has provided a loan to Upper Trinity of $10 million in Water Infrastructure Funds for planning and permitting activities for Lake Ralph Hall.
- To date approximately $13.7 million has been invested by Upper Trinity in the Lake Ralph Hall project.

In opposition to the project, the Town has requested that the Texas Commission on Environmental Quality (TCEQ) hold a contested case hearing, a proceeding similar to a lawsuit trial. Such a proceeding could drag on for weeks and be costly for the Town - - with your own direct cost, plus sharing in Upper Trinity's cost. Such a proceeding will have Member pitted against Member, and will add to the cost of water for all present and future customers. The time for a decision by TCEQ about holding such a hearing is expected soon. In the face of the urgent need for a secure water supply, we would urge the present Town Council to reevaluate the position taken by the prior Town Council.

Upper Trinity is **mandated** to plan ahead for an adequate, secure future water supply for this region. Therefore, Upper Trinity is committed to development of Lake Ralph Hall as a feasible and vital future water supply `source. Upper Trinity will vigorously defend the project against any opposition. If the Town Council is open to a fresh look at this matter; we will be available to coordinate with you about how best to avoid unnecessary legal proceedings and the associated expense. Please call me at (940) 728-5050 if I can be of assistance.

Sincerely,

Kevin Mercer
General Manager, Denton County Fresh Water Supply District No. 7 (Lantana)
President, Board of Directors, Upper Trinity Regional Water District

KM/TET:bhs

Encl: Town Council Resolution # 09-06; Letter to TCEQ dated March 21, 2006

C: Steve Dixon, Councilmember
Mike Wallace, Councilmember
Tom Hayden, Councilmember
Kenneth Parr, Board of Directors, UTRWD
Al Filidoro, Councilmember
Steve Lyda, Councilmember
Harlan Jefferson, Town Manager
Mary Horn, County Judge

TOWN OF FLOWER MOUND, TEXAS

RESOLUTION NO. 09 -06

A RESOLUTION OF THE TOWN COUNCIL OF THE TOWN OF FLOWER MOUND, TEXAS (TOWN), REQUESTING A CONTESTED CASE HEARING WITH THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY IN REGARDS TO THE UPPER TRINITY REGIONAL WATER DISTRICT WATER USE PERMIT FOR LAKE RALPH HALL, APPLICATION NO. 5821.

WHEREAS, the Texas Commission on Environmental Quality (TCEQ) has issued a Revised Notice of an Application for a Water Use Permit and Public Meetings, Application No. 5821, in regards to the Upper Trinity Regional Water District (UTRWD) Water Use Permit to construct and maintain a reservoir known as Lake Ralph Hall; and

WHEREAS, the TCEQ may grant a contested case hearing on this application if a written hearing request is filed within 30 days from the date of newspaper publication of the notice; and

WHEREAS, the procedure to request a contested case hearing is to submit a brief and specific description of how the Town of Flower Mound would be affected by the application in a way not common to the general public.

NOW, THEREFORE, BE IT RESOLVED BY THE TOWN COUNCIL OF THE TOWN OF FLOWER MOUND, TEXAS, THAT:

SECTION 1

The Town Council of Flower Mound requests a contested case hearing regarding Application No. 5821.

SECTION 2

There is no need to construct Lake Ralph Hall within the next 50 years, and most likely, no need to do so within the next century.

SECTION 3

The reasons for requesting a contested case hearing include, but are not limited to,

1. outdated construction cost estimates for construction of Lake Ralph Hall are understated;
2. the fragile financial condition of the UTRWD indicates that they do not have the financial strength to follow through with the project;

3. inflated population projections in connection with surplus reserves do not make this additional water supply necessary;
4. sedimentation rates are disproportionately high for the region and bear further analysis;
5. the per unit cost calculations for Lake Ralph Hall do not promote an equable comparison among proposed reservoirs because the calculations for Lake Ralph Hall include reuse estimates; and,
6. a disproportionate amount of costs will be borne by the Town of Flower Mound.

SECTION 4

This Resolution shall become effective immediately upon its passage.

DULY PASSED AND APPROVED by the Town Council of the Town of Flower Mound, Texas, by a vote of 5 to 0, on this the 20th day of March, 2006.

APPROVED:

Judy A. Smith, MAYOR

ATTEST:

Paula J. Paschal, TRMC, TOWN SECRETARY

APPROVED AS TO FORM AND LEGALITY:

Terrence S. Welch, TOWN ATTORNEY

THE TOWN OF FLOWER MOUND TEXAS

OPA

HR MAR 23 2006

BY

March 21, 2006

LaDonna Castañuela, Chief Clerk
Texas Commission on Environmental Quality
MC 105
P.O. Box 13087
Austin, TX 78711-3087

WR 4382

RE: Revised Notice of an Application for a Water Use Permit and Public Meetings dated February 8, 2006

Application No. 5821 submitted by the Upper Trinity Regional Water District

Dear Ms. Castañuela,

In accordance with the above referenced notice and application, The Town of Flower Mound submits the following information.

Item 1

Name:	The Town of Flower Mound
Contact Person:	Cheryl Davenport, CIP Manager
Mailing Address	2121 Cross Timbers, Flower Mound, TX 75028
Daytime Phone	972-874-6314
Fax	972-874-6472

Item 2

Applicants Name	Upper Trinity Regional Water District
Permit Number	5821

Item 3

The Town of Flower Mound requests a contested case hearing.

Item 4

A brief and specific description of how we would be affected by the application in a way not common to the general public. The Town of Flower Mound has six specific reasons for requesting the contested hearing as listed below.

1) Outdated construction cost estimates for construction of Lake Ralph Hall are understated. Recently, the UTRWD submitted a bill to the Town of Flower Mound in the amount of $4.1 million for a six month delay in construction of a Water Treatment Plant in 2004. Subsequent to that increase, construction costs have increased substantially due to recent price increases in fuel and materials and the effects of hurricanes along the Gulf Coast in 2005. Cost estimates for the construction of Lake Ralph Hall should be updated and indexed to inflation.

2) The fragile financial condition of the UTRWD indicates that they do not have the financial strength to follow through with the project. The UTRWD Comprehensive Annual Financial Report (CAFR) as of September 30, 2005 indicates that their Net assets invested in capital assets – net of related debt is a negative $15 million. In other words, the UTRWD is upside down on its assets and debt. Their current debt is $295 million and exceeds that of many of its largest member communities including Highland Village, Flower Mound, Lewisville, and Carrollton. State participation debt owed to the Texas Water Development Board is $55 million plus accrued, unpaid interest of $16 million.

3) Inflated population projections in connection with surplus reserves do not make this additional water supply necessary. Comparison of population estimates used by Region C and UTRWD to selected community build out projections indicate that the Region C/UTRWD population estimates exceed those of the communities by 41% overall. In addition, the UTRWD Surplus as shown in the 2006 Region C Water Plan is 17% - 35% of their Supply and 20% - 54% of their Demand over the 50 year period shown in the report. The other regional water suppliers show surpluses of 1% -26% of Supply and 1% - 35% of Demand. The UTRWD higher than average surplus plus inflated population estimates has exponentially overstated the need for Lake Ralph Hall.

4) Sedimentation rates are disproportionately high for the region and bear further analysis. On May 13, 2005, Kellogg Brown & Root, Inc. (KBR) issued a report titled "Preliminary Technical Review of Sedimentation Study Issues". The report identified three levels of analysis regarding Lake Ralph Hall Sedimentation. A Level 1 analysis is a qualitative assessment that relies on field observations, data collection, and engineering experience. This type of assessment is not derived from modeling or calculations and would look at questions regarding sediment transport, channel hydraulics and stability, and basin characteristics. The

primary purpose of this work was to determine if a more detailed quantitative analysis would be required. A Level 1 analysis is not sufficient to challenge the viability of the Lake Ralph Hall project. The Lake Ralph Hall Sedimentation Potential Study was issued by KBR in December 2005 and concluded that the proposed reservoir is subject to a rate of sedimentation that is disproportionately high for the region and high enough that the project life may be significantly shortened. On March 6, 2006, the Flower Mound Town Council approved a work order with KBR for a Level 2 Sedimentation Analysis. A Level 2 analysis is a quantitative but very simplified assessment of the river sediment transport. The scope of work is a quantitative study to calculate the volumetric rate of sedimentation over the anticipated reservoir lifespan. Both the Level 1 Sedimentation Study and the Level 2 Scope of Work are attached.

5) Per unit cost calculations for Lake Ralph Hall do not promote an equable comparison among proposed reservoirs because the calculations for Lake Ralph Hall include reuse estimates. The agenda item and Resolution opposing the utilization of water reuse estimates by the Region C Water Planning Group and UTRWD is attached.

6) A disproportionate amount of costs will be borne by the Town of Flower Mound. The UTRWD Fiscal Year 2006 Operating Budget indicates that the Town of Flower Mound will contribute 32% of the revenue to the District. This revenue contribution is used to pay operating expenses and debt service. If the population and demand estimates are not realized, the Town of Flower Mound will be responsible for 32% of the costs of Lake Ralph Hall.

Item 5

The location and distance of The Town of Flower Mound relative to the proposed activity is approximately 80 miles.

On March 20, 2006, The Town of Flower Mound passed a Resolution requesting a contested case hearing. The resolution is attached. Thank you for consideration of this request for a contested case hearing.

Sincerely,

Jody A. Smith
Mayor

2121 Cross Timbers Road • Flower Mound, Texas 75028 • Office: 972/874-6310 • Fax: 972/874-6472 • TDD: 1-800-RELAY-TX

Attachments:

Lake Ralph Hall Sedimentation Potential Study, December 2005

Scope of Work Lake Ralph Hall Sedimentation Potential Study-Phase 2

Town Council Meeting Agenda Item No. 16, August 1, 2005

Town of Flower Mound, Texas Resolution No. 20-05 Opposing the Utilization of Water Reuse Estimates to Calculate Cost Projections for New Reservoir

Town of Flower Mound, Texas Resolution No. 09 -06 Requesting a Contested Case Hearing with the Texas Commission on Environmental Quality

Town of Flower Mound
972 Cross Timbers Rd
Flower Mound, TX 75028

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TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
2011 APR 28 AM 10:51
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APR 28 2011
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LaDonna Castañuela
TX Commission on Environmental Quality
MC-105
PO Box 13087
Austin, TX 78711-3087

March 3, 2006

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

2006 MAR 10 AM 9:40

CHIEF CLERKS OFFICE

OPA

MAR 10 2006

BY

The Office of the Chief Clerk
MC 105
TCEQ
P.O. Box 13087
Austin, TX 78711-3087

WR/43832

RE: Permit Application No. 5821
Upper Trinity Regional Water District

I am writing today to request a contested case hearing in the matter of the above referenced permit application.

I am a landowner living northeast of Ladonia, the area affected by the proposed reservoir site. I totally reject UTRWD's argument that water needs in Denton County and surrounding communities are so great that my land and home should be placed in jeopardy. I believe there are other solutions to address any and all future water concerns for communities outside my county.

My property is located between 2990 and 34, less than a mile from the proposed lake edge.

Again, I respectfully request a contested case hearing be held so members of my community may address this matter.

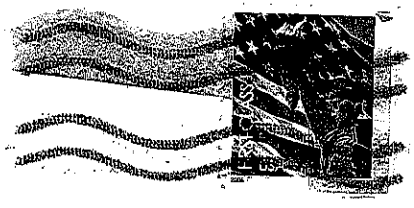
Sincerely,

Karen & Dale Pope

Mrs. Karen Pope & Izick Dale Pope
1628 CR 3365
Ladonia, TX 75449
(903) 367-7829

Karen Pope
1628 CR 3365
Ladonia, TX 75449

NORTH TEXAS P&DC
TX 750 6 L
08 MAR 2006 PM



The Office of the Chief Clerk
MC 105
TCEQ
P.O. Box 13087
Austin, TX 78711-3087

RECEIVED
MAR 10 2006
TCEQ MAIL CENTER

78711+3087

From: Angela J. Scott
985 CR 3635
Ladonia, Texas 75449
(860) 985-6205
Land Abstract A1154 C Woods
Land and cemeteries reside within the body of the proposed Ralph Hall Lake

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
2006 MAR 16 PM 2:34
CHIEF CLERKS OFFICE

To: Texas Commission on Environmental Quality
Attention: The Office of the Chief Clerk

HR OPA
MAR 17 2006
BY JM

Subject: Upper Trinity Regional Water District
Application No. 5821

WR/4337

We the heirs to the land of Will and Savannah Scott request a contested case hearing regarding Application No. 5821 by the Upper Trinity Region Water District.

You ask that we be brief in our description of how we would be affected, which to us are not something of a brief matter. The fact that Will Scott (my great grandfather) left Potosi Missouri as a slave, labored and was able to gain ownership of these lands that we now reside on is far from brief. We can't find records of his slavery, nor of his family, nor of his slave master because "THE SLAVE MASTER" chose not to keep records. So, our history starts upon these lands. To pursue our home is to remove us not only of our history but also of our livelihood. We raise our food and our children, and we bury our family on these lands. Our survival is based upon the lands that our ancestors have left for us.

Is it so important that the lands be removed from us for a need that has not been proven? Why do we as Americans wish to rape and steal from each other without working with resources that we have. You are willing to take what you consider to be cheap land and give it to someone so that they may gain riches. Well, our land is rich in history, love, and life for us. Please, go look for an area where people are willing to sell, wanting to start over, perhaps someone that doesn't care about their family's history.

The New Harmony and Pleasant Grove cemeteries will be affected. Moving graves stones would not be satisfactory. William, Edward, Luther, Thaddeus, Ezra, Ora, Vernon, Susie, Mary, and Allie Scott are my ancestors that worked these lands. They donated land for the building of Pleasant Grove Church, and they maintained the Pleasant Grove cemetery. We still worship at Pleasant Grove Church, we still maintain Pleasant Grove cemetery. Have those who wish to remove us done or do such things. Maybe you need to reflect upon your family and your heritage. Maybe you need to go to your families' church or tend to the burial site of your loved ones that's passed on. Then and only then you can understand our plea. We will be affected because we cannot replace what's being gained.

Angela J. Scott
985 CR 3635
Ladonia Tx 75449

CERTIFIED MAIL™

7005 1820 0001 6081 1307

9264

78711

U.S. POSTAGE
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Office of the Chief Clerk
TCEQ
MC 105
P.O. Box 13087
Austin Tx 78711-3087

RECEIVED
MAR 16 2006
TCEQ MAIL CENTER

78711+3087-87 B012

SULPHUR RIVER OVERSIGHT SOCIETY

157 C.R. 4291, De Kalb, Texas 75559

903-244-1747

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

CHIEF CLERKS OFFICE

OPA

HR MAR 20 2006

BY

March 13, 2006

Ms. LaDonna Castañuela, Chief Clerk
Texas Commission on Environmental Quality
Office of the Chief Clerk, MC 105
P.O. Box 13087
Austin, TX 78711-3087

WR/43832

Dear Ms. Castañuela:

The Sulphur River Oversight Society (SOS), a coalition of farmers, ranchers, timber growers, timber industries, hunting clubs, business people, and other residents of the Sulphur Basin, requests that the Texas Commission on Environmental Quality conduct a contested case hearing on Application No. 5821 by the Upper Trinity Regional Water District to construct a reservoir called Ralph Hall Lake on the North Sulphur River in Fannin County. SOS also requests to be named as a party in the hearing.

The Sulphur River Oversight Society has members in Fannin County in the vicinity of the proposed reservoir. We also have members throughout the Sulphur River Basin whose land could be taken as mitigation for the reservoir if it is built.

In addition, there are precedents that could be set during the permitting process for Ralph Hall Lake that could affect the viability of other reservoirs proposed in the Sulphur Basin, specifically Marvin Nichols and George Parkhouse Reservoirs. SOS has members that would be directly affected by those reservoirs as well.

Contact information for SOS is as follows:

Max Shumake, President
157 C.R. 4291
De Kalb, Texas 75559
903-244-1747 Mobile Main
903-667-5033 Home
maxshumake@aol.com

SOS requests that the following issues be considered during the contested case hearing:

- Impacts on landowners in the vicinity of Ralph Hall Lake
- Impacts on landowners whose land could be taken for mitigation of Ralph Hall Lake
- Impacts on landowners who derive revenues for hunting in the Sulphur River bottomlands
- Any precedents which would be set that would affect the viability of other reservoir projects proposed for the Sulphur Basin, namely Marvin Nichols and George Parkhouse Reservoirs
- Legal issues concerning interbasin transfers, including the requirement for the "highest practicable" level of water conservation and efficiency
- The issue of whether Ralph Hall Lake is consistent with protecting the agricultural and natural resources of the state
- The cumulative impacts of Ralph Hall Lake and the two existing reservoirs in the Sulphur Basin
- The loss of wildlife habitat
- Amount and location of mitigation
- The impact on the timber industry.

Thank you for considering our request. Please let us know if there is any additional information that you need.

Sincerely,

Max Shumake
President

Max Shumake
Sulphur Lin Oversight Society
157 C.R. 4291
DeKalb, Texas 75559

TEXARKANA, ARK-TX
PM
17 MAR
2006

Ms. La Donna Castañuela
Chief Clerk, MC 105
Texas Commission on Environmental Quality
P.O. Box 13087
Austin, Texas 78711-3087

RECEIVED
MAR 20 2006
TCEQ MAIL ROOM

OPA

FEB 13 2006

H

BY ___

(1)

WR/43832

I am Crystal Cooper-Smith
The pres. of The Citizens
against Ralph Hall Lake

Jesus Loves You
John & Crystal Smith
3011 CR 3640
Ladonia, TX 75449

CHIEF CLERKS OFFICE
TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

H # 903-367-7495
Cell # 903-918-7358

We want to request
a Contested Case hearing
on the Upper Trinity Regional
Water Districts Lake Ralph
Hall permit # 5821.

My Ranch will Be under the Lake or the spill Way of the Damn if it runs Down Mr. Chester Debords land next to me; In one Map I'm under Water, other I'm the Spill Way. But, in any case I will have to leave my home of over 14 yrs. !!!

I was 24 when I married and we moved from the 37 ac. ranch I grew up on. To a home in ard. Tx. We Lived there for about 2yr. till we found our home here in Ladonia. from the time I was a small child to now I have only moved 3 times

in my hole Life
I had a very stable up
Bringing and thats why
we got this Ranch when
our 1st Born was only
6mn. old So she
would have a stable
up Bringing & Life. We
now have 4 Kids 14, 12,
9 & 21 mn. old Baby.
I do not want to

move & uproot my family. This is the Land and Home I Planed to Live & Die on. Please Let me and My Much Loved Nighbors. the Debordo, McKennys, The Scotty, The Mams The Karys, The Duncans all Have our Say and

Time in Court.
Befor you Let our
Land Be Stolen away
from us..

The Scotts +
the McKennys are Black
and the Land was given
to thier Kin that were
Slaves they were told
if you will Stay + farm
Cotten we will give you

this Land. they went
on to Buy more of
that Land. My little
Mrs. McKenny Just Died
Less then 2yr. ago
at age (97) and had
Lived on this Land
ALL OF Her
Life..
none of us want
to Leave please Help us

(8)

Thank you for your time.

May God Bless you & yours

Crystal Leon Smith

Jesus ☺ Loves you!

P.S.

We are also wanting to be heard about the Cemetery that the Scotts McKenny's, the Manns all Have Kin in? and the Plesant grove Church That could Both go under this Lake as well? alot of people we all love are Laid

(D)

TO Rest there
and Mrs McKenny's
Little Church is
around 160 yr. or
more old. I Just
helped in 2000 or 2001
to get Siding up on
the out Side and we
helped them get alot
of work done in Side so
the Church stays sound.
agin Thank you! [illegible]

CITIZENS AGAINST RALPH HALL LAKE

The Upper Trinity Regional Water District wants to build Ralph Hall Lake in Fannin County, flooding more than 10,000 acres of productive farmland and forcing families off their land. The reservoir would flood the North Sulphur from just east of Ladonia almost to Gober. 80% of the water would be piped to Denton County and surrounding counties for use by cities outside Fannin County. Fannin County would bear all the impacts, while the area north of Dallas-Fort Worth would get all the benefit.

YOU HAVE BEEN GIVEN *INACCURATE* INFORMATION ABOUT RALPH HALL LAKE

The facts about Ralph Hall Lake have been widely misrepresented:

Myth #1: *It is not true that the Ralph Hall Lake project is a "done deal". Landowners have been told there is nothing they can do and that they must let surveyors on their land. But this is not true!*

The Truth: The Upper Trinity Regional Water District does not yet have a state permit to build the reservoir. One of the Water District's members cities, Flower Mound, is fighting the project and could help undercut funding for the project. There are many politically-based decisions still to be made. *This reservoir can still be stopped!*

Myth #2: *It is not true that the water from Ralph Hall Lake is "needed" for water supply, as promoters of the reservoir claim.*

The Truth: There is more than enough water available for all the Dallas-Fort Worth-North Texas area from existing lakes whose water is not all used. There are a number of other potential sources of water for Upper Trinity RWD, including buying water from Dallas or obtaining it from Lake Texoma, Lake Wright Patman, or Toledo Bend Reservoir.

Myth #3: *The claim made by promoters of Ralph Hall Lake that the reservoir would bring a boom to the economy of Fannin County ignores the dramatic negative impacts of the lake project.*

The Truth: More than 10,000 acres of Fannin County would be taken out of production — 7,600 flooded by the reservoir and substantially more set aside to compensate for lost wildlife land. Landowners would be forced to sell their ranches and farms and give up their livelihoods. Some families would lose their homes.

There are so many reservoirs in East Texas now that building one more is unlikely to bring much development to the area. If homes *are* built on the lakeshore, much of their value will be lost once the Water District begins taking water from the lake. A look at Jim Chapman Reservoir (formerly called Cooper) shows what it would be like -- people's docks would be high and dry and their view would be of a mudflat between them and the distant water.

Myth #4: *The Water District has told people that Ralph Hall Lake would solve the severe erosion problem along the North Sulphur. Not true!*

WHAT YOU CAN DO!

Contact...

Your county commissioners. ***Ask them to OPPOSE Ralph Hall Lake!***

Judge Derrell Hall
903-583-7455
Commissioner Ronnie Rhudy
903-965-7030
Commissioner Stan Barker
903-587-3455
Cmnsnr Dewayne Strickland
903-378-2941
Commissioner Pat Hilliard
903-583-2039

101 E. Rayburn Drive
Bonham, Texas 75418

Talk...

To you neighbors, friends, relatives, and the people you do business with. ***Tell them*** they'd been given wrong information.

Ask them to oppose Ralph Hall Lake.

Contact...

Other elected officials:

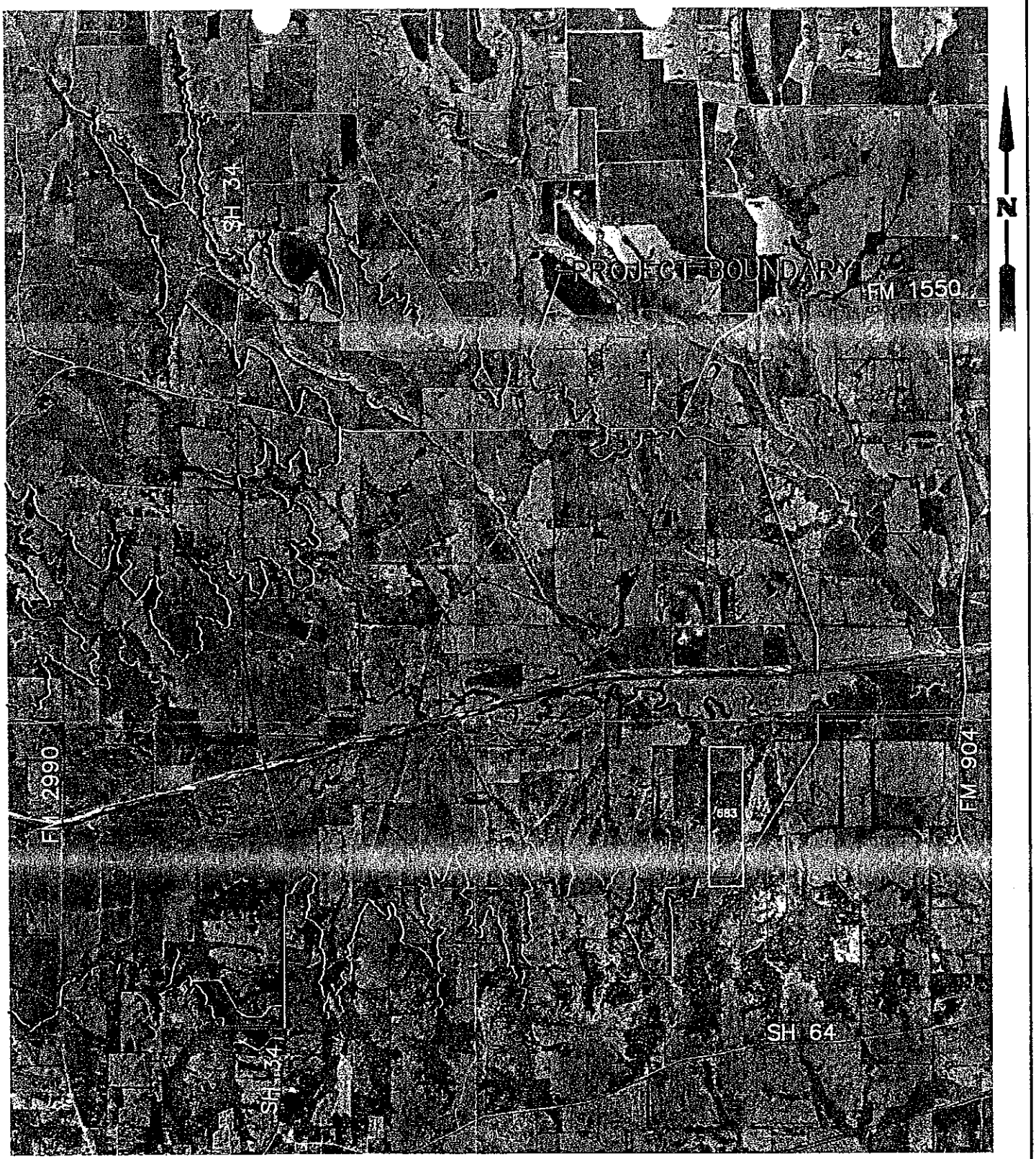
State Senator Bob Deuell
2500 Stonewall Street
Greenville, TX 75401
903-450-9797

State Rep Larry Phillips
421 North Crockett
Sherman, TX 75090
903-891-7297

Your mayor, city council, school board members, anyone with influence

For More Information, contact

Citizens Against Ralph Hall Lake, Crystal Smith, (903) 367-7495, mobile (903) 918-7358
Citizens Against Ralph Hall Lake, Chester or Faye DeBord, (903) 367-7368, mobile (903) 413-0061
Texas Committee on Natural Resources, Janice Bezanson, 512-327-4119, bezanson@texas.net

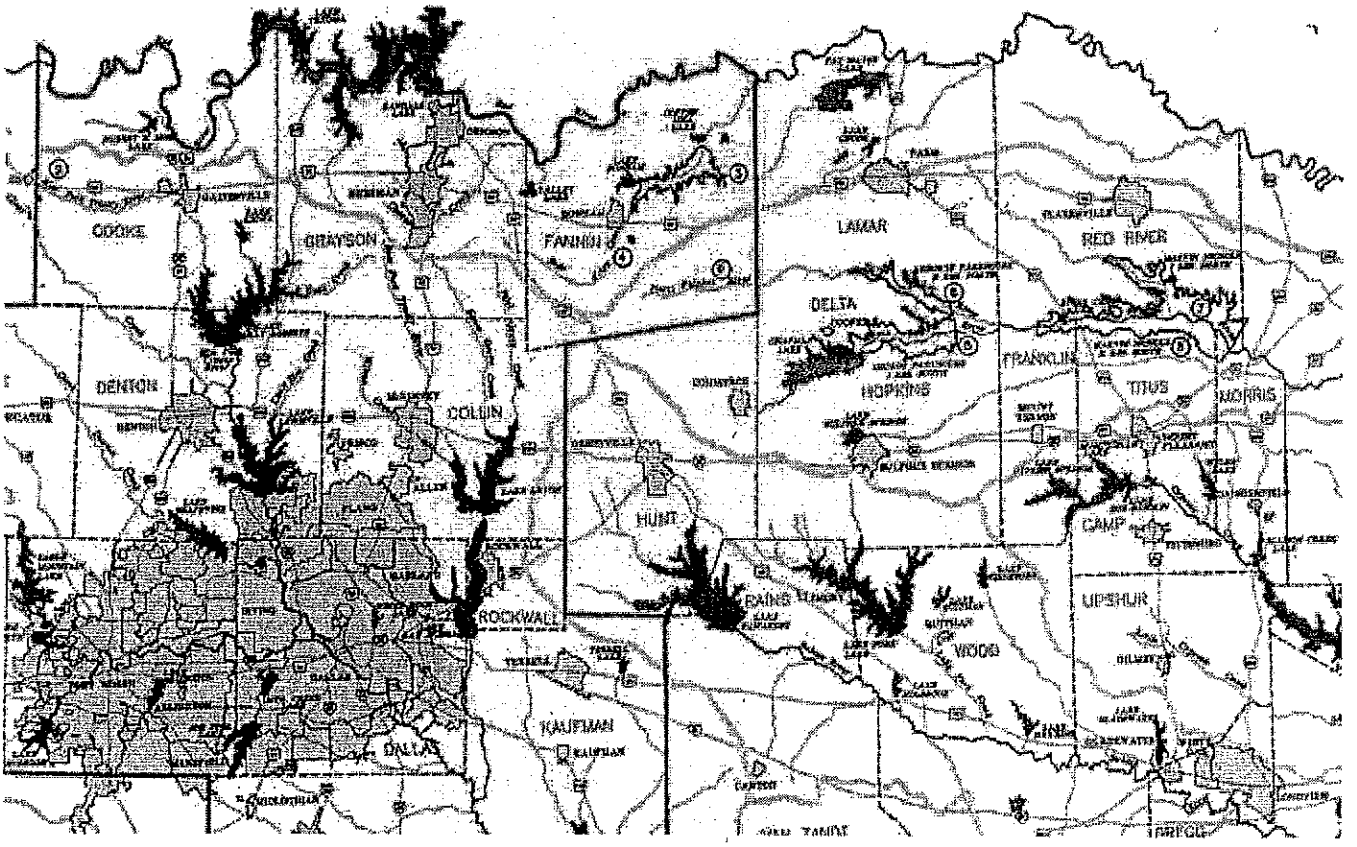


PROPERTY LOCATION

I'm 683 in this one I'm under water

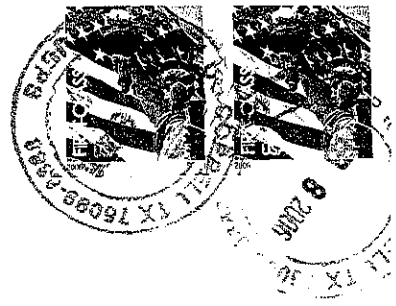
EXHIBIT A

DECEMBER 1, 2004



this also shows we DO NOT need or have a shortage of water in this area

Jesus Loves You
John & Crystal Smith
3011 CR 3640
Ladonia, TX 75449



RECEIVED
FEB 10 2006
TCEQ MAIL CENTER

Chief Clerk MC 105 T.C.E.Q.
PO Box 13087
Austin, Tx.
78711-3087

WR
43832

From:
Ms. Crystal Cooper Smith

I would like to
be put on your list
to be notified about
the Permit on the
WR Perm 5821
Upper Trinity Reg
Water Bid
(Lake Ralph Hall)

add is

TEXAS
COMMISSION
ENVIRONMENTAL
QUALITY
DEC 2 2
CLERKS OFFICE

OPA
DEC 12 2005
BY

JOHN & CRYSTAL SMITH
3011 C.R. 3640
LADONIA, TX 75449
Ph# 903-367-7495
Cell# 903-918-7358

Veterans of Foreign Wars of
the United States

T0800

Thank you!

Mrs.
Cydl Cooper
Smith

I am one of the 13 families in Ladonia that will be going under this Lake if it is passed! None of us want this Lake To Be Built Nor Dose Flower Mound TX. Please help if you Can!

JOHN & CRYSTAL SMITH
3011 C.R. 3640
LADONIA, TX 75449

NORTH TEXAS PADC
TX 750 2 1
09 DEC 2005 PM

37 USA

T.C.E.Q. Office of Chief Clerk MC 105
P.O. Box 13087
Austin, TX. 78711

RECEIVED
DEC 12 2005
TCEQ MAIL CENTER

BEST FOOT FORWARD

Have formal oral comment (1)

TCEQ Public Participation Form
Upper Trinity Regional Water District
Public Meeting
Proposed Water Use Permit
Application No. 5821
Tuesday, March 28, 2006

OPA RECEIVED
MAR 28 2006
AT PUBLIC MEETING

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
2006 APR -6 PM 1:16
CHIEF CLERKS OFFICE

PLEASE PRINT:

Name: Crystal Cooper-Smith

Address: 3011 CR 3640

City/State: Ladonia TX Zip: 75449

Phone: (903) 367-7495 or 903-918-7358

☒ Please add me to the mailing list. on it

Are you here today representing a municipality, legislator, agency, or group? ☐ Yes ☐ No

If yes, which one?_____

IF YOU WANT TO GIVE FORMAL COMMENT PLEASE ✓BELOW

☑ I wish to provide formal oral comments.

☐ I wish to provide formal written comments at tonight's public meeting.

(Written comments may be submitted any time during the meeting.)

Please give this to the person at the information table. Thank you.

Have formal oral comment. (7)

OPA RECEIVED

MAR 27 2006

AT PUBLIC MEETING

TCEQ Public Participation Form
Upper Trinity Regional Water District
Public Meeting
Proposed Water Use Permit
Application No. 5821
Monday, March 27, 2006

PLEASE PRINT:

Name: Crystal Cooper Smith

Address: 3011 CR 3640

City/State: Ladonia Tx. Zip: 75449

Phone: 903 367-7495 cell 903 918-7358

☑ Please add me to the mailing list. on it already

Are you here today representing a municipality, legislator, agency, or group? ☐ Yes ☐ No

If yes, which one?

2006 APR -6 PM 1:25 CHIEF CLERKS OFFICE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

IF YOU WANT TO GIVE FORMAL COMMENT PLEASE ✓BELOW

☑ I wish to provide formal oral comments.
Speaking on behalf of Ezra Scott as well

☐ I wish to provide formal written comments at tonight's public meeting.

(Written comments may be submitted any time during the meeting.)

Please give this to the person at the information table. Thank you.

THE TOWN OF FLOWER MOUND TEXAS

2006 MAR 23 PM 2:44
CHIEF CLERKS OFFICE
TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

OPA
HR
MAR 23 2006
BY

March 21, 2006

LaDonna Castañuela, Chief Clerk
Texas Commission on Environmental Quality
MC 105
P.O. Box 13087
Austin, TX 78711-3087

WR 43832

RE: Revised Notice of an Application for a Water Use Permit and Public Meetings dated February 8, 2006

Application No. 5821 submitted by the Upper Trinity Regional Water District

Dear Ms. Castañuela,

In accordance with the above referenced notice and application, The Town of Flower Mound submits the following information.

Item 1

Name:	The Town of Flower Mound
Contact Person:	Cheryl Davenport, CIP Manager
Mailing Address	2121 Cross Timbers, Flower Mound, TX 75028
Daytime Phone	972-874-6314
Fax	972-874-6472

Item 2

Applicants Name	Upper Trinity Regional Water District
Permit Number	5821

Item 3

The Town of Flower Mound requests a contested case hearing.

Item 4

A brief and specific description of how we would be affected by the application in a way not common to the general public. The Town of Flower Mound has six specific reasons for requesting the contested hearing as listed below.

1) Outdated construction cost estimates for construction of Lake Ralph Hall are understated. Recently, the UTRWD submitted a bill to the Town of Flower Mound in the amount of $4.1 million for a six month delay in construction of a Water Treatment Plant in 2004. Subsequent to that increase, construction costs have increased substantially due to recent price increases in fuel and materials and the effects of hurricanes along the Gulf Coast in 2005. Cost estimates for the construction of Lake Ralph Hall should be updated and indexed to inflation.

2) The fragile financial condition of the UTRWD indicates that they do not have the financial strength to follow through with the project. The UTRWD Comprehensive Annual Financial Report (CAFR) as of September 30, 2005 indicates that their Net assets invested in capital assets – net of related debt is a negative $15 million. In other words, the UTRWD is upside down on its assets and debt. Their current debt is $295 million and exceeds that of many of its largest member communities including Highland Village, Flower Mound, Lewisville, and Carrollton. State participation debt owed to the Texas Water Development Board is $55 million plus accrued, unpaid interest of $16 million.

3) Inflated population projections in connection with surplus reserves do not make this additional water supply necessary. Comparison of population estimates used by Region C and UTRWD to selected community build out projections indicate that the Region C/UTRWD population estimates exceed those of the communities by 41% overall. In addition, the UTRWD Surplus as shown in the 2006 Region C Water Plan is 17% - 35% of their Supply and 20% - 54% of their Demand over the 50 year period shown in the report. The other regional water suppliers show surpluses of 1% -26% of Supply and 1% - 35% of Demand. The UTRWD higher than average surplus plus inflated population estimates has exponentially overstated the need for Lake Ralph Hall.

4) Sedimentation rates are disproportionately high for the region and bear further analysis. On May 13, 2005, Kellogg Brown & Root, Inc. (KBR) issued a report titled "Preliminary Technical Review of Sedimentation Study Issues". The report identified three levels of analysis regarding Lake Ralph Hall Sedimentation. A Level 1 analysis is a qualitative assessment that relies on field observations, data collection, and engineering experience. This type of assessment is not derived from modeling or calculations and would look at questions regarding sediment transport, channel hydraulics and stability, and basin characteristics. The

primary purpose of this work was to determine if a more detailed quantitative analysis would be required. A Level 1 analysis is not sufficient to challenge the viability of the Lake Ralph Hall project. The Lake Ralph Hall Sedimentation Potential Study was issued by KBR in December 2005 and concluded that the proposed reservoir is subject to a rate of sedimentation that is disproportionately high for the region and high enough that the project life may be significantly shortened. On March 6, 2006, the Flower Mound Town Council approved a work order with KBR for a Level 2 Sedimentation Analysis. A Level 2 analysis is a quantitative but very simplified assessment of the river sediment transport. The scope of work is a quantitative study to calculate the volumetric rate of sedimentation over the anticipated reservoir lifespan. Both the Level 1 Sedimentation Study and the Level 2 Scope of Work are attached.

5) Per unit cost calculations for Lake Ralph Hall do not promote an equable comparison among proposed reservoirs because the calculations for Lake Ralph Hall include reuse estimates. The agenda item and Resolution opposing the utilization of water reuse estimates by the Region C Water Planning Group and UTRWD is attached.

6) A disproportionate amount of costs will be borne by the Town of Flower Mound. The UTRWD Fiscal Year 2006 Operating Budget indicates that the Town of Flower Mound will contribute 32% of the revenue to the District. This revenue contribution is used to pay operating expenses and debt service. If the population and demand estimates are not realized, the Town of Flower Mound will be responsible for 32% of the costs of Lake Ralph Hall.

Item 5

The location and distance of The Town of Flower Mound relative to the proposed activity is approximately 80 miles.

On March 20, 2006, The Town of Flower Mound passed a Resolution requesting a contested case hearing. The resolution is attached. Thank you for consideration of this request for a contested case hearing.

Sincerely,

Jody A. Smith
Mayor

Attachments:

Lake Ralph Hall Sedimentation Potential Study, December 2005

Scope of Work Lake Ralph Hall Sedimentation Potential Study-Phase 2

Town Council Meeting Agenda Item No. 16, August 1, 2005

Town of Flower Mound, Texas Resolution No. 20-05 Opposing the Utilization of Water Reuse Estimates to Calculate Cost Projections for New Reservoir

Town of Flower Mound, Texas Resolution No. 09 -06 Requesting a Contested Case Hearing with the Texas Commission on Environmental Quality

TOWN OF FLOWER MOUND, TEXAS

RESOLUTION NO. 09 -06

A RESOLUTION OF THE TOWN COUNCIL OF THE TOWN OF FLOWER MOUND, TEXAS (TOWN), REQUESTING A CONTESTED CASE HEARING WITH THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY IN REGARDS TO THE UPPER TRINITY REGIONAL WATER DISTRICT WATER USE PERMIT FOR LAKE RALPH HALL, APPLICATION NO. 5821.

WHEREAS, the Texas Commission on Environmental Quality (TCEQ) has issued a Revised Notice of an Application for a Water Use Permit and Public Meetings, Application No. 5821, in regards to the Upper Trinity Regional Water District (UTRWD) Water Use Permit to construct and maintain a reservoir known as Lake Ralph Hall; and

WHEREAS, the TCEQ may grant a contested case hearing on this application if a written hearing request is filed within 30 days from the date of newspaper publication of the notice; and

WHEREAS, the procedure to request a contested case hearing is to submit a brief and specific description of how the Town of Flower Mound would be affected by the application in a way not common to the general public.

NOW, THEREFORE, BE IT RESOLVED BY THE TOWN COUNCIL OF THE TOWN OF FLOWER MOUND, TEXAS, THAT:

SECTION 1

The Town Council of Flower Mound requests a contested case hearing regarding Application No. 5821.

SECTION 2

There is no need to construct Lake Ralph Hall within the next 50 years, and most likely, no need to do so within the next century.

SECTION 3

The reasons for requesting a contested case hearing include, but are not limited to,

1. outdated construction cost estimates for construction of Lake Ralph Hall are understated;
2. the fragile financial condition of the UTRWD indicates that they do not have the financial strength to follow through with the project;

3. inflated population projections in connection with surplus reserves do not make this additional water supply necessary;
4. sedimentation rates are disproportionately high for the region and bear further analysis;
5. the per unit cost calculations for Lake Ralph Hall do not promote an equable comparison among proposed reservoirs because the calculations for Lake Ralph Hall include reuse estimates; and,
6. a disproportionate amount of costs will be borne by the Town of Flower Mound.

SECTION 4

This Resolution shall become effective immediately upon its passage.

DULY PASSED AND APPROVED by the Town Council of the Town of Flower Mound, Texas, by a vote of 5 to 0, on this the 20th day of March, 2006.

APPROVED:

Jody A. Smith, MAYOR

ATTEST:

Paula J. Paschal, TRMC, TOWN SECRETARY

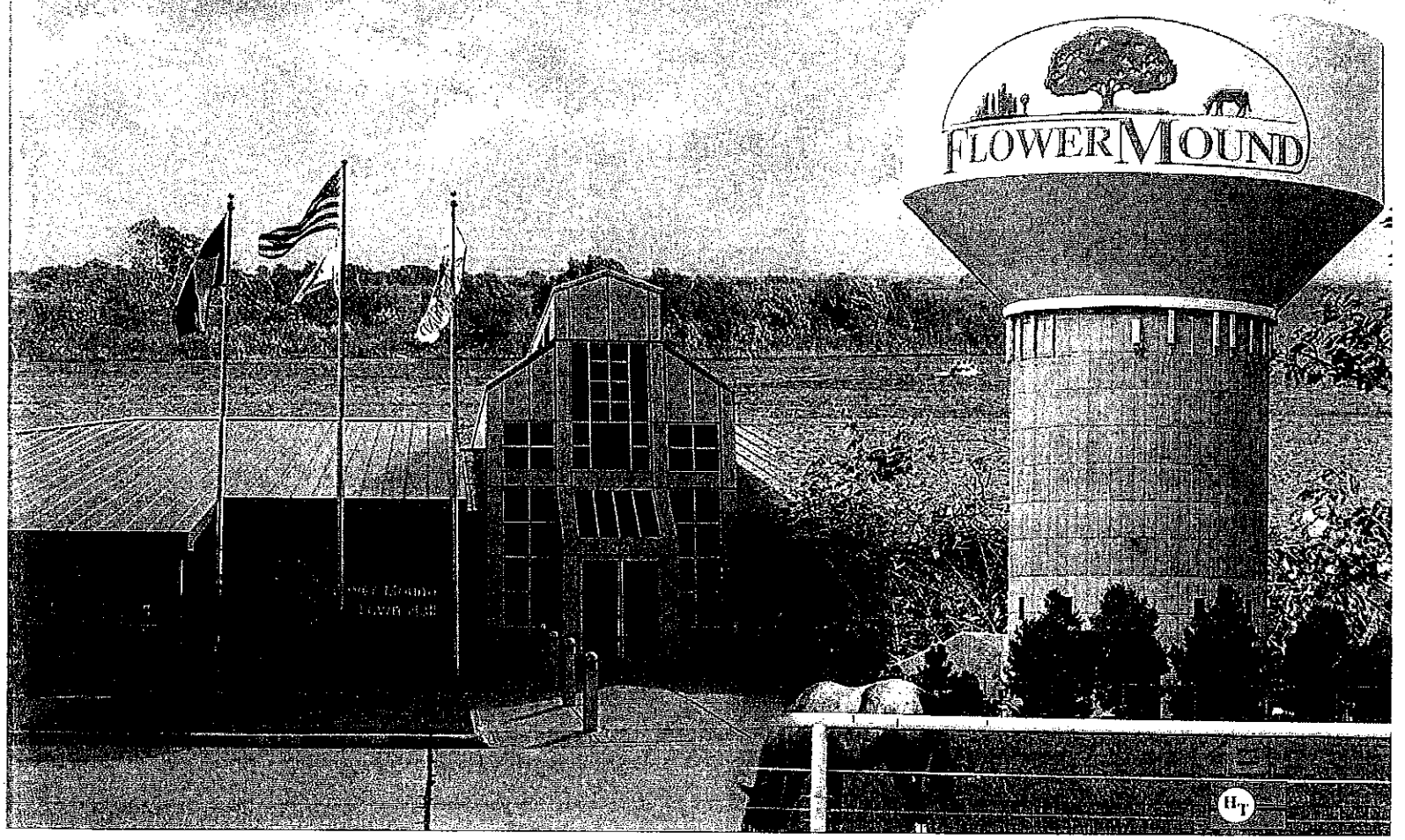
APPROVED AS TO FORM AND LEGALITY:

Terrence S. Welch, TOWN ATTORNEY

Town of Flower Mound

Lake Ralph Hall Sedimentation Potential Study

December 2005



Prepared for

The Town of Flower Mound

by

KBR

Kellogg Brown & Root

and

Hydrau-Tech, Inc.

December 2005

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EXECUTIVE SUMMARY

The Upper Trinity Regional Water District (UTRWD) proposes to construct an 180,000 acre-ft reservoir named Lake Ralph Hall in Fannin County near Ladonia, Texas. The on-channel reservoir will be near the headwaters of the North Sulphur River, which flows east through Texas, joining the South Sulphur River in Lamar County to form the Sulphur River, which then flows into Arkansas to its confluence with the Red River. The UTRWD proposes to use this reservoir for water supply to customer cities near the Dallas-Fort Worth Metroplex. The District will transfer 45,000 acre-ft of water per year to the Trinity River basin for municipal, industrial, and agricultural uses.

The possibility of sediment accumulation and loss of usable reservoir capacity is one of the primary areas of concern for all reservoirs. This study by KBR and Hydrau-Tech Inc. is a primarily geomorphologic assessment and qualitative analysis of the basin characteristics of the upper North Sulphur River watershed and sedimentation potential of Lake Ralph Hall. This primarily qualitative geomorphologic assessment addresses sediment transport, channel hydraulics and stability, and basin issues. A site visit was made to observe the basin characteristics and collect data. Other data comes from previous reports, interviews with residents, and gauges on the North Sulphur River. Data is classified into four categories: geometric, hydrologic, watershed soils, and channel sediments.

Data collection showed that the North Sulphur River has widened 30-50' and eroded vertically 7-11' in the last 40 years. This has caused the channel profile to become steeper than the original channel profile. The existing channel cuts through clayey and silty soils that are highly erosive. Even the shale bedrock is subject to wetting and drying forces that cause it to crumble and erode year after year. Wetting and drying occurs because of the highly intermittent nature of basin flows.

The channel morphology, hydraulics and hydrology, sediment transport capacity, and erosion potential below the dam are analyzed in this study to determine if a reduction in reservoir life is probable and to ascertain the effect of the reservoir on downstream conditions. The conclusions from this analysis are summarized below. Conclusions from this analysis are primarily qualitative; they are derived from field observations, data collection, engineering experience, and from limited cross section data derived from aerial photographs and USGS topographic data. Quantitative portions of this analysis are for use in order-of-magnitude estimates and should be considered a foundation for more detailed modeling and calculations. Results of this study should be used to decide the nature and source of potential problems so that plans for future analysis are more precise.

This analysis concludes that the sediment supply and transport capacity is such that the reservoir life will be reduced. A detailed model is needed to predict sediment transport rates and project reservoir life. A numerical river basin sedimentation and hydrology study is the next step in this process. This report also concludes that the tributaries feeding sediment to the proposed lake could be stabilized by constructing grade control structures. This study includes no analysis of the number, location, or effectiveness of such structures on the North Sulphur River tributaries. However, these structures would lengthen the reservoir life by reducing sediment loading. The extended life span would be dependent on the number of tributaries stabilized, the timing of that stabilization, and the resulting effectiveness of those structural measures. However, these structures will not eliminate all sediment transport to the reservoir; it will continue to fill in

with sediment because of the abundant sediment supply in the watershed. Additionally, water released from the reservoir will be sediment starved and will destabilize the reach downstream of the dam and cause erosion. Some sediment flushing operational measures can be employed to reduce this downstream erosion, but they will minimize, not eliminate, the erosion downstream of the dam.

CHANNEL MORPHOLOGY

1. Historic channel characteristics: A meandering channel with a small width depth ratio (at the channel forming discharge) and a gentle slope. The channel is not incised; during floods flow spills onto a wide floodplain. Velocities at high flows are low and main channel does not scour due to a wide flood channel. Sediment carried by the stream is deposited on the floodplain. The meander belts (distance between parallel plan form channel bounds) are 700 to 800 feet wide.
2. Straightened channel characteristics: A straight channel with a width depth ratio of 10 (at the channel forming discharge) and steeper bottom slope. The channel is incised; during floods flow does not spill onto the floodplain and are channelized in a straight alignment. Due to channelization, velocities are high during high flows and main channel scours. Sediment is carried by the stream and is transported through the reach due to increased transport capacity. There is little or no floodplain.
3. After straightening in the 1920's and 1930's, flows were channelized and gully erosion began, followed by widening of the channel. It then transitioned to a braided channel in some reaches.
4. The channel has reached a semi-equilibrium state in some reaches and will stop downcutting and widening and will transition from braided to meandering in an attempt to minimize stream power.
5. The tributaries to the upper reaches of the North Sulphur River are unstable and have headcutting, gully erosion, and widening that will continue for decades unless stabilized.
6. The tributaries could be stabilized by constructing grade control structures. These structures would be less effective on the main channel because the slope is closer to equilibrium and plan-form modifications will initiate to stabilize the channel geometry; grade control structures do not address this problem.

HYDRAULICS

1. The channel forming discharge corresponds to the 1-2 year storm. According to the TxDOT regional regression equations, this is approximately 4,000 cfs on the North Sulphur River.
2. Preliminary hydraulic computations are done using BRI-STARS. The unit stream power (product of velocity and slope) is calculated and shows that the upstream reach is still in the process of minimizing stream power while the lower reaches are closer to equilibrium.
3. Because the channel experiences long periods of little or no discharge followed by large events, the reservoir operation of the system will require rapid drawdowns which may cause additional bank instabilities upstream of the dam.

SEDIMENT TRANSPORT CAPACITY

1. All dominant sediment sizes in the North Sulphur River channel are transported during the channel forming discharge event.
2. Sands and gravels are transported as bed-load and the silts and clays are suspended load.
3. The North Sulphur River is currently supply limited because of high transport capacities. However, there is ample sediment supply in the river system to cause river sedimentation even as the transport capacity decreases.

4. Reservoir backwater effects will not extend far enough upstream to diminish the sediment supply from tributaries and other sources in the watershed.
5. A quantitative model of both channel forming events and flood events is needed to accurately predict the reservoir lifespan.

Erosion Below the Dam

Due to construction of the dam, clear (sediment free) water will be released from the reservoir. This change in the sediment loading will destabilize the reach downstream of the dam and cause adjustments to the river slope or plan-form. The severity of these adjustments is dependent upon many factors including the release of sediment from the dam if sediment flushing operations are followed.

1. Lane's concept of balance of physical processes in a river environment shows that the river will try to balance itself by reducing its slope.
2. Depending on reservoir releases, slope reduction will either occur by vertical scouring or meandering.
3. To reach historic stable slopes, the channel would erode 10-15 feet downstream of the dam.
4. The historic meander belt widths are larger than the existing incised channel. To meander, the river would attack existing banks.

1. INTRODUCTION

The Upper Trinity Regional Water District (UTRWD) proposes to construct an 180,000 acre-ft reservoir named Lake Ralph Hall in Fannin County near Ladonia, Texas. The on-channel reservoir will be near the headwaters of the North Sulphur River, which flows east through Texas, joining the South Sulphur River in Lamar County to form the Sulphur River, which then flows into Arkansas to its confluence with the Red River. The UTRWD proposes to use this reservoir for water supply to customer cities near the Dallas-Fort Worth Metroplex. The District will transfer 45,000 acre-ft of water per year to the Trinity River basin for municipal, industrial, and agricultural uses.

The possibility of sediment accumulation and loss of usable reservoir capacity is one of the primary areas of concern for all reservoirs. Throughout the world and in the United States, reservoir sedimentation is the cause of premature reservoir capacity loss in numerous cases (Albertson, Molinas, and Hutchkiss, 1996). In general, reservoirs are designed to have a service life of 100 years or more. However, due to unforeseen conditions or factors that are not accounted for in their design, some reservoirs are filled with sediment within 20 to 30 years, rendering them useless. In these cases, owners and communities are faced with costly means of decommissioning these reservoirs, dredging them, or providing structural sediment pass-through features.

This study by KBR and Hydrau-Tech Inc. is a primarily geomorphologic assessment and qualitative analysis of the basin characteristics of the upper North Sulphur River watershed and sedimentation potential of Lake Ralph Hall. This primarily qualitative geomorphologic assessment addresses the following issues:

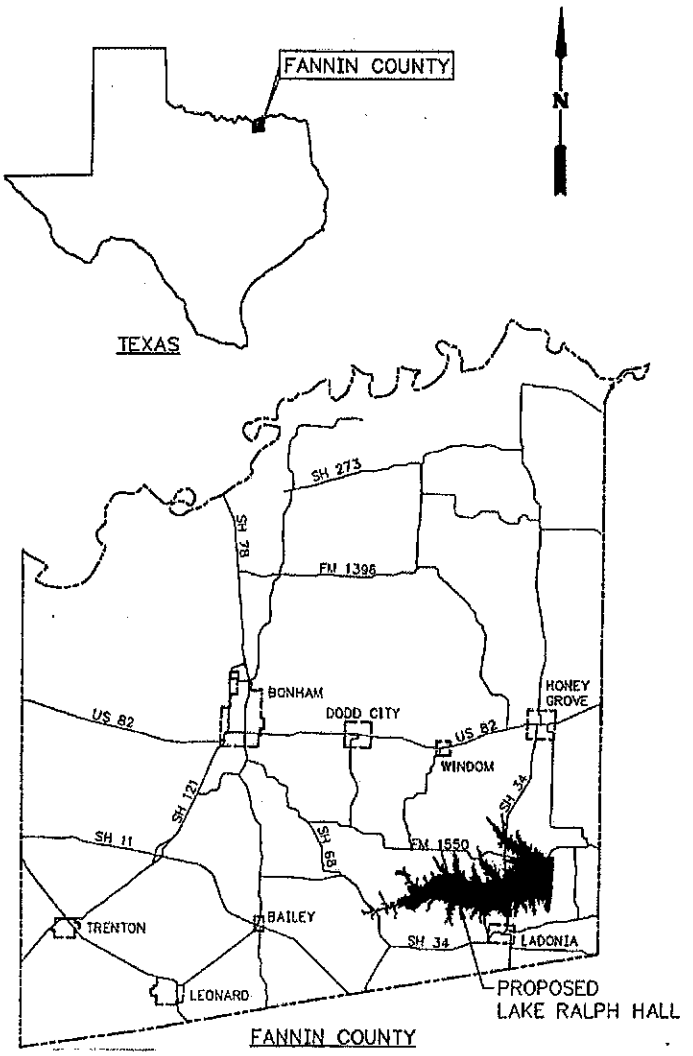


Figure 1.1 – Project Location Map

- *Sediment Transport*: Size of sediment the river currently transports; Determination of mode of transport (bed load or suspended load); Long-term scale aggradation or degradation; Classification as supply or transport limited; Scour potential.
- *Channel Hydraulics and Stability*: Channel flow characteristics; Plan form stability or instability; Historic river course; Potential for channel movement; Hydraulic controls.

- *Basin Characteristics*: Basin urbanization levels and future land use; Sources of sediment supply; Soil types and vegetation; Existing basin land use.

1.1. SEDIMENTATION PROCESS

In order to predict the North Sulphur River's response to Lake Ralph Hall reservoir, it is necessary to understand the processes involved in reservoir sedimentation. The following is a brief summary of the concept of sediment balance, supply limited and transport limited scenarios, sedimentation and erosion, and channel restoration.

A "stable" channel occurs when there is a balance between the sediment supplied to the river and the sediment transported by the river. When this balance is altered, the river becomes unstable and begins to erode or aggrade and change its slope, course, and form. Many conditions can create this imbalance. Man-induced changes in the river basin, such as urbanization, are major factors in limiting the supply of sediment to a river, increasing runoff, increasing the transport capacity of a river, and thereby causing erosion. On the other hand, removal of vegetation, grazing, and other changes to existing land uses can cause sedimentation by increasing the sediment supplied to the river. Thus, river systems can be classified as "supply limited" and "transport limited".

In a transport limited reach, the scales are tipped such that the transport capacity of the river is less than the sediment supply. One clear example of this situation occurs after forest fires; the loss of vegetative cover creates massively erodible hillsides that supply large amounts of sediment to a river that cannot transport the increased supply, causing the river to aggrade.

In a supply limited reach, the scales are tipped such that the sediment supply to the river is less than the transport capacity. Urbanization and increased vegetation are examples of changes in land use that could create this situation. Because the sediment supply has decreased and the river's ability to transport sediment has not changed, the river will begin to erode its bed and banks. Essentially, the lost supply is found in the river channel instead of the surrounding basin.

Another way to create a supply limited reach is to tip the scales by changing the transport capacity of the river, as is the case in the North Sulphur River. The Army Corps of Engineers straightened the North Sulphur River in the 1930's to provide flood control for the basin. By removing the meandering plan form of the river and replacing it with a straight plan form, the length of the river channel was shortened. This resulted in a steeper river slope, increased velocity, and as a result increased sediment transport potential. The existing sediment supply was inadequate for the increased transport capacity in the North Sulphur River; as a result the river eroded its bed and banks to restore equilibrium.

This report presents the results of a primarily geomorphologic assessment and qualitative analysis of the basin characteristics of the upper North Sulphur River watershed and sedimentation potential of Lake Ralph Hall. This report first describes data sources used in the study and then describes the analysis and results of the channel morphology, hydraulics, sediment transport capacity, and erosion potential downstream of the dam.

2. SOURCES OF DATA

Four principle types of data are used in this report: geometric, hydrologic, watershed soils, and channel sediments. KBR and Hydrau-Tech, Inc. visited the North Sulphur River in August 2005 to collect data and make observations of the study reach (the area impacted by Lake Ralph Hall). During that visit, channel cross sections were surveyed and channel sediments were collected. The team also collected previous reports related to the proposed reservoir site. The following reports are used in this analysis:

- "Ralph Hall Lake Reservoir Project Preliminary Hydrological Analysis", by Water Prospecting, and Resource Consulting, LLC, July 2000.
- "Hydraulic Study and Scour Report, North Sulphur River at SH 34", by TxDOT, May 2001
- Texas Department of Transportation (TxDOT) Channel Profile and Scour Measurement Reports for FM 2990, FM 38, and SH 34.
- NRCS Soil Survey for Fannin County, Texas

Historic photographs from the USGS are used to track changes to the channel geometry. USGS quad maps of the region from 1964and aerial photographs from 1952, 1969, 1982, and 1992 are used. The KBR team also interviewed local residents, members of the local Chamber of Commerce, and TxDOT employees knowledgeable of the area to learn the history of the North Sulphur River and to verify this analysis.

2.1. *GEOMETRIC DATA*

Geometric data describes the shape and size of the channel and of flow within the channel. The following are the primary geometric parameters used in this analysis:

- Cross section shape
- Top width
- Channel depths
- Width to depth ratios of dominant flows
- Sinuosity
- Channel thalweg (lowest point) elevations
- Reach length

This information is extracted from the USGS quad maps of the region, aerial photographs from 1952, 1969, 1982, and 1992, and TxDOT bridge hydraulics reports. These data are verified using field measurements collected at various sites during August 2005.

Figures 2.1 and 2.2 show the surveyed channel cross sections at the SH 34 bridge site (8,000 ft upstream from the proposed dam site) and at the FM 38 bridge site near the downstream end of the study reach (40,000 ft downstream from the proposed dam site) along with cross sections obtained from the 1964 USGS quad maps. The change to the channel cross section in the last 40 years is evident in these figures. In general, the channel at the SH 34 bridge has widened by 20 to 30 ft and eroded 11 feet. This is consistent with the TxDOT "Hydraulic Study and Scour Report" of the SH 34 bridge. The channel at the FM 38 bridge site has widened 40 to 50 feet and scoured 8 to 9 ft.

Figures 2.3 and 2.4 present channel cross sections derived from the 1964 USGS quad maps. In these figures, cross sections are identified by their distance from an arbitrary point 7,000 feet downstream of the FM 38 bridge site. In Figures 2.3 and 2.4, the proposed dam site is at station 46+912; the SH 34 bridge is

at station 59+300; and the BR 590 cross section is at station 103+912. Figures 2.2 and 2.3 show a general widening in the channel cross section as one moves downstream.

The channel longitudinal profile is shown in Figure 2.5. The profile derived from the 1964 USGS Quad maps and the profiles surveyed by the KBR team and TxDOT are all shown. This figure shows that the channel bottom in the reach downstream of the dam has eroded by 7 to 10 feet over the last 40 years. Figures 2.1 and 2.5 also indicate that the erosion has been more pronounced in the upper reach of the North Sulphur River.

The following additional cross section information is presented in Appendix D:

- Figures D.1 and D.2 present the surveyed channel geometry and longitudinal stream profile at SH 34. The channel profile was surveyed over an approximately 1,000 ft segment of the channel. The channel slope at this location is 0.0016 ft/ft.
- Figures D.3 and D.4 present the surveyed channel geometry and longitudinal stream profile at the FM 38 bridge. The channel slope at this location is 0.001 ft/ft.
- Figures D.5 and D.6 present the surveyed channel geometry and longitudinal stream profile at the proposed dam site. These cross sections indicate that the channel bottom width at the proposed dam site is between 130 and160 ft and channel side slopes are between 1:1 (horizontal units:vertical units) and 1.5:1.

Figures D.2 and D.4 also show TxDOT surveys of the FM 38 and SH 34 bridges. Minor discrepancies between the KBR and TxDOT measurements are expected because the KBR survey was conducted slightly upstream of the bridge face, a small distance away from the TxDOT survey.

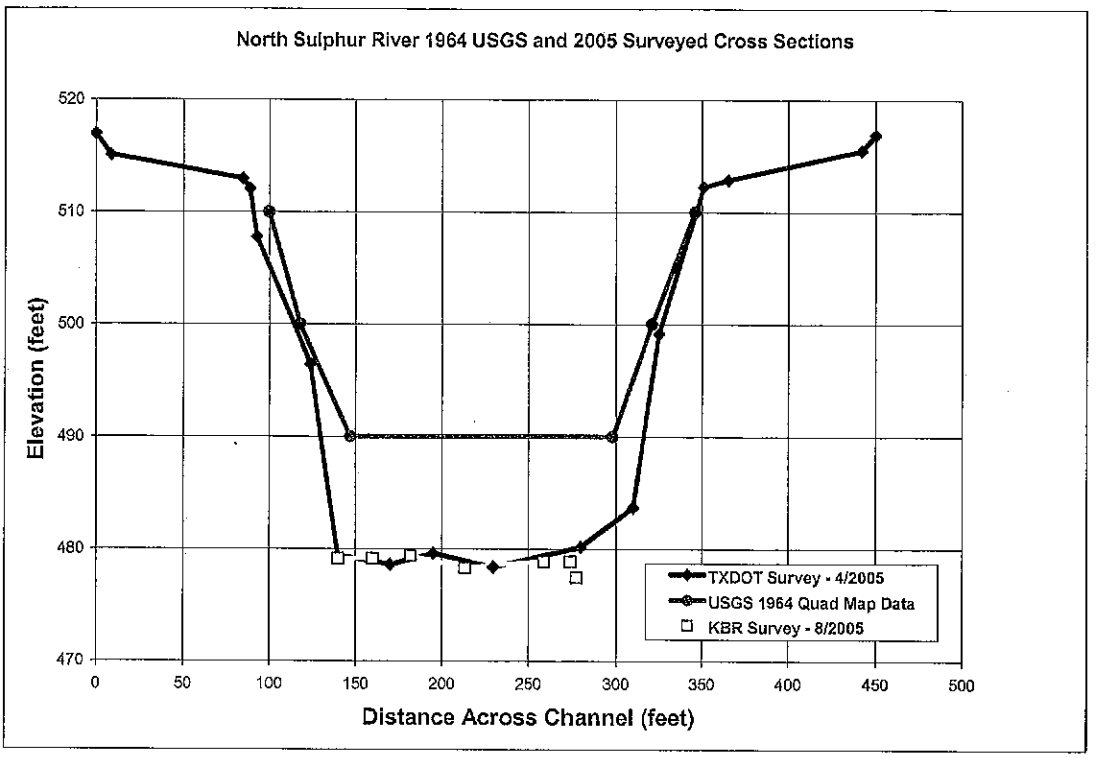


Figure 2.1 Surveyed channel cross sections at North Sulphur River near the SH 34 Bridge.

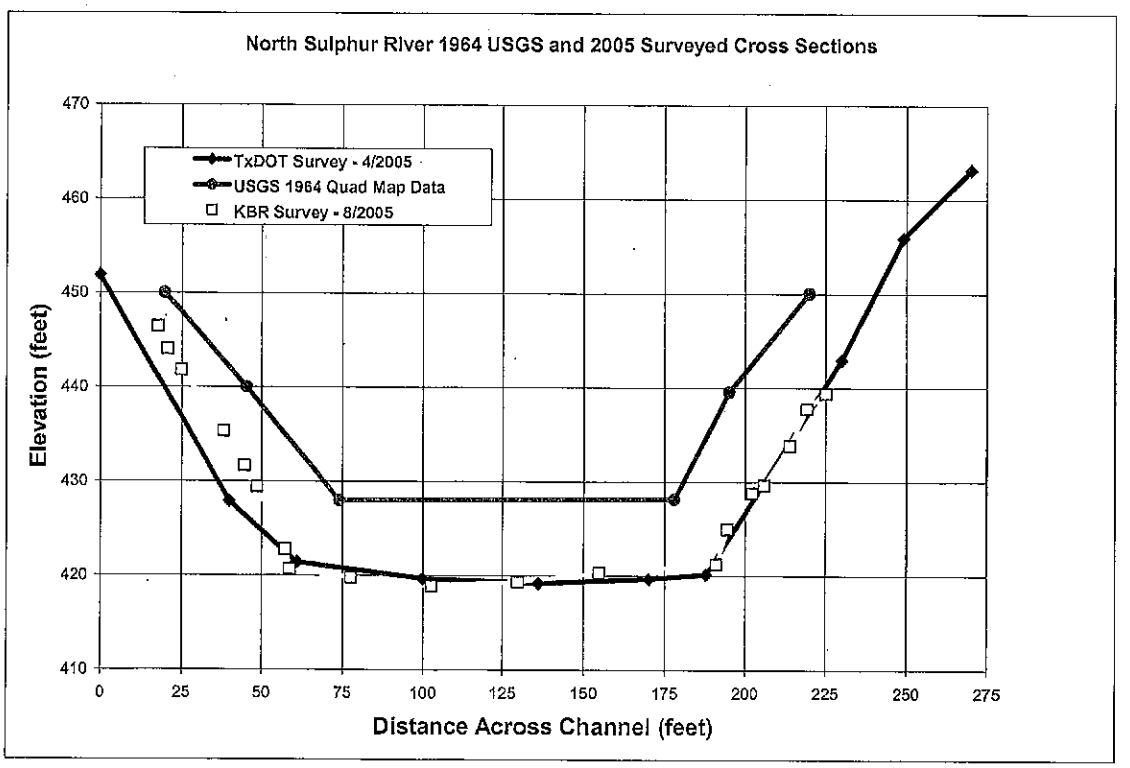


Figure 2.2 Surveyed channel cross sections at North Sulphur River near the FM 38 Bridge.

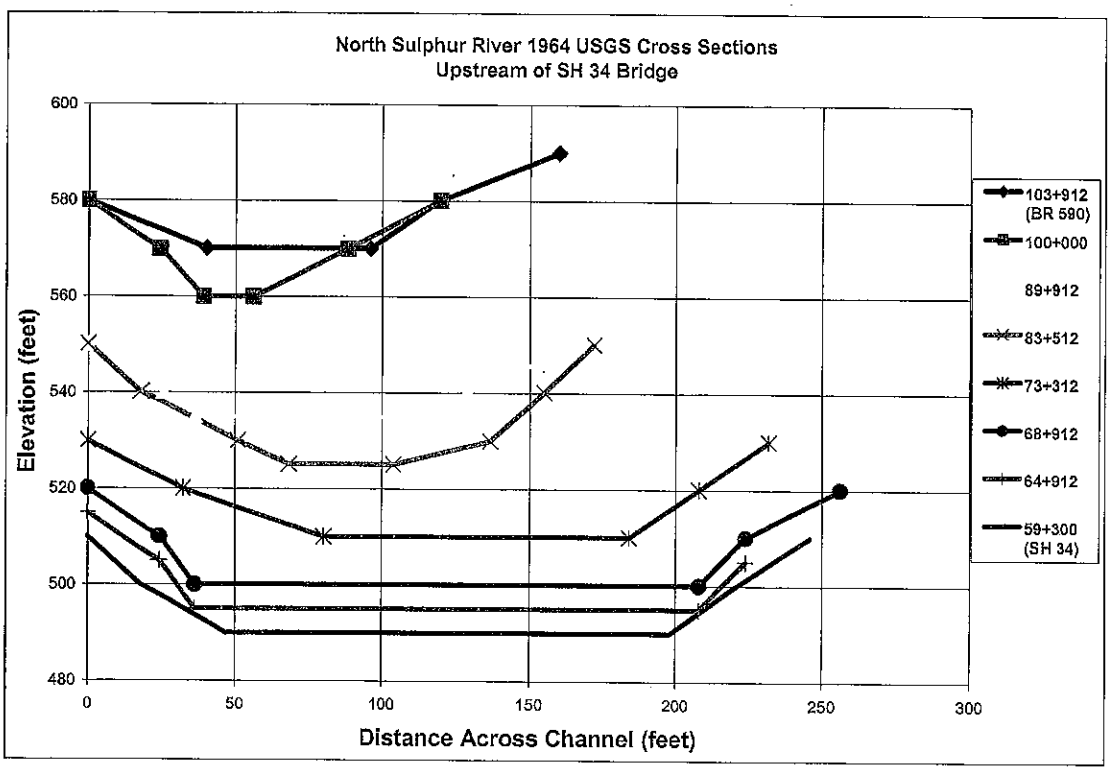


Figure 2.3 Channel cross sections along North Sulphur River upstream of the SH 34 Bridge.

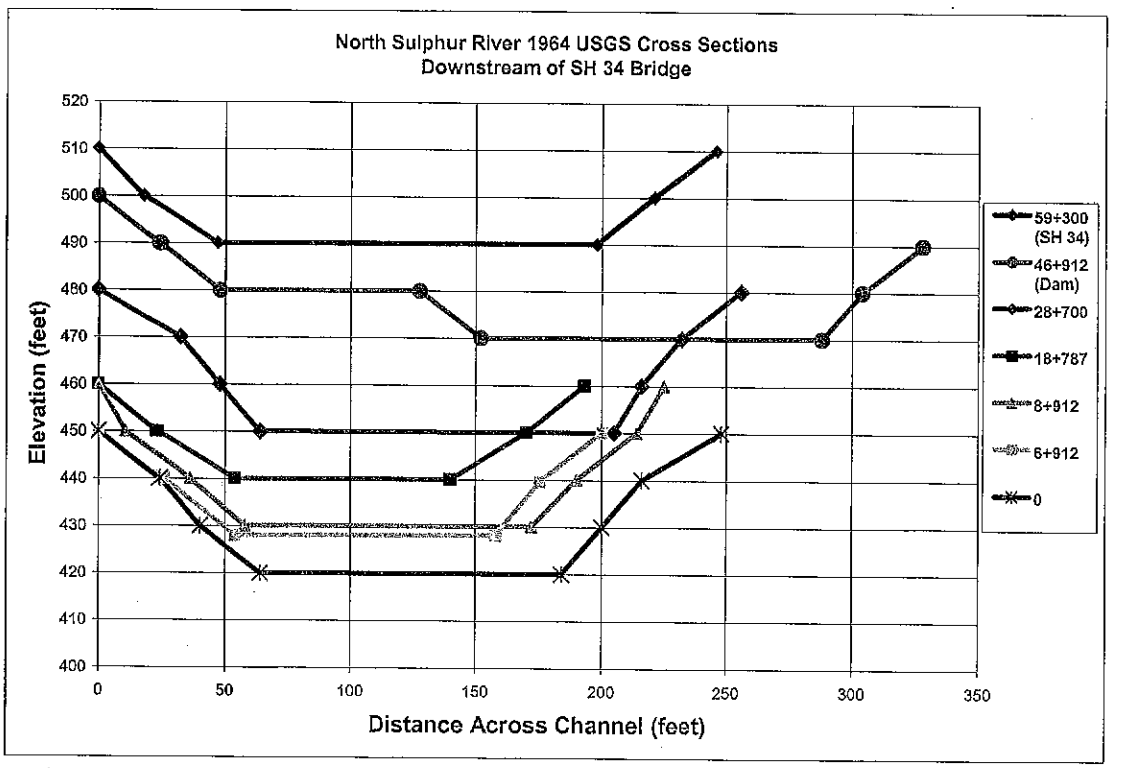


Figure 2.4 Channel cross sections along North Sulphur River downstream of the SH 34 Bridge.

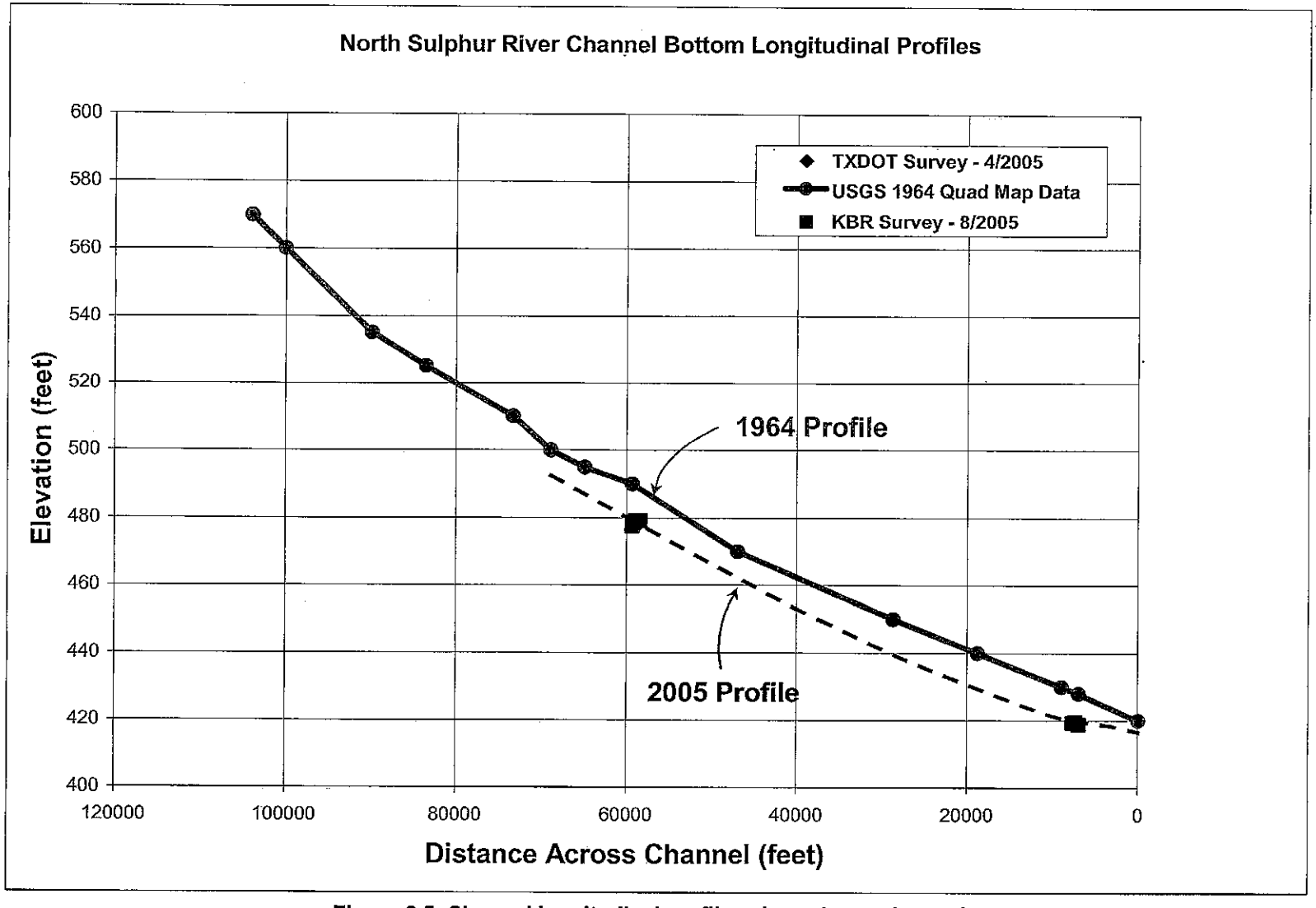


Figure 2.5 Channel longitudinal profiles along the study reach.

2.2. HYDROLOGIC DATA

2.2.1. FLOW RETURN PERIODS

TxDOT calculated the flow at a number of return periods for the North Sulphur River in Fannin County as part of the "Hydraulic Study and Scour Report" for the SH 34 bridge. Figure 2.6 below is the hydrologic data sheet from that report. Appendix A in this report contains other sources of data that would have been used by TxDOT for this analysis, including the regional regression equations, rainfall patterns, and hydrologic zones in Texas. The "Ralph Hall Lake Reservoir Project Preliminary Hydrological Analysis" report by Water Prospecting, and Resource Consulting, LLC in July 2000 is focused on the potential yield of Lake Ralph Hall. However, that report says the following about the watershed feeding the proposed reservoir:

> "The high percentage of clay soils in the watershed mean that there is generally little potential for infiltration and a large amount of precipitation is turned into runoff. The underlying rock characteristics are weak and so can get easily eroded. Both these factors are noted as the watershed has a comparatively high yield potential and erosion is evident once the bedrock unit is exposed. Since most of the watershed is covered by grassland, woodland, or is cultivated, this means that there is a medium amount of rainfall capture, which will reduce the amount of runoff."

2.2.2. CHANNEL FORMING DISCHARGE

The "channel forming discharge" is generally defined as the flow which performs the most work, where work is defined in terms of sediment transport. In other words, the flow that transports the most cumulative sediment is the channel forming discharge. Research shows that this is not a large flood event; a recurrence interval of 1-2 years is commonly accepted as the channel forming event. According to Figure 2.6, the 1.5-year flow event is roughly 4,000 cfs. This was calculated by TxDOT using regional regression equations, not gauge data and rigorous hydrologic modeling.

2.2.3. HYDROGRAPH CHARACTERISTICS

Figure 2.7 is a graph of daily flow data from the USGS flow gauge on the North Sulphur River near Cooper, Texas. This extended period hydrograph (a graph of flow vs. time) indicates that no substantial base flow is present in the channel. In the absence of rain, the channel flow drops to nearly zero. This ephemeral flow pattern will create variability in the proposed reservoir pool level, causing wetting and drying of the banks and therefore bank instability.

County: Fannin CSJ: 0174-03-034 Stream: N. Sulphur River

	English Units	Metric Units
Drainage Area	83.6 mi^2	216.5 km^2
BSF	1.99	1.99
Slope m	19.958 feet/mile	0.0038 m/m

Units of Flows and Range of Drainage Area	For Calculation Purposes Only					
	Frequency (years)					
	2	5	10	25	50	100
for area < 32 mi^2 Q_L (cfs)	4,379	8,689	11,417	15,308	18,429	21,771
(m^3/s)	124	246	323	433	522	616
for area > 32 mi^2 Q_G(cfs)	4,953	10,921	21,168	33,182	44,368	57,813
(m^3/s)	140	309	599	940	1256	1637

Flow Results						
Frequency (years)	2	5	10	25	50	100
Q_T (cfs)	4,908	10,747	20,409	31,791	42,350	55,010
Q_T m^3/s	139	304	578	900	1,199	1,558

Weighted Flows for Area betweeen 10 and 100 mi^2 are Calculated as follows (English units only)

$$Q_T = (2 - \log(area))Q_L + (\log(area) - 1)Q_G$$

Frequency (T-years)	Q_L	Q_G
2	$(832)(area^{0.568})(m^{-0.265})$	$(129)(area^{0.578})(m^{0.364})$
5	$(584)(area^{0.610})$	$(133)(area^{0.605})(m^{0.578})$
10	$(831)(area^{0.592})$	$(178)(area^{0.644})(m^{0.699})(BSF^{-0.239})$
25	$(1196)(area^{0.578})$	$(219)(area^{0.651})(m^{0.776})(BSF^{-0.267})$
50	$(1505)(area^{0.566})$	$(261)(area^{0.653})(m^{0.817})(BSF^{-0.291})$
100	$(1842)(area^{0.558})$	$(313)(area^{0.654})(m^{0.849})(BSF^{-0.316})$

Where:

Area is the contributing drainage area in mi^2.

BSF is the ratio of the longest mapped channel squared to the contributing drainage area.

Slope is the ratio of change in elevation of the longest mapped channel from the site to the headwaters to the length of the longest mapped channel. Units are in feet/mile.

Q_L is the flow calculated by using the regression equations for areas less than 32 square miles.

Q_G is the flow calculated by using the regression equations for areas greater than 32 square miles.

Figure 2.6 Hydrologic Data Sheet for the North Sulphur River near SH 34.

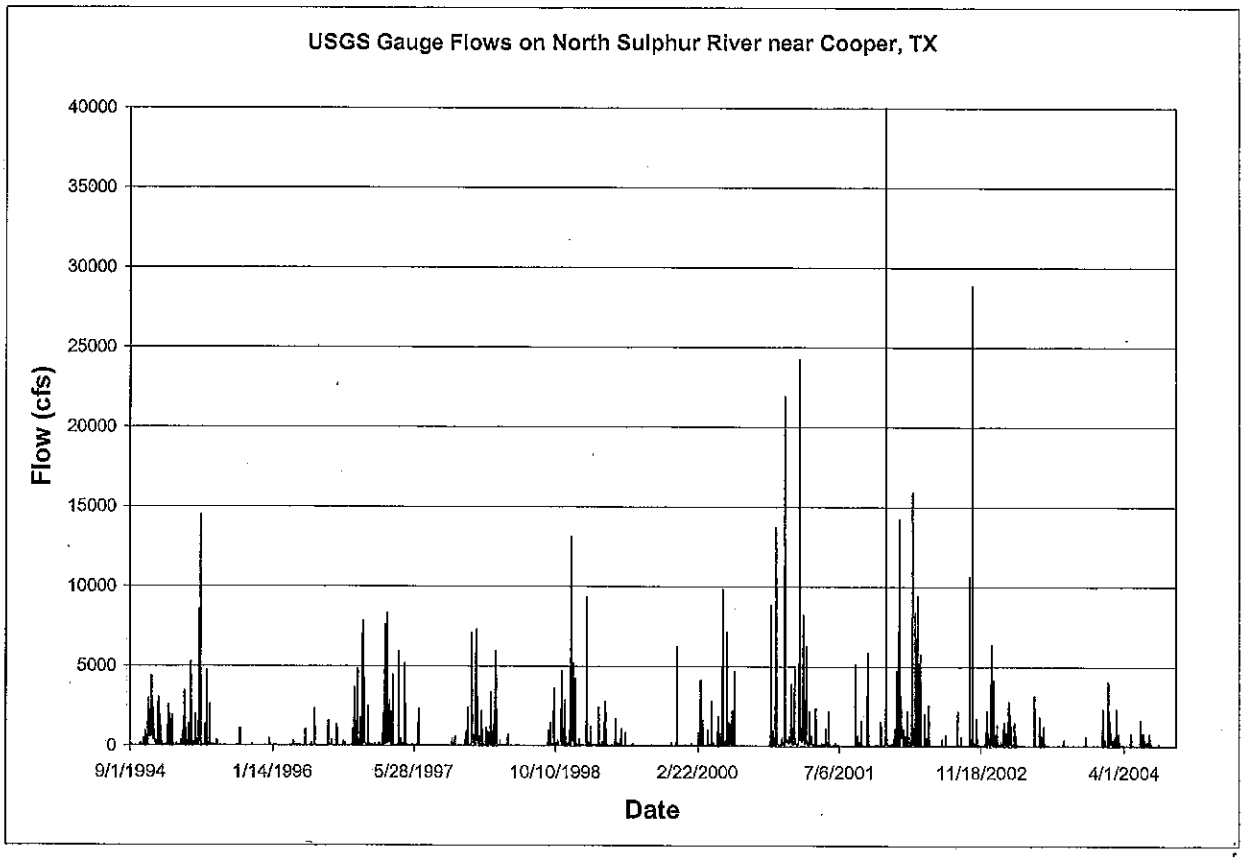


Figure 2.7 Flow data from USGS gauge 07343000 near Cooper, Texas.

2.3. WATERSHED SOIL AND LAND USE CHARACTERISTICS

The North Sulphur River is deeply entrenched in the Tinn Clay formation. According to the NRCS Soil Survey for Fannin County, this soil formation, highlighted in orange in Figure 2.8, is a very deep, nearly level clay soil found on broad flood plains along streams, mainly along the North Sulphur River. The soil is subject to flooding once every 20 to 30 years. The watershed surrounding the channel is composed of a variety of soil types including the Heiden-Ferris complex and Ferris clays; both have a severe hazard of water erosion. Other soils surrounding the North Sulphur River have a moderate or slight risk of water erosion, but a significant portion of the surrounding soils carry the moderate to severe rating by the USDA soil survey of Fannin County. Appendix C contains an overview of soils in Fannin County.

Soils in the Fannin County North Sulphur River watershed are erosive and deep, and will be a long-term source of sediment supply to the channel. Land use is primarily agricultural and natural vegetation consists of grassland and woodland. Urban areas are very small and sparsely populated. There is no indication that changes in land use in the watershed are imminent and soil supply to the channel from the watershed should remain at existing levels.

Figure 2.8a

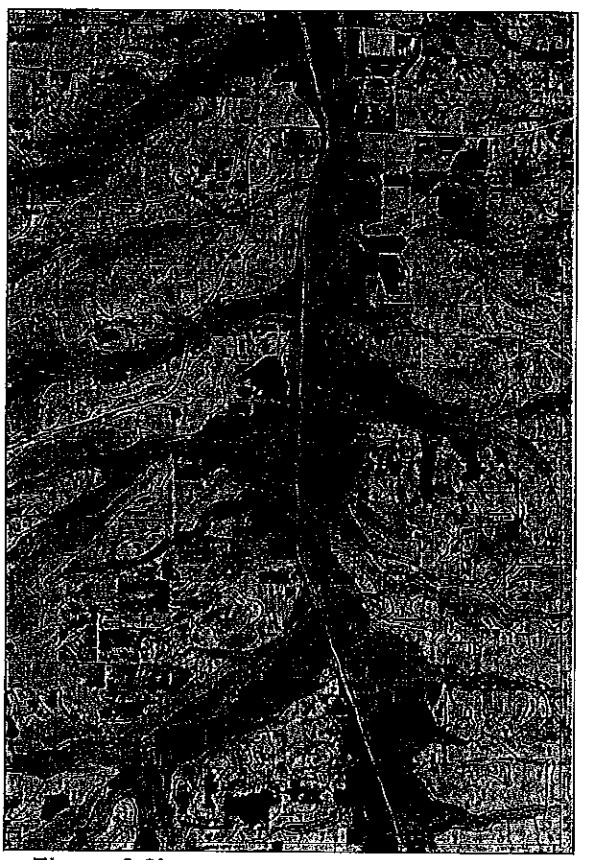


Figure 2.8b

Detailed soil types along North Sulphur River and bordering areas: a) at headwaters; b) upstream from the proposed reservoir.

2.4. CHANNEL SEDIMENTS

Sediment samples were taken from the bed and banks of the North Sulphur River, Allen Creek, Brushy Creek, and near the confluence with Pickle Creek. Samples were taken from representative locations to define size gradations for typical channel bed material, bank material, and any gravel bars or other coarse sediment sizes. Appendix B contains gradation results. Figures 2.9 and 2.10 below are sediment size distributions that are representative of the channel bed sediments, especially in the upstream-most reaches of the watershed. Figure 2.11 is the distribution of a gravel bar in the channel bottom near the FM 38 bridge.

In general terms, 60 to 70 percent of channel sediments are composed of silts (30-40 percent) and clays (30 percent). The remaining coarser sediments are sands and gravels. The mean diameter of the coarser sediments is 1 mm (sand). In some study areas, all loose fine material has been washed away and coarse material remains in larger percentage than other areas; the gravel bar near the FM 38 bridge is an example of this situation.

The sediment size analysis shows that the sediment supply to North Sulphur River is mostly very fine, easily erodible material; only 10 to 15 percent of the sediment samples contain gravel size fractions. Soils in southeast Fannin County are clay-rich, derived mostly from shale and chalk bedrocks. The channel has eroded to bedrock in many areas. Once exposed, this material is subject to wetting and drying forces which quickly break the formation into fine materials, silts and clays, that are easily eroded away. This broken, eroded material was observed in every study area.

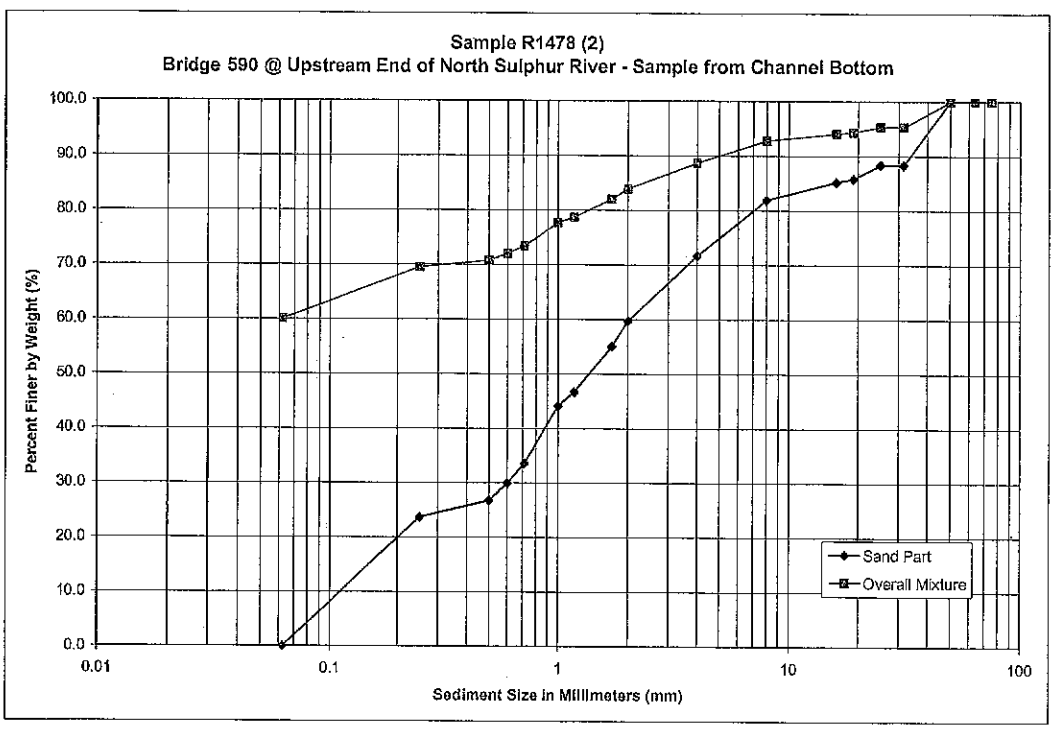


Figure 2.9 Channel bed sediment size distributions at Bridge 590 at the upstream end of the North Sulphur River

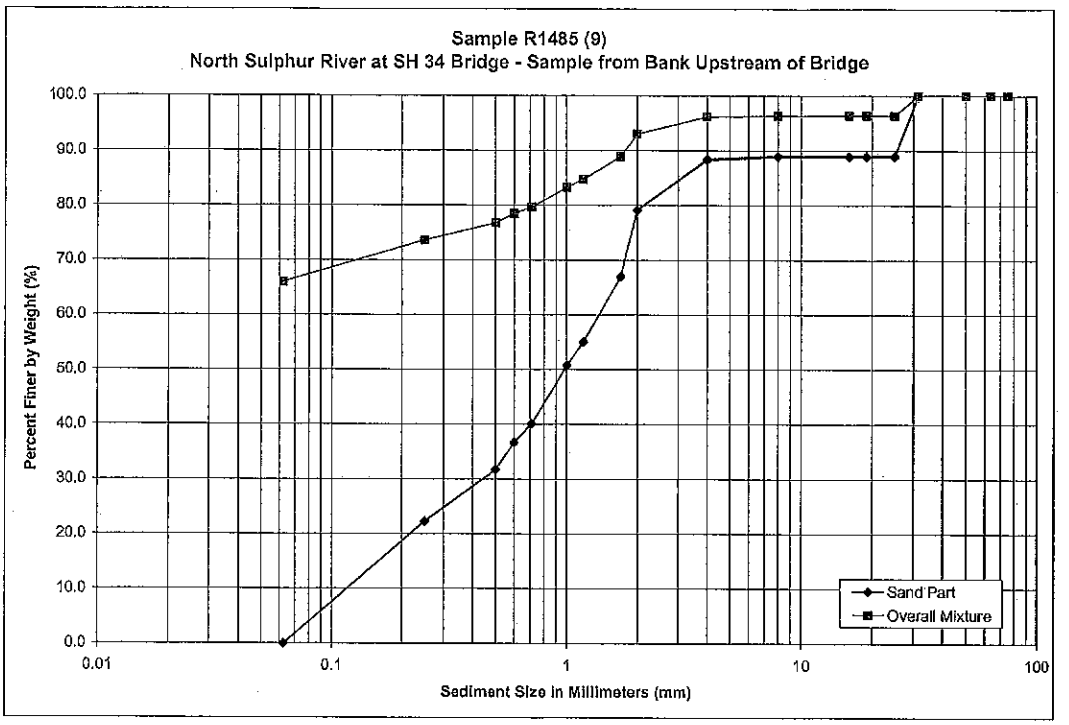


Figure 2.10 Bank sediment size distributions at the SH 34 bridge crossing of the North Sulphur River.

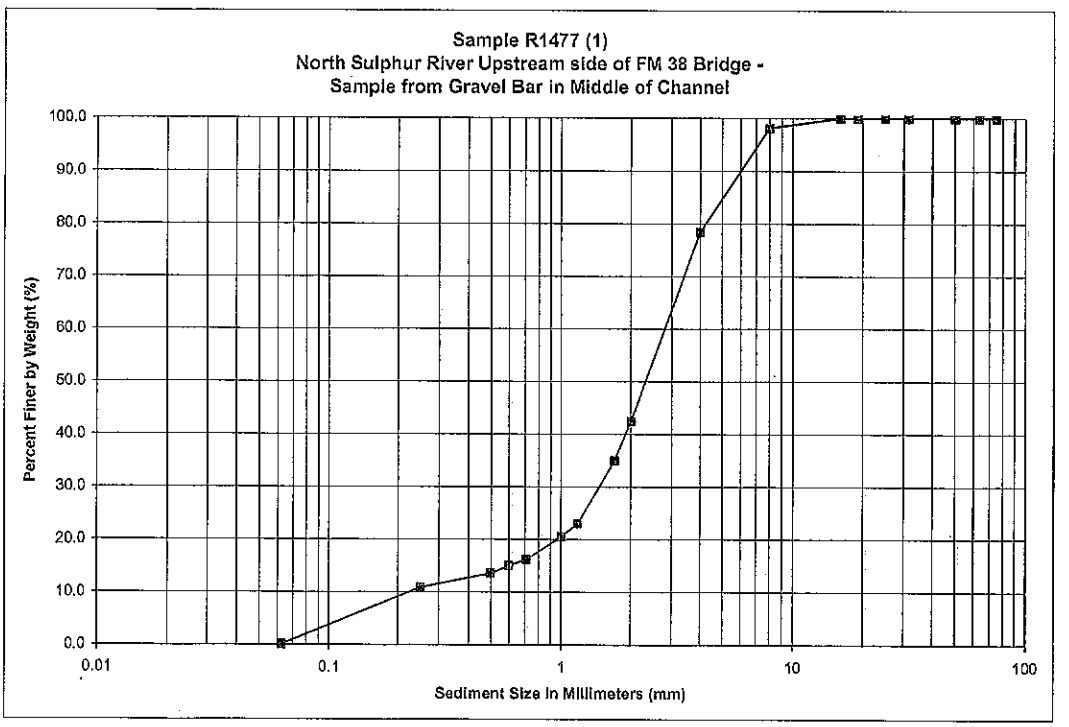


Figure 2.11 Channel sediment size distribution from a gravel bar upstream of the FM 38 bridge site.

3. CHANNEL MORPHOLOGY

River morphology is the study of changes that occur to a river system over time. All rivers are dynamic systems that change plan form (e.g. straight, meandering, braided), slope, and geometry in response to changes in the watershed. However, some watershed changes can be drastic enough to destabilize a river system. The North Sulphur River was destabilized when the U.S. Army Corps of Engineers straightened the channel in the 1920's and 1930's in an attempt to control flooding in the basin. USGS historic aerial photography is used to identify the original channel form and compare it with the straightened channel shown in the 1964 USGS quad maps and in the 1992 USGS aerial photos.

The channel characteristics before and after the channel straightening are shown in Table 3.1. These characteristics are obtained using the USGS topographic information of the area from 1964, as shown in Figure 3.1.

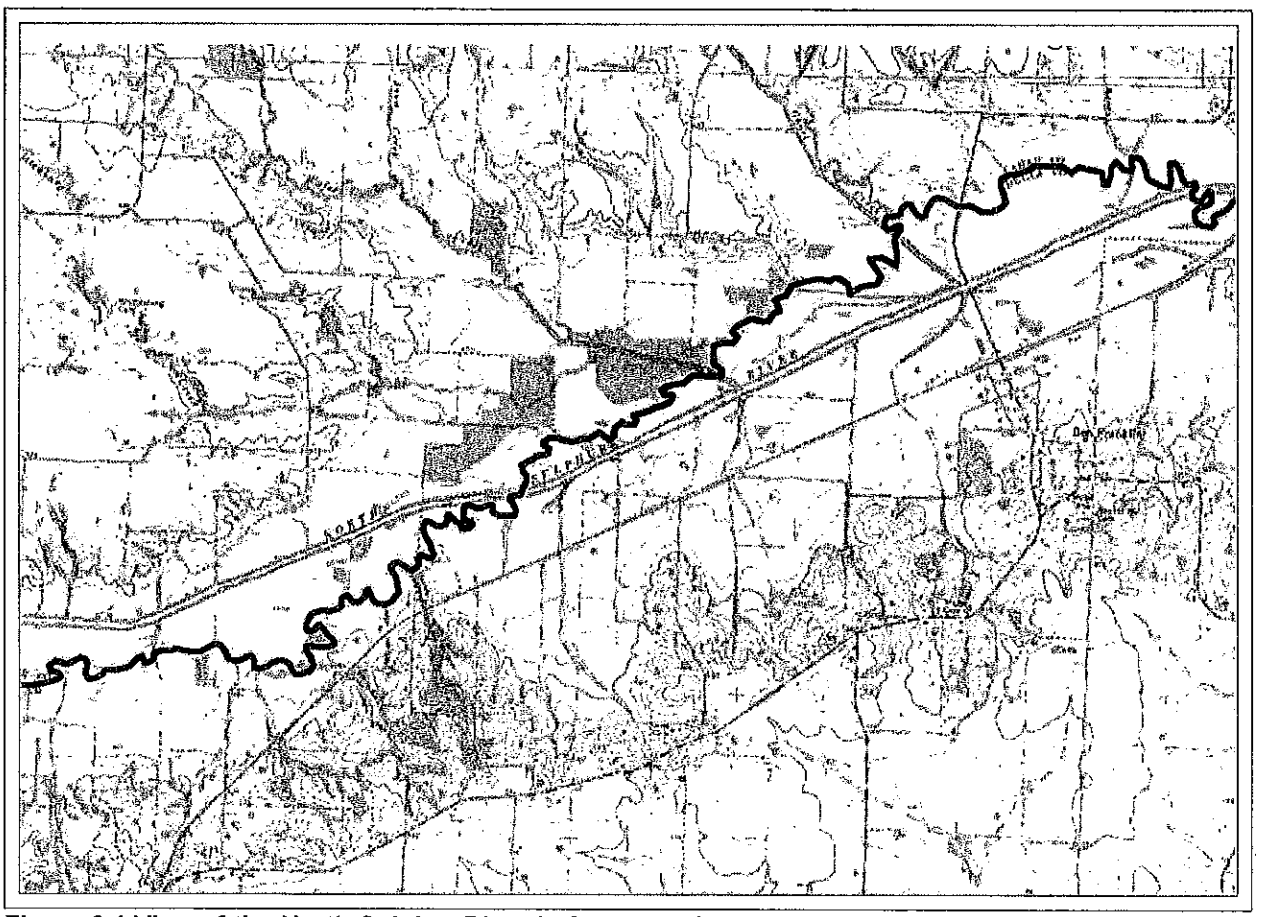


Figure 3.1 View of the North Sulphur River before and after US Army Corps of Engineers' channelization project.

Table 3.1 – Channel Characteristics

Parameter	Historic Channel	Straightened Channel as of 1964
Channel Length (ft)	57,906	34,912
Valley Length (ft)	34,912	31,514
Sinuosity (channel length/ valley length)	1.66	1.02 (Straight)
Top Width (ft)	50 to 55	74
Bottom Width (ft)	20 to 25	35
Side Slope (horizontal:vertical)	. 1.5:1	1.5:1
Depth (ft)	10	25
Width/Depth Ratio at channel forming discharge	5 to 5.5	10 to 30
Elevation Drop between Upstream and Downstream Limits (ft)	25	37
Channel Slope	0.0006	0.00106

Historic Channel Characteristics: A meandering channel with a small width depth ratio and a gentle slope. The channel is not incised; flows spill onto a wide floodplain during floods. Due to a wide flood channel, during high flows velocities are low and main channel does not scour. Sediment carried by the stream is deposited on the floodplain. The meander belts (distance between parallel plan-form channel bounds) are 700 to 800 feet wide.

Straightened Channel (1964) Characteristics: A straight channel with a width depth ratio of 10 to 30 (at the channel forming discharge) and steeper bottom slope. The channel is incised; flows do not spill onto the floodplain during floods and are instead contained entirely within the channel banks (i.e. channelized). Due to channelization, velocities are high and main channel scours during high flows. Sediment is carried by the stream and is transported through the reach due to increased transport capacity. There is little or no floodplain.

The North Sulphur River has experienced severe head-cutting and gully erosion. The channel width has increased from an estimated original 20' wide and 10' deep to an existing 200' to 250' wide and 30' deep (geometric depth, not flow depth). Two main factors have contributed to the significant scour that is apparent in the 1952 aerial photograph: the channel sinuosity was severely reduced and the flows were channelized.

The 1952 and 1992 USGS aerial photos are used to identify the original channel sinuosity and compare it with the sinuosity of the straightened channel. The reach between the proposed site of the Lake Ralph Hall dam (station 45+000) to a point upstream of the confluence with Allen Creek (station 90+000), a distance of

roughly 10 miles, is used for this comparison. Figure 3.2 shows a representative reach from both the 1952 and 1992 aerial photos. This analysis shows that the overall sinuosity has decreased from 1.66 to 1.02, where 1.0 is straight with no meanders. This dramatic drop in sinuosity has effectively increased the channel slope by a factor of 1.5 to 2.

Channelization is the concentration of flow within the channel banks. Before straightening, the North Sulphur River carried a portion of flood flows in between the banks and a portion in the floodplain. The river now carries the entire flood flow in the main channel, thereby increasing flow velocity and the transport capacity of the flow. The increased channel velocities and slopes have caused the deepening and incision of the main channel. By 1952, the river channel had scoured significantly.

As stated earlier, rivers are dynamic systems that respond to changes in the watershed. Plan form is a description of the river pattern; meandering, braided, and straight are the most common examples. In response to the artificial straightening imposed on the North Sulphur, the river first began gully erosion, cutting down vertically by eroding the bed. As the slope of the river reduced, channel widening ensued and the floodplain disappeared as flow was channelized. These changes should be viewed in terms of what form the river is trying to establish, and this form is based on the principle of minimum stream power. Stream power, the product of flow velocity and slope, is a measure of the channel's sediment transport capability. Equilibrium in the river system is reached when the stream power reaches a minimum point. In other terms, the channel is seeking to minimize the energy expended to transport the available sediment.

The North Sulphur River began as a meandering channel, was subsequently straightened, then began gully erosion, widening, and portions of the channel began braiding. The braided plan form is not a stable condition, and the channel is now moving towards an equilibrium state by starting to meander. A meandering stream is geomorphologicaly stable. Figures 3.3 through 3.6 show examples of these changes in the channel.

Figures 3.3 and 3.4 are aerial photos from 1952 and 1992 respectively of the upstream reach of the North Sulphur River near the confluence with Allen Creek. In the 1952 photo, a braided pattern has developed in between the channel banks in some portions of the channel. In the 1992 photo, the channel has changed plan form and begun meandering. At this point, the channel is in a semi-equilibrium state in this short reach; it passes all incoming sediment. Accordingly, this area is used for sediment transport calculations so that estimates are not skewed upwards, as they would be if a portion of the channel with depositional tendencies were used.

Figures 3.3 and 3.4 also show evidence of changes to the North Sulphur River tributaries. As the main channel has eroded and widened, headcuts have also initiated in the tributaries and are causing the same destabilization as in the main channel. Allen Creek in Figure 3.3 is a tortuously meandering creek. In Figure 3.4, 40 years later, the sinuosity has decreased as the creek moves away from equilibrium and begins to erode and widen.

Figures 3.5 and 3.6 are aerial photos from 1952 and 1992 respectively of the SH 34 bridge crossing on the North Sulphur River. The original meandering channel can be seen in the top of each photo. The channel in these photos is still destabilized and following a braided pattern. However, the river here has most likely eroded and widened to its maximum point and is beginning to meander. The meander belts (distance

between parallel plan-form channel bounds) of the original channel are 700 to 800 ft wide, so the meanders now forming will attack the existing banks and move outside the existing channel form. Evidence of this bank instability is evident when comparing Figures 3.5 and 3.6.

Considering the plan form changes from 1952 to 1992, this is a slowly evolving process and is not an excess sediment transport capacity issue. The channel has effectively decreased the sediment transport capacity through the changes described here, and is now changing plan form to reach equilibrium. At this stage of channel evolution, the main bulk of channel degradation in the main channel has already taken place. However, the tributaries are continuing to degrade and widen and will continue to do so. The sediment transport capacity is greater than the sediment load in these channels.

The tributaries could be stabilized by constructing grade control structures. These structures seek to restore equilibrium channel slope and prevent further erosion. This study includes no analysis of the number, location, or effectiveness of such structures on the North Sulphur River tributaries. However, the existing geomorphologic progression in these tributaries suggests that grade control structures may still be effective. These structures would be less effective on the main channel because the slope is closer to equilibrium and plan-form modifications will initiate to stabilize the channel geometry; grade control structures do not address this problem.

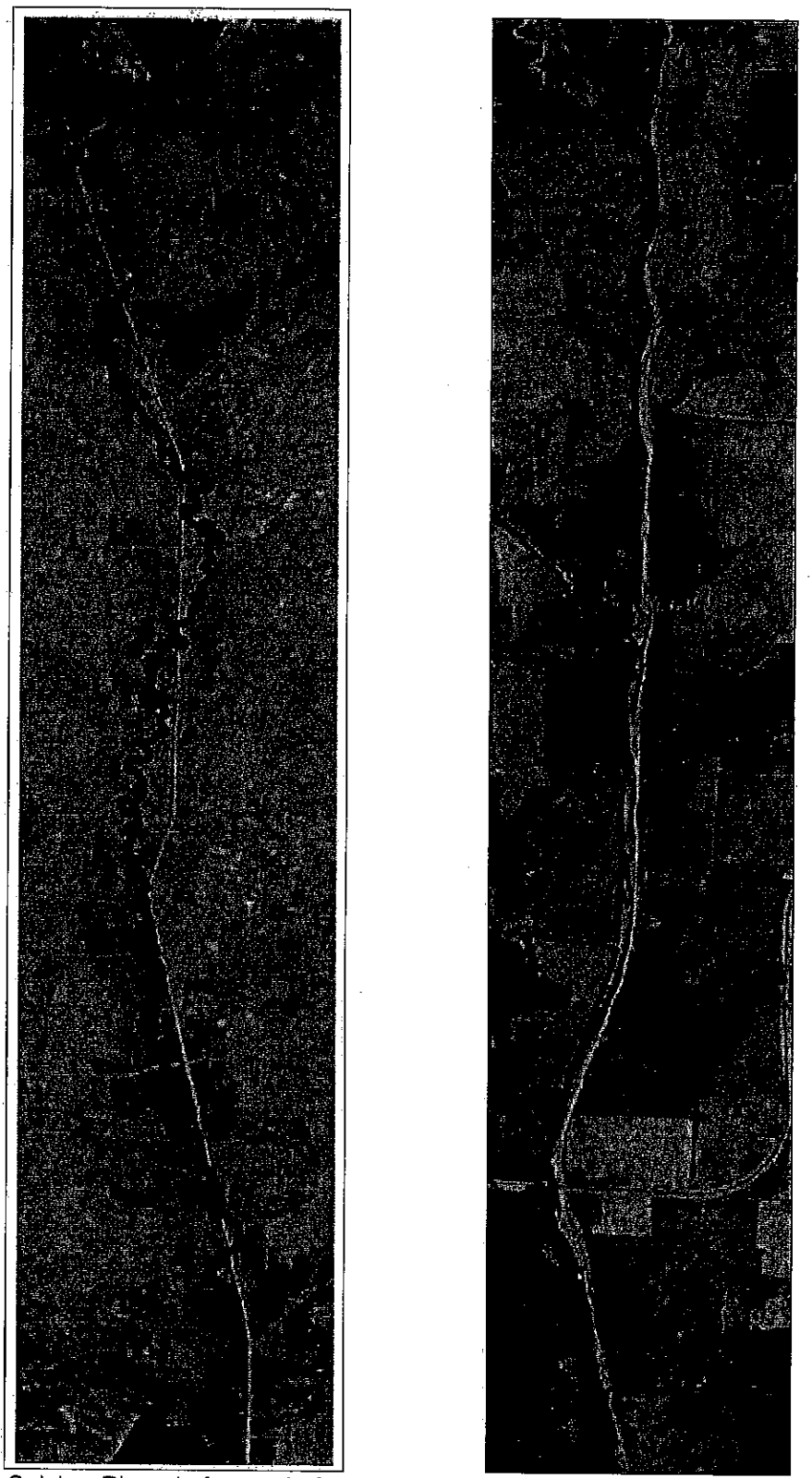


Figure 3.2 North Sulphur River before and after channelization: from 1952 and 1992 aerial photographs.

Figure 3.3 North Sulphur River confluence with Allen Creek: from 1952 aerial photograph.

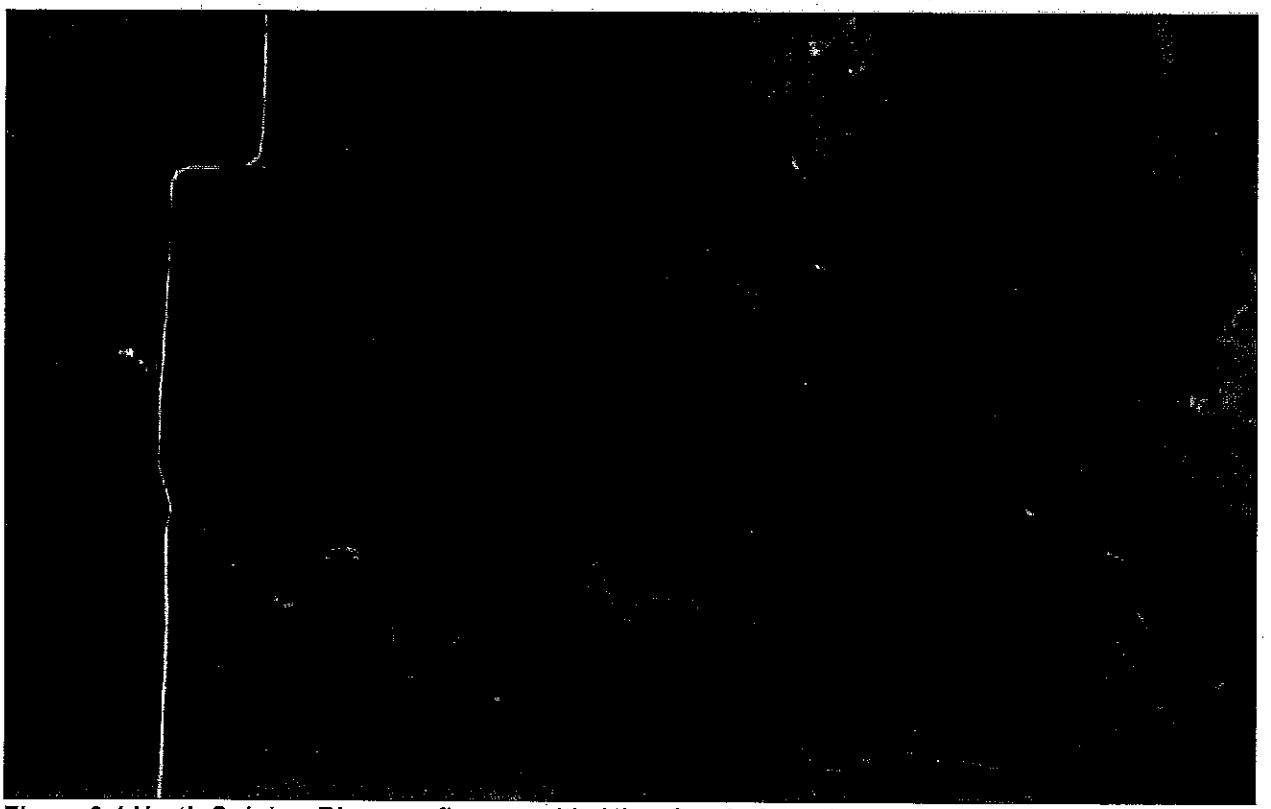


Figure 3.4 North Sulphur River confluence with Allen Creek: from 1992 aerial photograph.

Figure 3.5 North Sulphur River at SH 34: from 1952 aerial photograph.

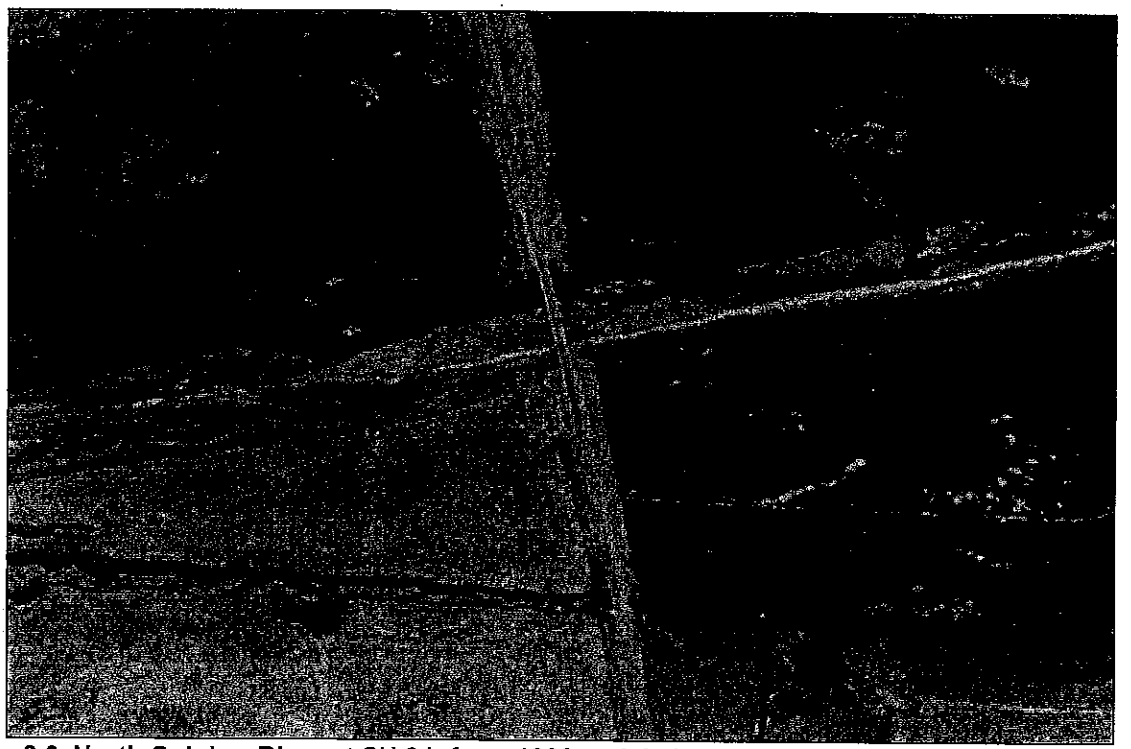


Figure 3.6 North Sulphur River at SH 34: from 1992 aerial photograph.

4. HYDRAULICS

As discussed in section 2.2.2, the channel forming discharge corresponds to the 1.5-year return frequency flow. Because this is the flow that transports the most cumulative sediment, hydraulic computations were made and unit stream power was calculated at this discharge (4,000 cfs per the regional regression equations). Hydraulic computations were carried out using cross sections generated from the 1964 USGS quad maps. Downstream boundary conditions were set at uniform flow, or normal flow depth. Appendix F contains the results of these computations. These calculations are preliminary and based on rough geometric data and should not be considered a comprehensive hydraulic study; they are for approximation purposes only.

Figure 4.1 is a comparison of the channel slope and unit stream power (the product of slope and velocity). The unit stream power is directly proportional to sediment transport, and this figure shows that after decades of channel adjustments, the downstream reaches have reached a semi-equilibrium condition where the unit stream power has reached a tentative steady state; the upstream reach is still away from equilibrium. Because this information is based on 1964 data, more recent geographic data would likely show that the upstream reaches are closer to this semi-equilibrium condition. As discussed in section 3, the tributaries are still highly unstable.

Hydraulic controls are locations that control flow upstream or downstream of that location. They are typically permanent (or relatively permanent) structures or natural features such as bedrock outcrops, waterfalls, dams, and other man-made structures. No hydraulic controls were found during the study field visit; the reach between FM 38 and BR 590 was inspected.

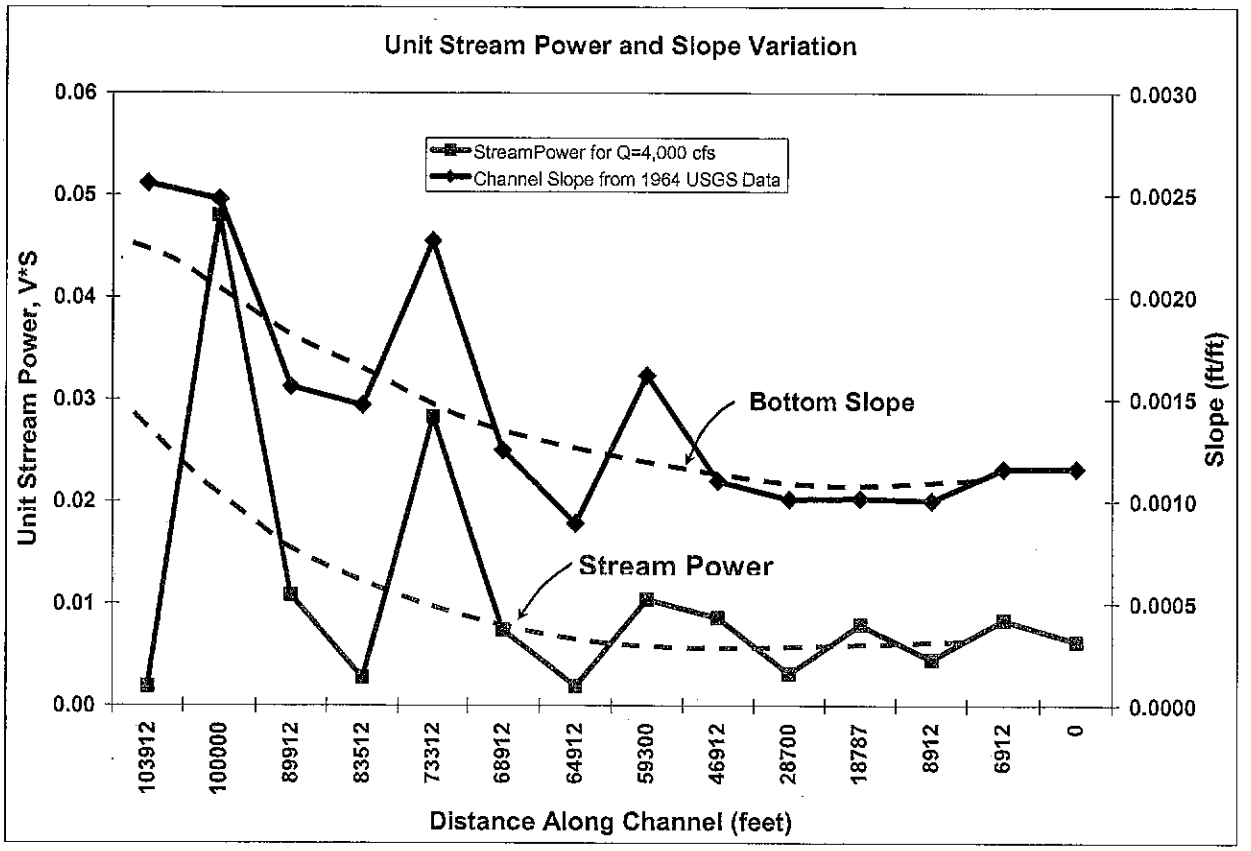


Figure 4.1 Unit Stream Power (Velocity-Slope product) distribution along the North Sulphur River.

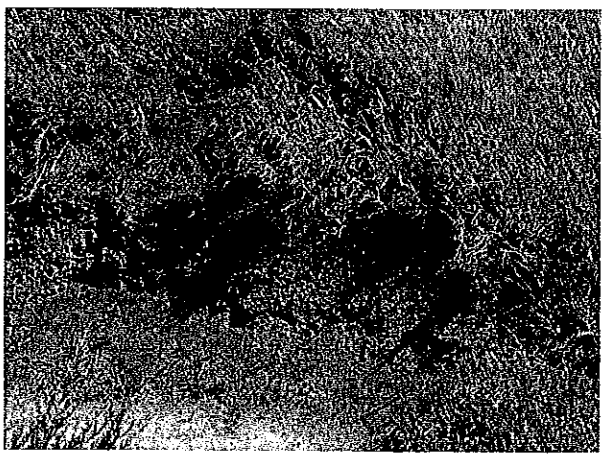
5. SEDIMENT TRANSPORT

This section provides qualitative conclusions about sediment transport to the proposed reservoir. The results of hydraulic computations and channel sediment size information show that all dominant sediment sizes in the North Sulphur River channel (sands, silts, clays) are transported during the channel forming discharge event. Sands and gravels are transported as bed-load and the silts and clays are suspended load.

Portions of the North Sulphur River act in a supply limited mode—the transport capacity is higher than the supply, which is causing erosion of the bed and banks. However, other portions work in a transport limited mode because the supply is so abundant and available from surrounding farmland and the highly erosive soils in the watershed. Even though it operates in a supply limited mode in the downstream end, there is ample supply in the upper end of the watershed. Figure 5.1 shows examples of sediment sources in the watershed, such as the banks of the main channel and tributaries and surrounding farmland. Continued erosion from the tributaries is also expected unless a program of channel stabilization is implemented.

The existing channel transport capacity exceeds the sediment supply so that all sediment inflow is transported downstream. The proposed reservoir would create a slow moving backwater upstream of the dam. This backwater area will reduce the channel transport capacity and produce sedimentation. However, this backwater will not extend far enough upstream to reduce the transport capacity at the sediment source. The tributaries will continue to erode and the watershed will continue to contribute sediment at a rate sufficient to reduce the reservoir life span.

A quantitative model of both channel forming events and flood events is needed to accurately predict the reservoir lifespan. The sediment samples and hydraulics, the quality of watershed sediments, and the geomorphologic conditions all point to a reduction in reservoir life due to sedimentation.



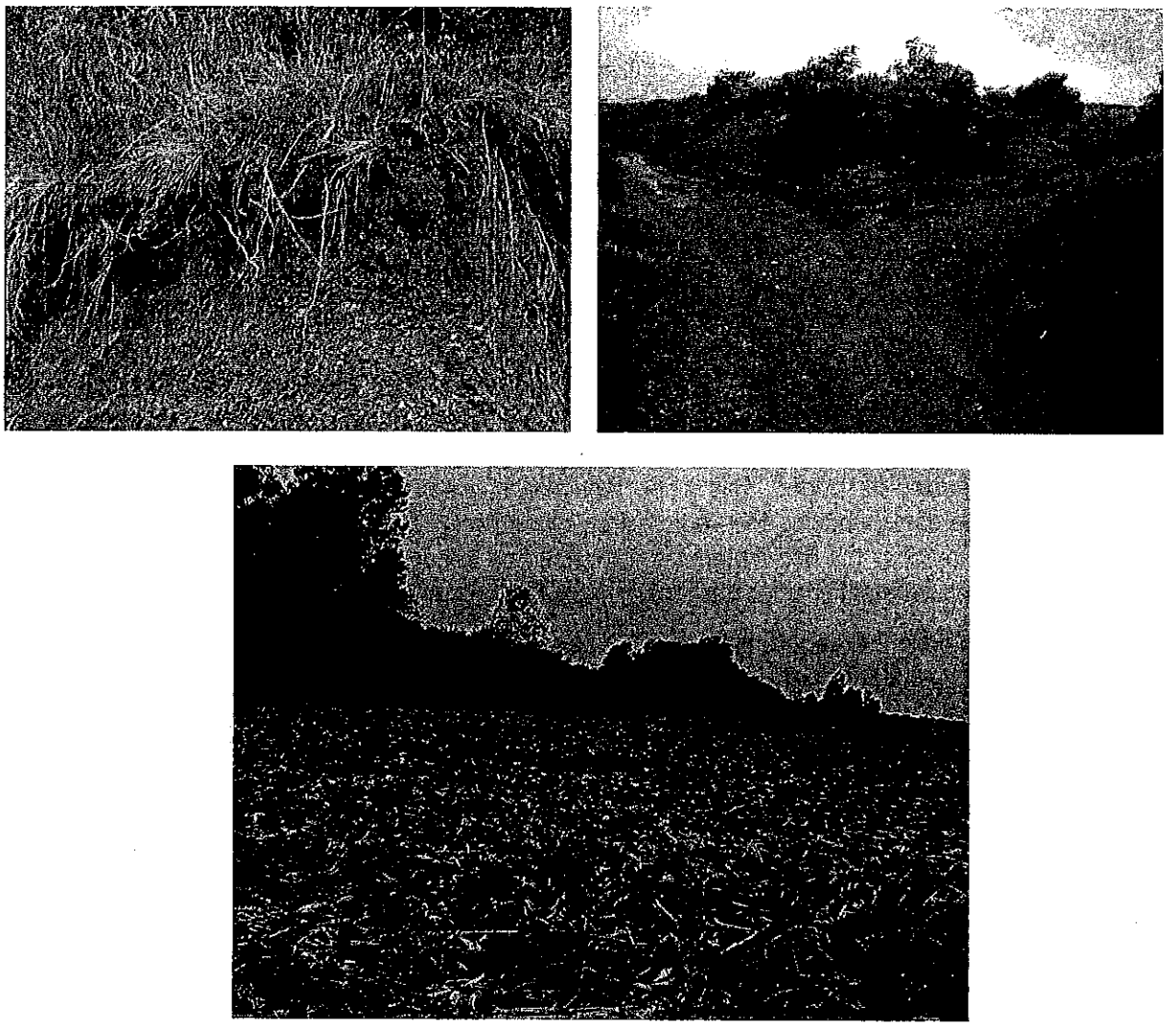


Figure 5.1 Sources of Sediment

6. EROSION POTENTIAL BELOW DAM

Analysis of the potential impacts of the Lake Ralph Hall project must include the rate of scour downstream of the dam. Using Lane's concept of balance of physical processes in a river environment can be expressed as:

$$Q \times S \sim Q_s D_{50}$$

Where Q, S = Discharge and energy slope, respectively; and Q_s, D_{50} = sediment transport and mean sediment size, respectively.

Lane's relationship states that the product of slope and discharge (stream power) is balanced by the rate of sediment transport and sediment size. According to this relationship, for a given discharge when clear water is released downstream from a reservoir (sediment transport, Q_s, reduced), the river would try to balance itself by reducing its slope. This slope reduction can either be achieved by scouring the bed downstream from the dam (reducing the vertical drop along river) or by lengthening the channel through meandering. In this process the bed material is coarsened by through armoring (removal of finer material leaving behind erosion resistant coarser fractions).

The channel profiles along the North Sulphur River indicate that at the proposed dam location the river has been eroding its bed by 0.25ft per year for the past 40 years (Figure 6.1). Several miles upstream from the proposed dam, at the SH 34 bridge location, the channel bed was scoured by 11 ft. Similarly, 8 miles downstream from the proposed dam at the FM 38 bridge location the measured scour is around 8 ft.

The site visit to the North Sulphur River downstream from the proposed dam showed that the erosion process taking place since 1920's have exposed the shale bedrock (Figure 6.1). The channel bed at this site, when exposed to air, is susceptible to breaking apart into easily transportable chunks (Figure F.6). The thickness of the erodible layer was measured to be in the order of 3 to 4 inches (0.25-0.30ft). It appears that the tendency to erode this bed may slowly continue through the years to come if release flows from the dam are of sufficient magnitude.

Using this downstream location as a control, a reduction in slope from the current 0.0010 to the historical 0.0006 would potentially cause an additional 10 to 15 ft scour downstream from the dam. The channel bed downstream from the proposed dam site was also found to be susceptible to crumbling when exposed to air. With the construction of a dam, depending on the magnitude of releases from the dam, the bed is expected to erode towards the equilibrium slope.

The magnitude of the downstream channel slope is a function of the reservoir releases. If the reservoir releases are reduced significantly (Q is reduced), the existing channel can no longer pass the historic sediment loads. Since channel dimensions, slope, and sediment size are controlled by dominant discharge, reducing Q causes the river to adjust its channel by adopting a smaller width. In the literature, $Q \cdot S^{1/4}$ ratio is shown to dictate the plan-form of an alluvial river. For a given discharge, by increasing $Q \cdot S^{1/4}$ the river plan form goes from meandering to transition to braided (multiple channels relatively straight). The present conditions at the SH 34 bridge site show that the width-to-depth ratios are around 25 (near braided conditions). Reducing discharge would reduce the $QS^{1/4}$ ratio and cause the river to meander. Using the USGS Quad maps, the historic meander belt widths were determined to be between 700 and 800 ft. The current deeply incised channel would not allow such meander belt widths; as a result

the downstream channel would try to widen its meander loops by attacking the channel banks similar to what is currently being observed at several locations along North Sulphur River. The formation of a meandering channel process is a slow process and considering the current channel configuration, may take decades. The existing plan form was created by severe erosion followed by successive bank failures; series of new adjustments is expected along the existing channel following the construction of a dam. The severity of these adjustments is dependent upon many factors including the release of sediment from the dam if sediment flushing operations are followed.

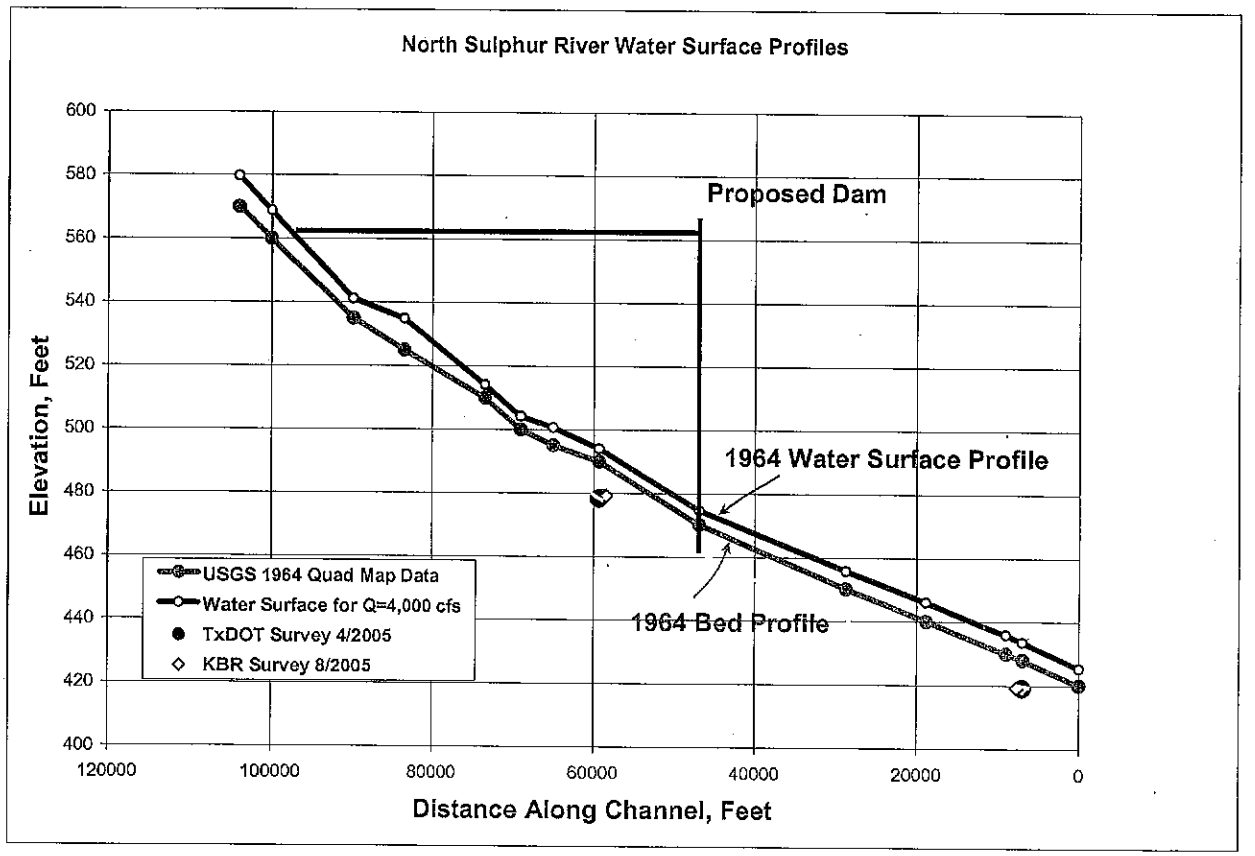


Figure 6.1 Channel profiles along the North Sulphur River in the vicinity of LHR dam.

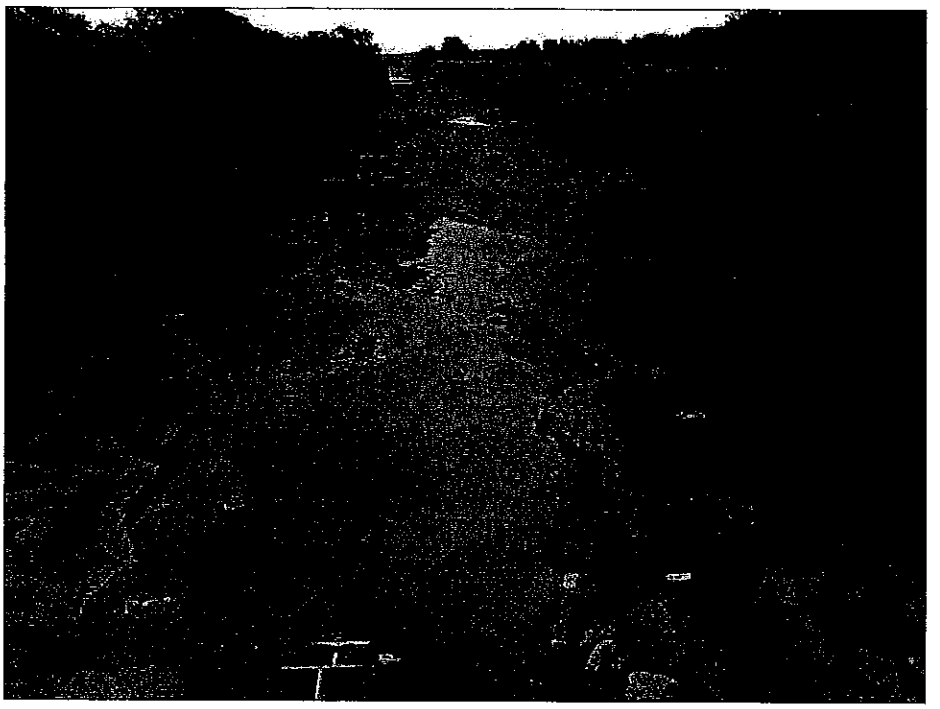


Figure 6.2 Exposed bedrock downstream of FM 38 Bridge.

7. SUMMARY AND CONCLUSIONS

This study is a primarily geomorphologic assessment and qualitative analysis of the basin characteristics of the upper North Sulphur River watershed and sedimentation potential of Lake Ralph Hall. This primarily qualitative geomorphologic assessment addresses sediment transport, channel hydraulics and stability, and basin issues. A site visit was made to observe the basin characteristics and collect data. Other data comes from previous reports, interviews with residents, and gauges on the North Sulphur River. Data is classified into four categories: geometric, hydrologic, watershed soils, and channel sediments.

Geometric data collection shows the following:

5. The channel has widened 30-50' in the last 40 years.
6. The channel has eroded vertically 7-11' in the last 40 years, and even more in the last 70 years since it was artificially straightened.
7. The channel profile is steeper than the original channel profile.

Hydrologic data collection shows the following:

1. According to TxDOT regional regression equations, the channel forming discharge, the 1.5-year event, is approximately 4,000 cfs.
2. The same equations conclude that the 50-year and 100-year flows are 42,350 and 55,010 cfs respectively. The flow velocity at these events is 12-13 feet per second.
3. The basin experiences long periods of little or no flow followed by large events.

Watershed Soils data shows the following:

4. The Tinn Clay and Heiden-Ferris complexes are dominant in the upper reaches of the North Sulphur River.
5. Both of these complexes have a severe hazard of water erosion according to the NRCS soils report.
6. There is ample sediment storage in the river system to cause reservoir sedimentation.

Channel Sediment data shows the following:

1. Sixty to seventy percent of the channel sediments are silts and clays.
2. The remaining thirty to forty percent of sediments are sands and gravels.
3. The mean diameter of coarse sediments is 1 mm.
4. The exposed shale bedrock is susceptible to wetting and drying cycles that make it highly erodible.

Using this data, the channel morphology, hydraulics and hydrology, sediment transport capacity, and erosion potential below the dam are analyzed. The conclusions from this analysis are summarized below.

7.1. CHANNEL MORPHOLOGY

1. Historic channel characteristics: A meandering channel with a small width depth ratio (at the channel forming discharge) and a gentle slope. The channel is not incised; during floods flow spills onto a wide floodplain. Velocities at high flows are low and main channel does not scour due to a wide flood channel. Sediment carried by the stream is deposited on the floodplain. The meander belts (distance between parallel plan form channel bounds) are 700 to 800 feet wide.

2. Straightened channel characteristics: A straight channel with a width depth ratio of 10 (at the channel forming discharge) and steeper bottom slope. The channel is incised; during floods flow does not spill onto the floodplain and are channelized in a straight alignment. Due to channelization, velocities are high during high flows and main channel scours. Sediment is carried by the stream and is transported through the reach due to increased transport capacity. There is little or no floodplain.
3. After straightening in the 1920's and 1930's, flows were channelized and gully erosion began, followed by widening of the channel. It then transitioned to a braided channel in some reaches.
4. The channel has reached a semi-equilibrium state in some reaches and will stop downcutting and widening and will transition from braided to meandering in an attempt to minimize stream power.
5. The tributaries to the upper reaches of the North Sulphur River are unstable and have headcutting, gully erosion, and widening that will continue for decades unless stabilized.
6. The tributaries could be stabilized by constructing grade control structures. These structures would be less effective on the main channel because the slope is closer to equilibrium and plan-form modifications will initiate to stabilize the channel geometry; grade control structures do not address this problem.

7.2. HYDRAULICS

1. The channel forming discharge corresponds to the 1-2 year storm. According to the TxDOT regional regression equations, this is approximately 4,000 cfs on the North Sulphur River.
2. Preliminary hydraulic computations are done using BRI-STARS. The unit stream power (product of velocity and slope) is calculated and shows that the upstream reach is still in the process of minimizing stream power while the lower reaches are closer to equilibrium.
3. Because the channel experiences long periods of little or no discharge followed by large events, the reservoir operation of the system will require rapid drawdowns which may cause additional bank instabilities upstream of the dam.

7.3. SEDIMENT TRANSPORT CAPACITY

1. All dominant sediment sizes in the North Sulphur River channel are transported during the channel forming discharge event.
2. Sands and gravels are transported as bed-load and the silts and clays are suspended load.
3. The North Sulphur River is currently supply limited because of high transport capacities. However, there is ample sediment supply in the river system to cause river sedimentation even as the transport capacity decreases.
4. Reservoir backwater effects will not extend far enough upstream to diminish the sediment supply from tributaries and other sources in the watershed.
5. A quantitative model of both channel forming events and flood events is needed to accurately predict the reservoir lifespan.

7.4. EROSION BELOW THE DAM

Due to construction of the dam, clear (sediment free) water will be released from the reservoir. This change in the sediment loading will destabilize the reach downstream of the dam and cause adjustments to the river slope or plan-form. The severity of these adjustments is dependent upon many factors including the release of sediment from the dam if sediment flushing operations are followed.

1. The wetting and drying cycle that erodes the shale bedrock will continue downstream of the dam.

2. Lane's concept of balance of physical processes in a river environment shows that the river will try to balance itself by reducing its slope.
3. Depending on reservoir releases, slope reduction will either occur by vertical scouring or meandering.
4. To reach historic stable slopes, the channel would erode 10-15 feet downstream of the dam.
5. The historic meander belt widths are larger than the existing incised channel. To meander, the river would attack existing banks.

Conclusions from this analysis are primarily qualitative; they are derived from field observations, data collection, engineering experience, and from limited cross section data derived from aerial photographs and USGS topographic data. Quantitative portions of this analysis are for use in order-of-magnitude estimates and should be considered a foundation for more detailed modeling and calculations. Results of this study should be used to decide the nature and source of potential problems so that plans for future analysis are more precise.

This analysis concludes that the sediment supply and transport capacity is such that the reservoir life will be reduced. A detailed model is needed to predict sediment transport rates and project reservoir life. A numerical river basin sedimentation and hydrology study is the next step in this process. This report also concludes that the tributaries feeding sediment to the proposed lake could be stabilized by constructing grade control structures. This study includes no analysis of the number, location, or effectiveness of such structures on the North Sulphur River tributaries. However, these structures would lengthen the reservoir life by reducing sediment loading. The extended life span would be dependent on the number of tributaries stabilized, the timing of that stabilization, and the resulting effectiveness of those structural measures. However, these structures will not eliminate all sediment transport to the reservoir; it will continue to fill in with sediment and the reach downstream of the dam will continue to erode.

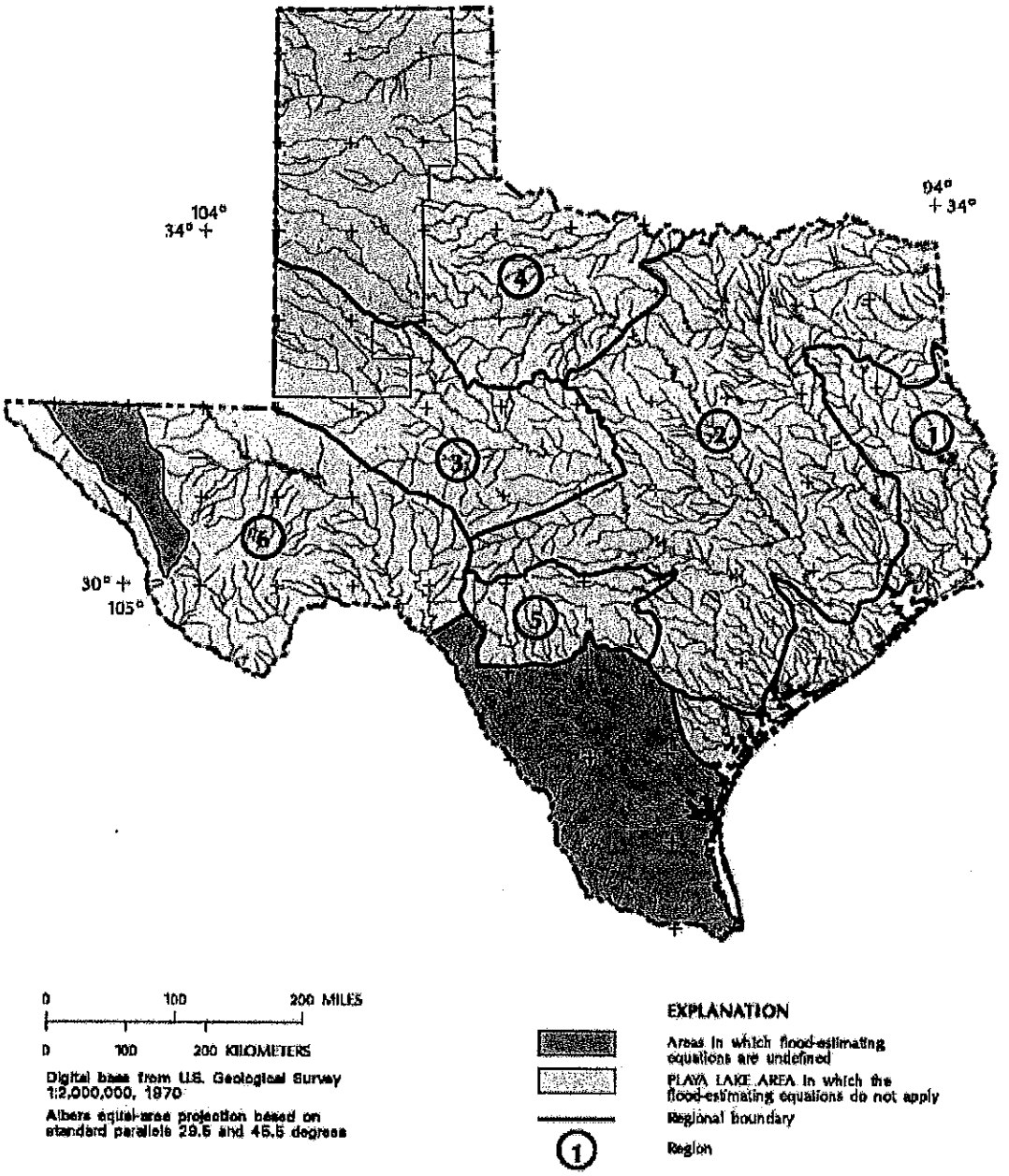


Figure A.1 Hydrologic Zones of Texas.

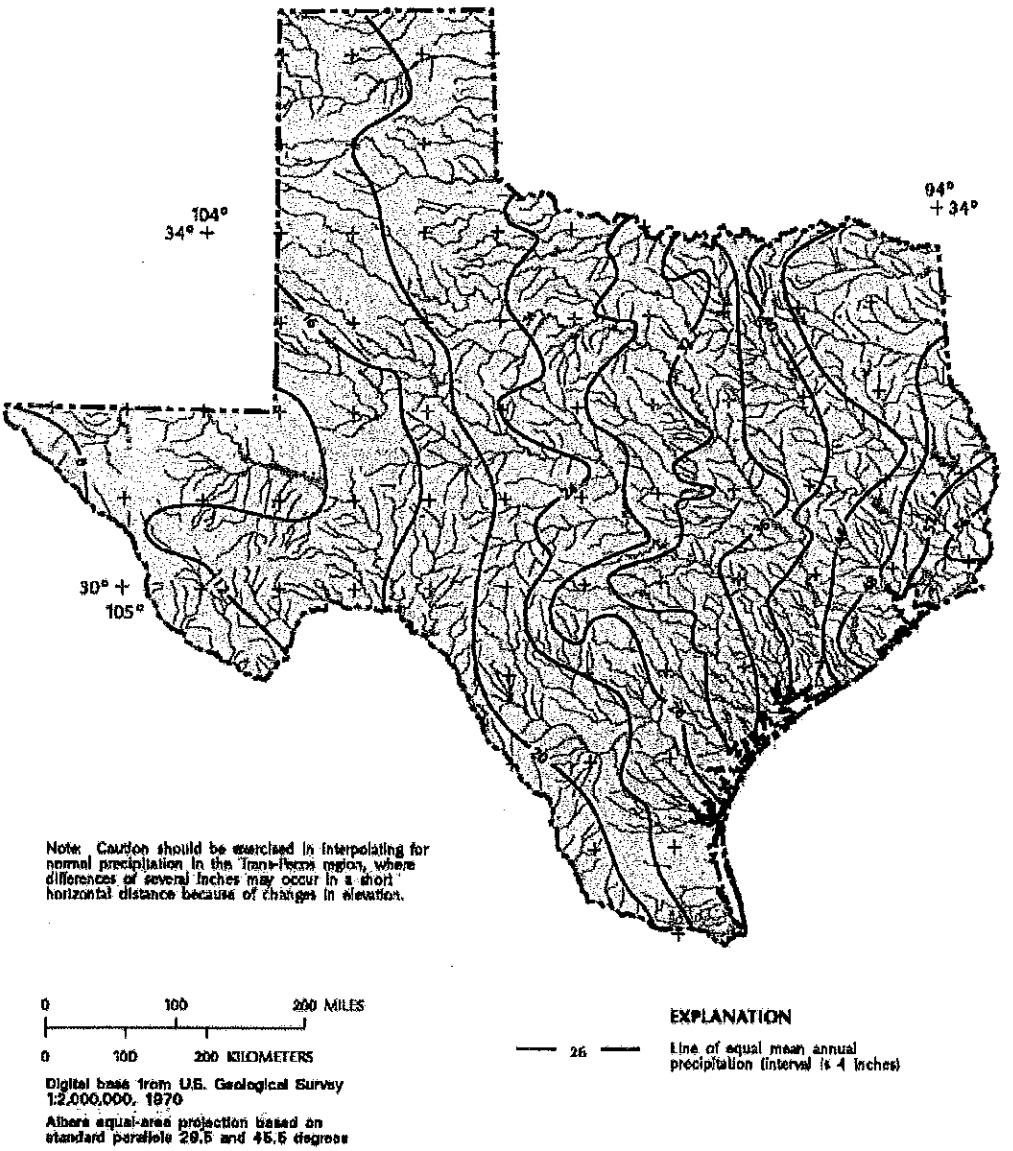


Figure A.2 Equal mean annual precipitation lines of Texas.

Table A.1 Regression equations for Texas for 2-, 5-, 10-, 25-, 50- , and 100-year peak discharges for drainage areas smaller and larger than 32 square miles (US Geological Survey).

[Q_T, peak discharge, in cubic feet per second for recurrence interval, T, in years; A, contributing drainage area, in square miles; SH, basin shape factor, dimensionless; and SL, stream slope, in feet per mile]

Regression equation	Weighted standard error of estimate, in percent
Region 1	
$Q_2 = 16.1\ A^{1.04}\ SH^{-0.537}$	160
$Q_5 = 53.2\ A^{0.958}\ SH^{-0.444}$	111
$Q_{10} = 96.0\ A^{0.921}\ SH^{-0.400}$	103
$Q_{25} = 178\ A^{0.885}\ SH^{-0.356}$	103
$Q_{50} = 263\ A^{0.864}\ SH^{-0.330}$	111
$Q_{100} = 371\ A^{0.847}\ SH^{-0.307}$	120
Region 2	
$Q_2 = 826 A^{0.376} SL^{-0.689} SH^{0.869}$	120
$Q_5 = 6{,}500 A^{0.372} SL^{-0.933} SH^{0.738}$	92
$Q_{10} = 18{,}100 A^{0.369} SL^{-1.05} SH^{0.673}$	88
$Q_{25} = 55{,}300 A^{0.366} SL^{-1.19} SH^{0.604}$	92
$Q_{50} = 108{,}000 A^{0.363} SL^{-1.27} SH^{0.566}$	99
$Q_{100} = 199{,}000 A^{0.361} SL^{-.134} SH^{0.531}$	107
Region 3	
(Sites with contributing drainage areas less than 32 square miles)	
$Q_2 = 119 A^{0.592}$	75
$Q_5 = 252 A^{0.629}$	78
$Q_{10} = 373 A^{0.652}$	88
$Q_{25} = 566 A^{0.679}$	103
$Q_{50} = 743 A^{0.698}$	120
$Q_{100} = 948 A^{0.715}$	134
Region 3	
(Sites with contributing drainage areas greater than 32 square miles)	
$Q_2 = 8.05 A^{0.668}\ SL^{0.659}\ SH^{0.189}$	60
$Q_5 = 42.0\ A^{0.626}\ SL^{0.574}$	57
$Q_{10} = 91.9\ A^{0.579}\ SL^{0.537}$	60
$Q_{25} = 233\ A^{0.523}\ SL^{0.476}$	66
$Q_{50} = 448\ A^{0.484}\ SL^{0.425}$	72
$Q_{100} = 835\ A^{0.447}\ SL^{0.372}$	92
Region 4	
(Sites with contributing drainage areas less than 32 square miles)	
$Q_2 = 97.1 A^{0.626}$	134
$Q_5 = 196\ A^{0.650}\ SH^{0.257}$	96
$Q_{10} = 293\ A^{0.697}\ SH^{0.281}$	92
$Q_{25} = 455\ A^{0.741}\ SH^{0.311}$	99
$Q_{50} = 53\ A^{0.927}\ SL^{0.558}\ SH^{0.333}$	107
$Q_{100} = 51\ A^{0.968}\ SL^{0.627}\ SH^{0.353}$	120
Region 4	
(Sites with contributing drainage areas greater than 32 square miles)	
$Q_2 = 0.0066 A^{1.29} SL^{2.09}$	72
$Q_5 = 0.0212 A^{1.24} SL^{2.18}$	51
$Q_{10} = 0.0467 A^{1.20} SL^{2.18}$	49
$Q_{25} = 0.102\ A^{1.16} SL^{2.18}$	54
$Q_{50} = 0.166\ A^{1.13} SL^{2.19}$	60
$Q_{100} = 0.252\ A^{1.11} SL^{2.19}$	69
Region 5	
(Sites with contributing drainage areas less than 32 square miles)	
$Q_2 = 159 A^{0.680}$	75
$Q_5 = 396 A^{0.773}$	63
$Q_{10} = 624 A^{0.820}$	66
$Q_{25} = 997 A^{0.866}$	69
$Q_{50} = 278 A^{0.973} SL^{0.360}$	72
$Q_{100} = 295 A^{1.01} SL^{0.405}$	78
Region 5	
(Sites with contributing drainage areas greater than 32 square miles)	
$Q_2 = 377 A^{0.498}$	43
$Q_5 = 1{,}270 A^{0.534} SH^{-0.145}$	28
$Q_{10} = 2{,}310 A^{0.552} SH^{-0.221}$	28
$Q_{25} = 4{,}330 A^{0.571} SH^{-0.307}$	31
$Q_{50} = 6{,}450 A^{0.583} SH^{-0.366}$	36
$Q_{100} = 9{,}180 A^{0.594} SH^{-0.420}$	41
Region 6	
$Q_2 = 66.2 A^{0.630} SH^{-0.423}$	96
$Q_5 = 931 A^{0.424} SL^{-0.410}$	60
$Q_{10} = 1{,}720 A^{0.410} SL^{-0.419}$	49
$Q_{25} = 3{,}290 A^{0.398} SL^{-0.428}$	51
$Q_{50} = 4{,}970 A^{0.391} SL^{-0.434}$	63
$Q_{100} = 1{,}780 A^{0.440}$	75
Region 7	
(Sites with contributing drainage areas less than 32 square miles)	
$Q_2 = 832 A^{0.568} SL^{-0.285}$	57
$Q_5 = 584 A^{0.610}$	46
$Q_{10} = 831 A^{0.592}$	43
$Q_{25} = 1{,}196 A^{0.576}$	46
$Q_{50} = 1{,}505 A^{0.566}$	51
$Q_{100} = 1{,}842 A^{0.558}$	57

KBR and Hydrau-Tech, Inc. collected sediment samples along the Sulphur River and along some of its tributaries during the field visit on August 14-16, 2005. These samples were taken from the channel bed and banks and were analyzed at the Colorado State University Soils Testing Laboratory. This Appendix presents the results of the sediment sampling analysis and provides gradation curves for the distribution of different sediment size fractions at different locations along the stream.

Table B.1 Definition of Sediment Samples.

Lab ID	Sample ID #	Description of Sample Locations.
R1477	1	U/S side of FM 38 Bridge. Downstream of proposed dam. Gravel bar soil from middle of channel.
R1478	2	Bridge 590 site at U/S end of North Sulphur River. Bottom of channel.
R1479	3	North Sulphur River near confluence with Pickle Creek. Bed material in middle of channel.
R1480	4	Sample at U/S end of North Sulphur River from channel bank.
R1481	5	Allen Creek near Grober Cemetary. Bank soils on top of a shale layer.
R1482	6	Sample from headwaters of Allen Creek from farm land adjacent to creek.
R1483	7	North Sulphur River just U/S of FM 38 Bridge. D/S of proposed dam at North side of channel bottom; surface sediment.
R1484	8	Brushy Creek near confluence with North Sulphur. Channel bed sediment.
R1485	9	North Sulphur River at SH 34 Bridge. Bank material U/S of bridge.
R1486	10	Allen Creek near Grober cemetary. Graded material on channel bed near bridge.

Table B.2 Sediment size fractions and percentages of material falling within each size group along the North Sulphur River and tributaries.

RESEARCH SOIL ANALYSIS

LABORATORY DATA

Lab #	Sample* ID #	% Sand	% Silt	% Clay	Texture	0.0625	0.25	0.50	0.60	0.71	1.00	1.18	1.70	2.00	4.00	8.00	16.00	19.00	25.00	31.50	50.00	63.50	75.00
							% retained at following sieve sizes (mm)																
R1477	1	100	0	0	Sand and Gravel	10.9	2.68	1.41	1.19	4.28	2.51	11.91	7.46	36.01	19.79	1.87	0	0	0	0	0	0	0
R1478	2	40	28	32	Clay Loam	23.6	3.10	3.16	3.61	10.56	2.59	8.33	4.63	12.0	10.25	3.29	0.64	2.53	0	11.66	0	0	0
R1479	3	30	21	49	Clay	98.9	0.27	0.13	0.18	0.09	0.05	0.15	0.06	0.16	0.05	0	0	0	0	0	0	0	0
R1480	4	30	28	42	Clay																		
R1481	5	42	28	30	Clay Loam																		
R1482	6	32	42	26	Loam																		
R1483	7					19.0	6.68	2.92	1.88	5.29	1.75	6.93	3.60	21.21	26.93	3.86	0	0	0	0	0	0	0
R1484	8	33	25	42	Clay Loam																		
R1485	9	34	29	37	Clay Loam	22.3	9.48	4.92	3.5	10.59	4.32	11.99	12.13	9.23	0.60	0	0	0	10.97	0	0	0	0
R1486	10	51	21	28	Sandy Clay Loam	24.2	8.13	3.51	2.52	7.08	2.95	9.99	5.00	25.29	11.36	0	0	0	0	0	0	0	0

SAND PART COMPOSITION

Lab #	Sample* ID #	% Sand	% Silt	% Clay	Texture	0.0625	0.25	0.50	0.60	0.71	1.00	1.18	1.70	2.00	4.00	8.00	16.00	19.00	25.00	31.50	50.00	63.50	75.00
							% finer than the following sieve sizes (mm)																
R1477	1	100	0	0	Sand and Gravel	0.0	10.9	13.6	15.0	16.2	20.5	23.0	34.9	42.3	78.3	98.1	100.0	100.0	100.0	100.0	100.0	100.0	100.0
R1478	2	40	28	32	Clay Loam	0.0	23.6	26.7	29.9	33.5	44.1	46.7	55.0	59.6	71.6	81.9	85.2	85.8	88.3	88.3	100.0	100.0	100.0
R1479	3	30	21	49	Clay	0.0	98.9	99.1	99.3	99.4	99.5	99.6	99.7	99.8	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
R1480	4	30	28	42	Clay																		
R1481	5	42	28	30	Clay Loam																		
R1482	6	32	42	26	Loam																		
R1483	7	100				0.0	19.0	25.6	28.6	30.4	35.7	37.5	44.4	48.0	69.2	96.1	100.0	100.0	100.0	100.0	100.0	100.0	100.0
R1484	8	33	25	42	Clay Loam																		
R1485	9	34	29	37	Clay Loam	0.0	22.3	31.8	36.7	40.2	50.8	55.1	67.1	79.2	88.4	89.0	89.0	89.0	89.0	100.0	100.0	100.0	100.0
R1486	10	51	21	28	Sandy Clay Loam	0.0	24.2	32.3	35.8	38.3	45.4	48.4	58.4	63.4	88.6	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

OVERALL MIXTURE COMPOSITION

Lab #	Sample* ID #	% Sand	% Silt	% Clay	Texture	0.0625	0.25	0.50	0.60	0.71	1.00	1.18	1.70	2.00	4.00	8.00	16.00	19.00	25.00	31.50	50.00	63.50	75.00
							% finer than the following sieve sizes (mm)																
R1477	1	100	0	0	Sand and Gravel	0.0	10.9	13.6	15.0	16.2	20.5	23.0	34.9	42.3	78.3	98.1	100.0	100.0	100.0	100.0	100.0	100.0	100.0
R1478	2	40	28	32	Clay Loam	60.0	69.5	70.7	72.0	73.4	77.6	78.7	82.0	83.8	88.6	92.8	94.1	94.3	95.3	95.3	100.0	100.0	100.0
R1479	3	30	21	49	Clay	70.0	99.7	99.7	99.8	99.8	99.9	99.9	99.9	99.9	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
R1480	4	30	28	42	Clay	70.0																	
R1481	5	42	28	30	Clay Loam	58.0																	
R1482	6	32	42	26	Loam	68.0																	
R1483	7	100	0	0		0.0	19.0	25.6	28.6	30.4	35.7	37.5	44.4	48.0	69.2	96.1	100.0	100.0	100.0	100.0	100.0	100.0	100.0
R1484	8	33	25	42	Clay Loam	67.0																	
R1485	9	34	29	37	Clay Loam	66.0	73.6	76.8	78.5	79.7	83.3	84.7	88.8	92.9	96.1	96.3	96.3	96.3	96.3	100.0	100.0	100.0	100.0
R1486	10	51	21	28	Sandy Clay Loam	49.0	61.3	65.5	67.3	68.5	72.2	73.7	78.8	81.3	94.2	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

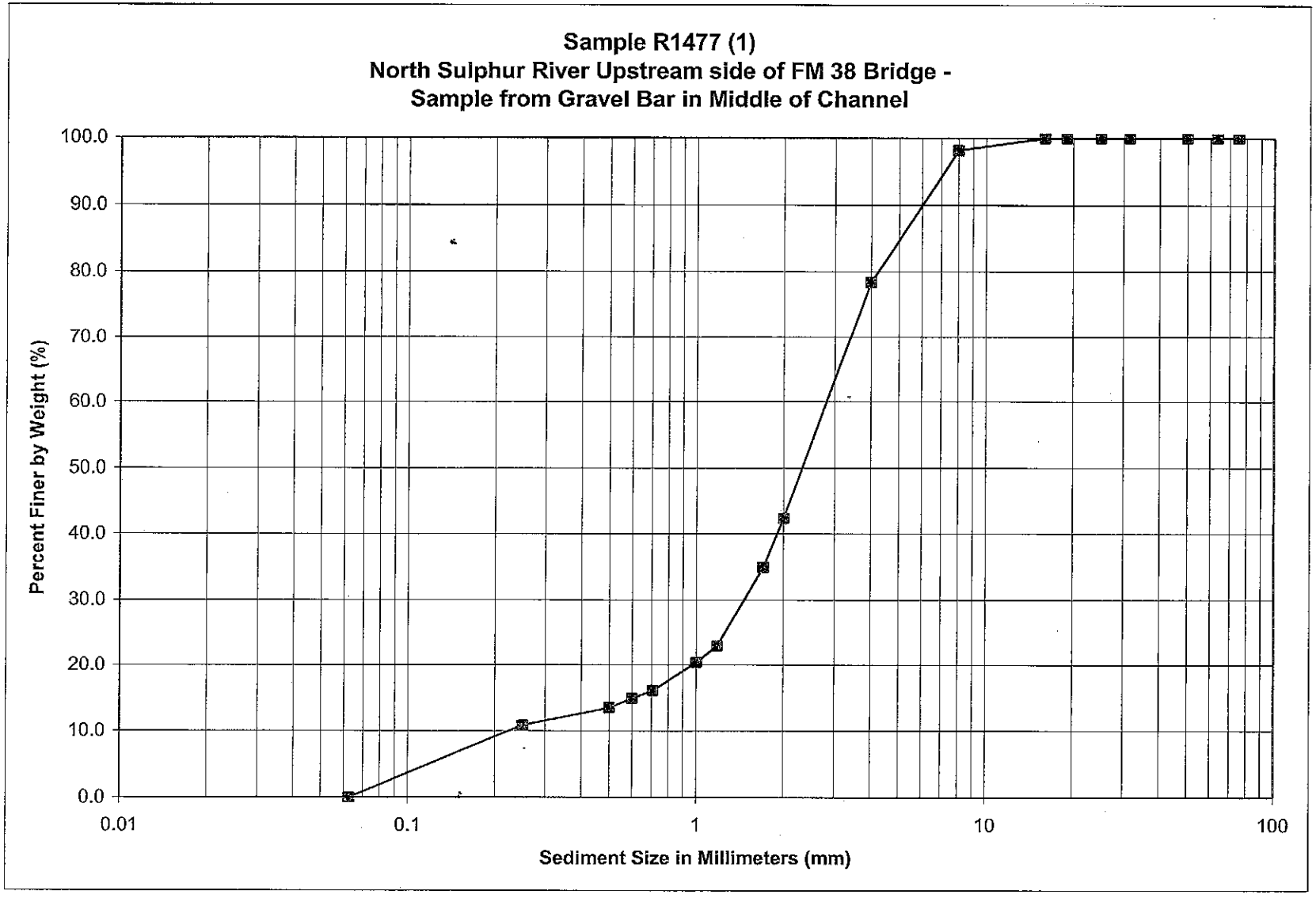


Figure B.1 Sediment size gradation curve for Sample R1477

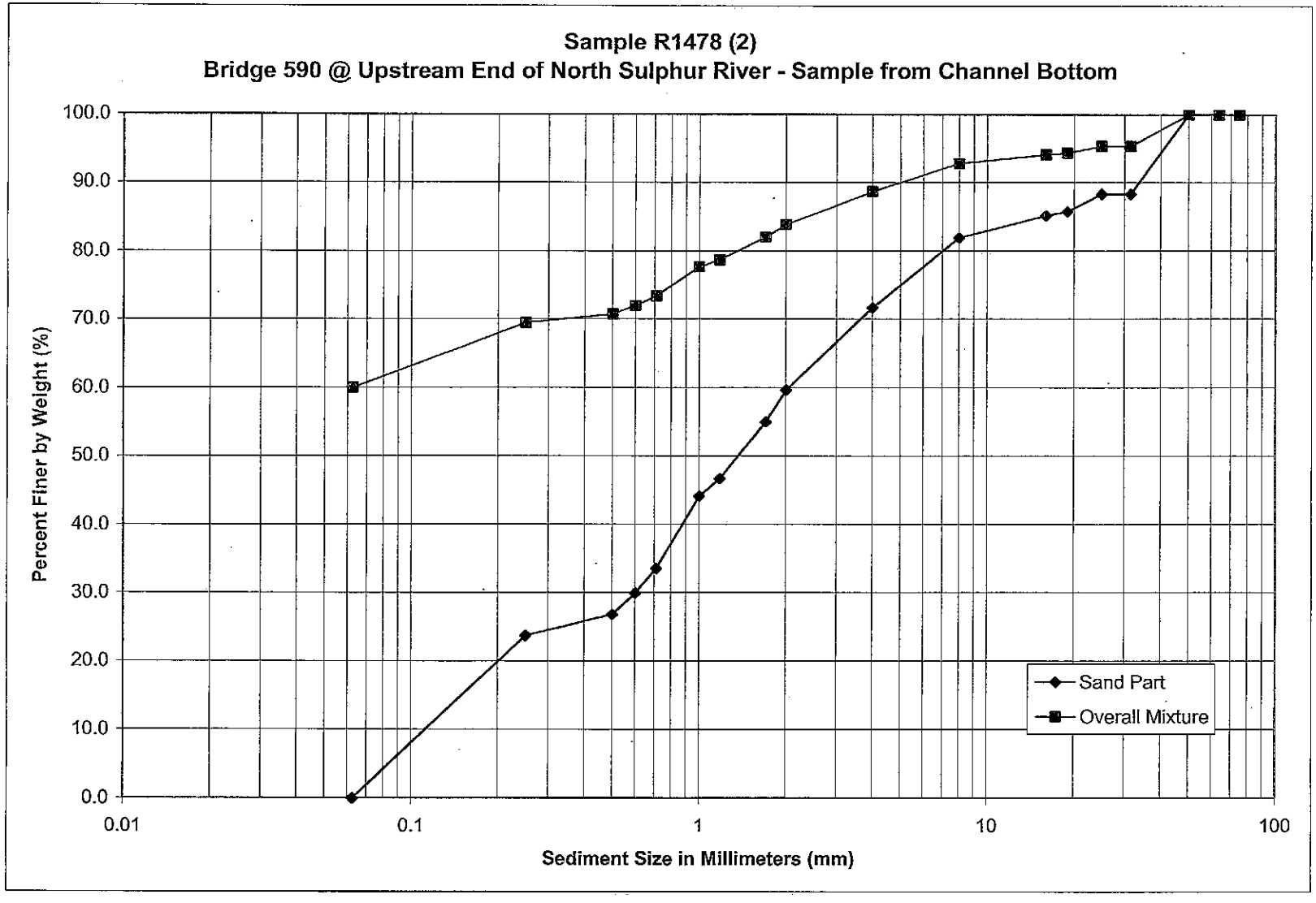


Figure B.2 Sediment size gradation curve for Sample R1478.

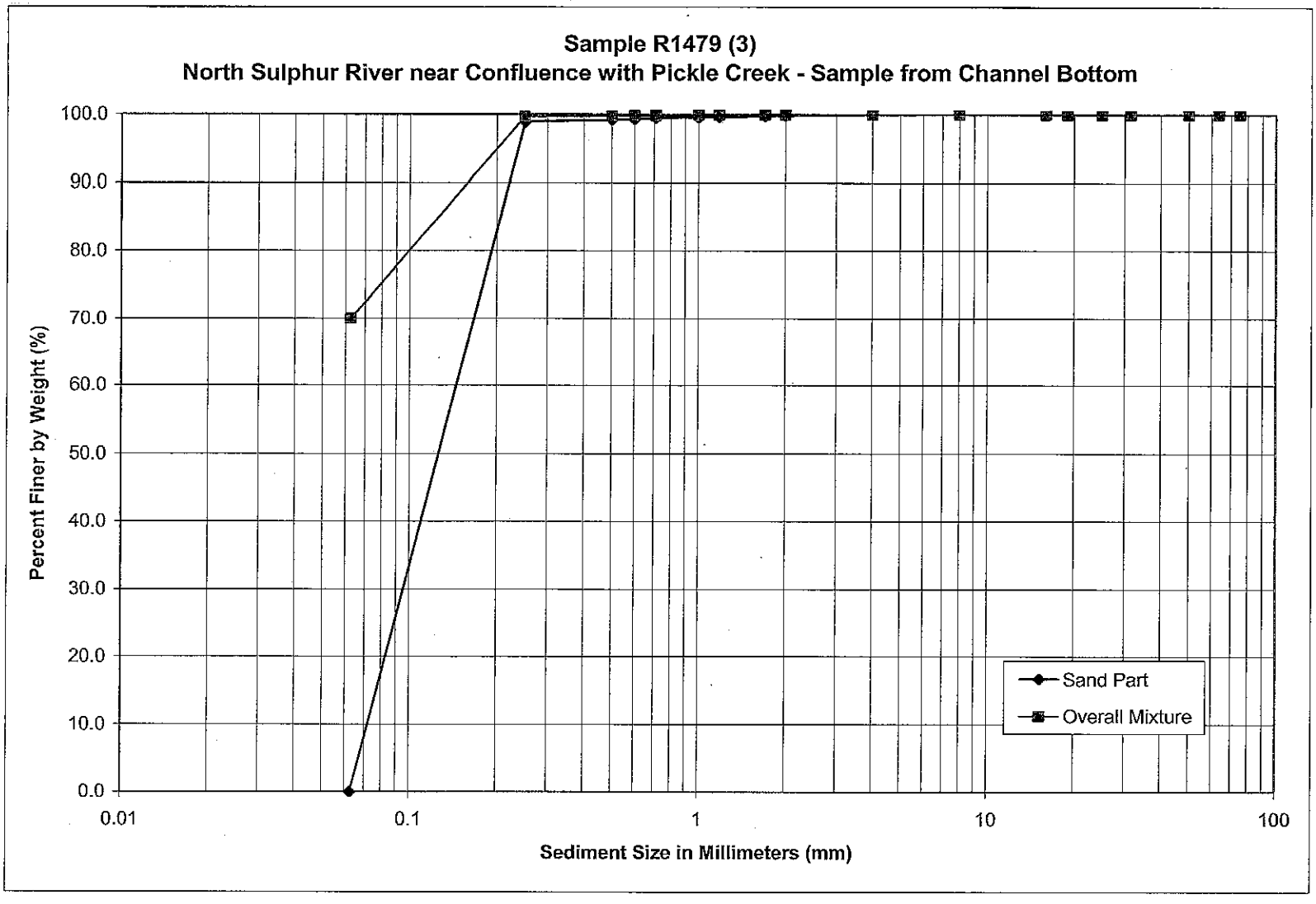


Figure B.3 Sediment size gradation curve for Sample R1479.

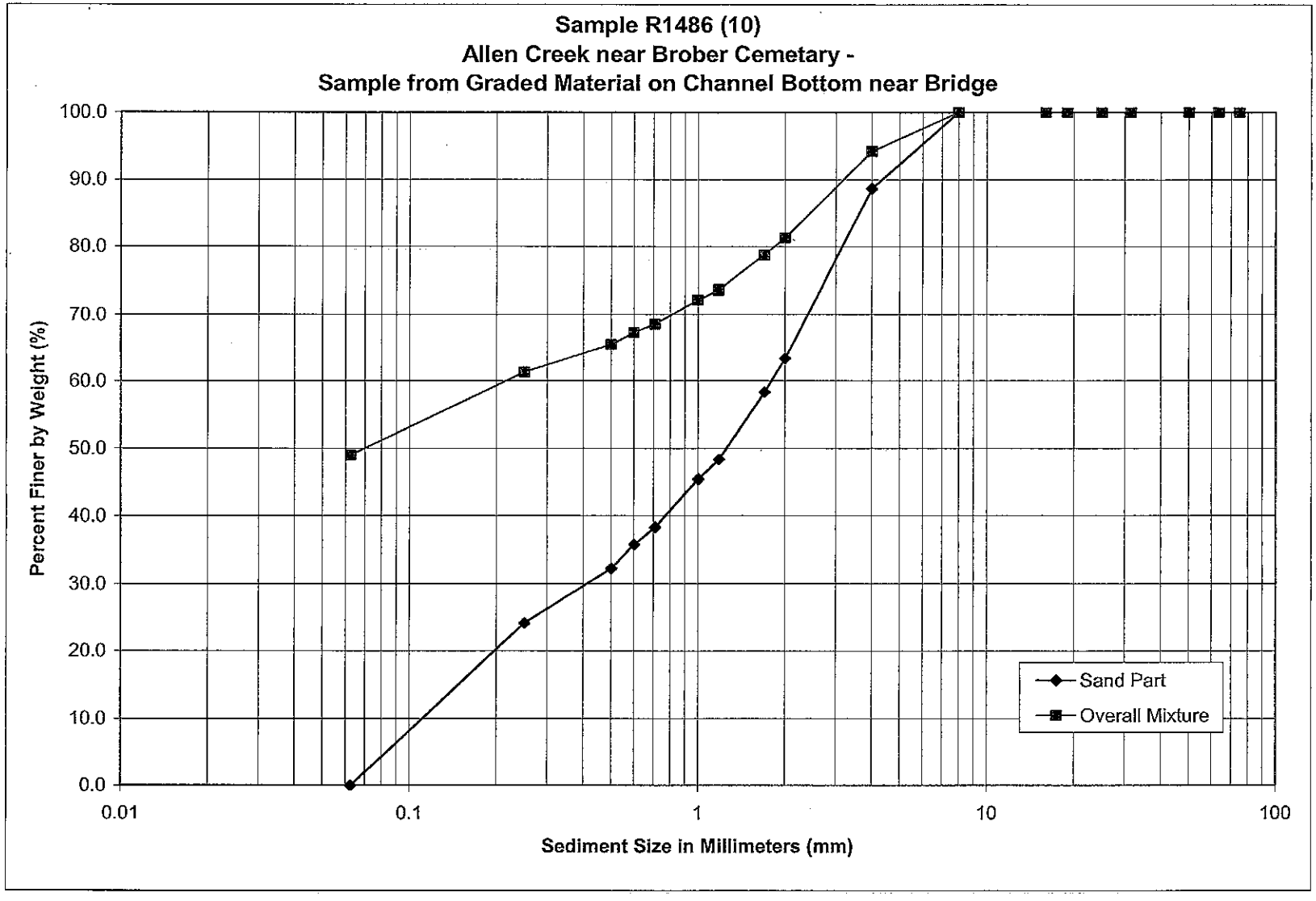


Figure B.4 Sediment size gradation curve for Sample R1486.

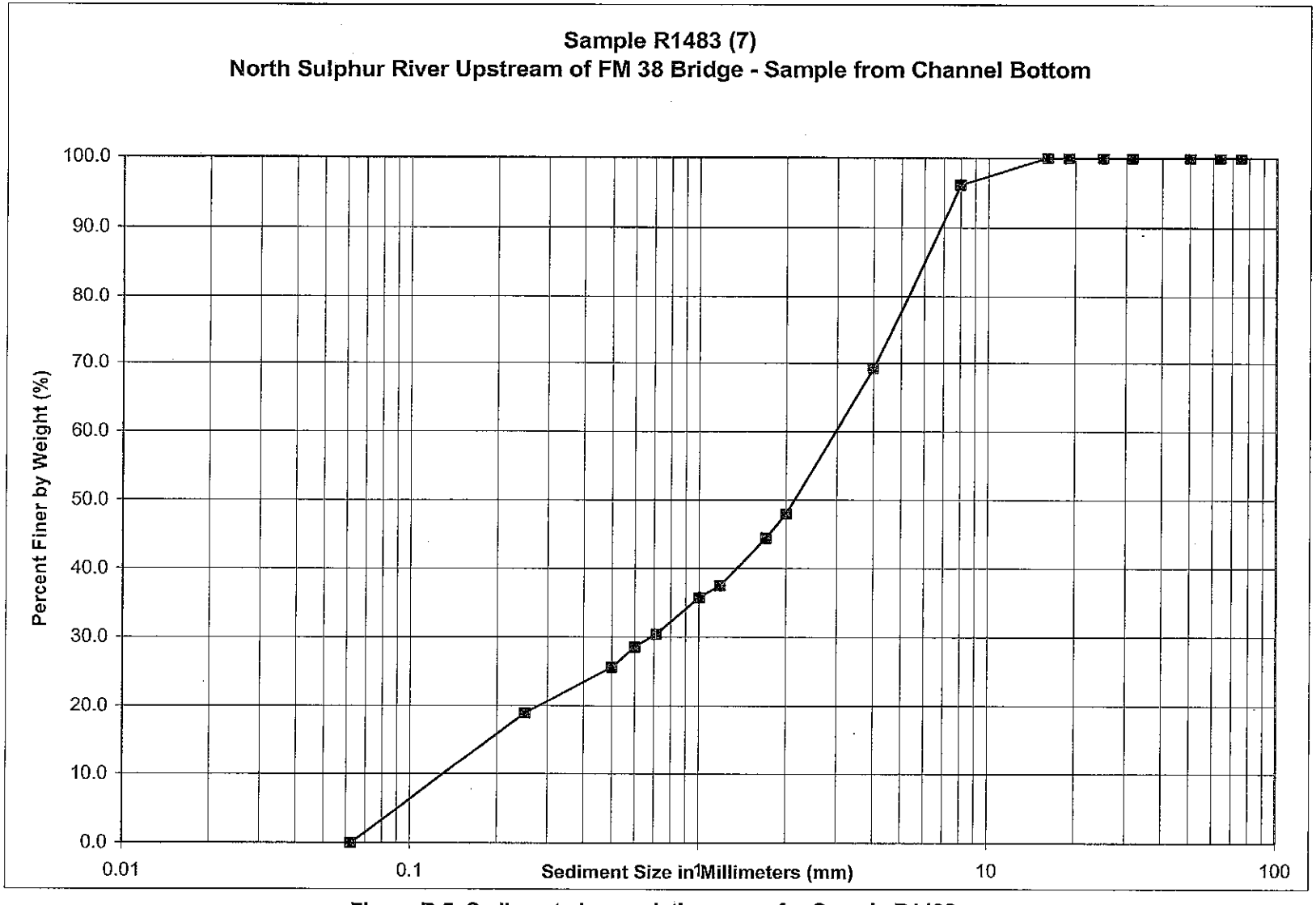


Figure B.5 Sediment size gradation curve for Sample R1483.

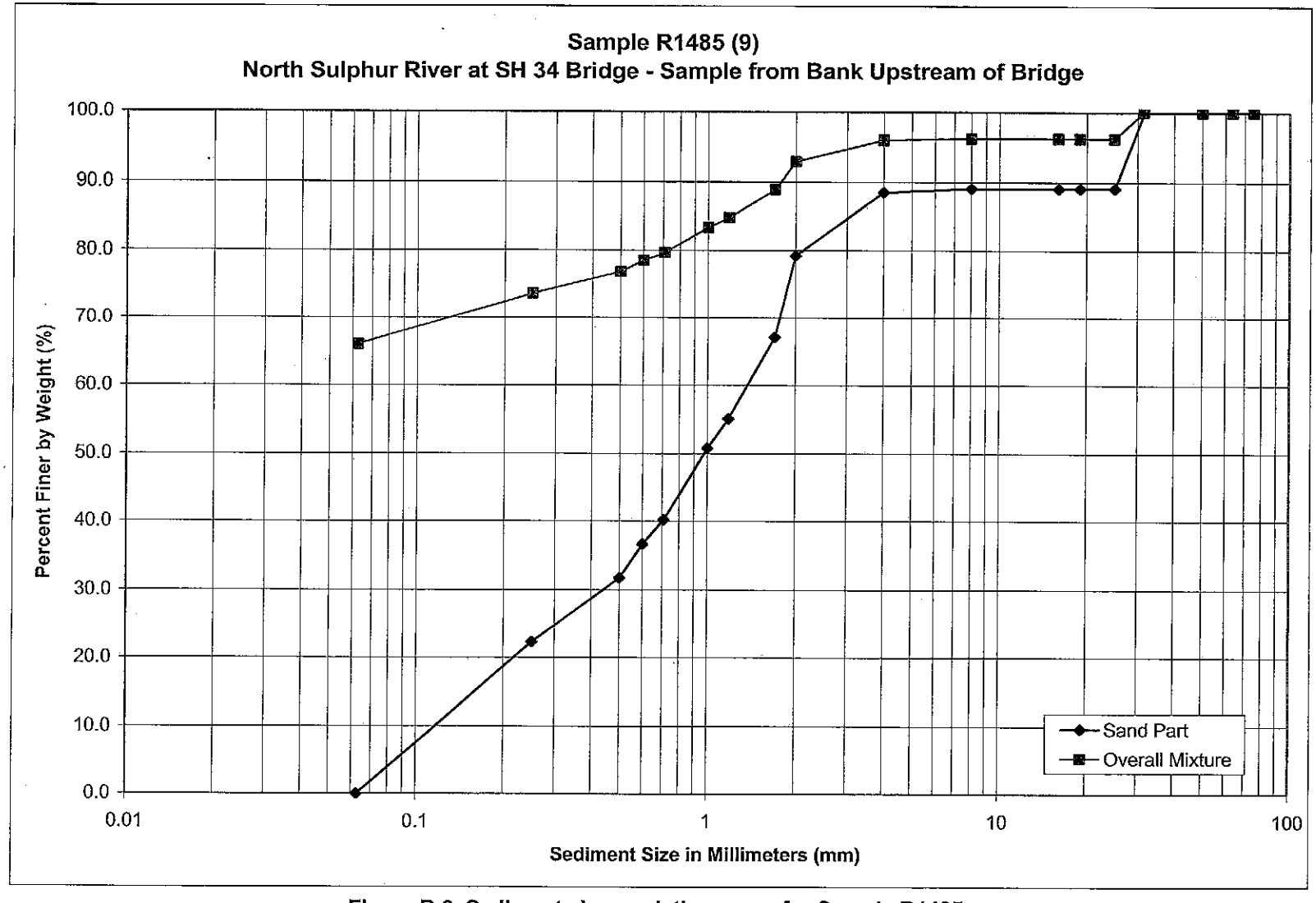


Figure B.6 Sediment size gradation curve for Sample R1485.

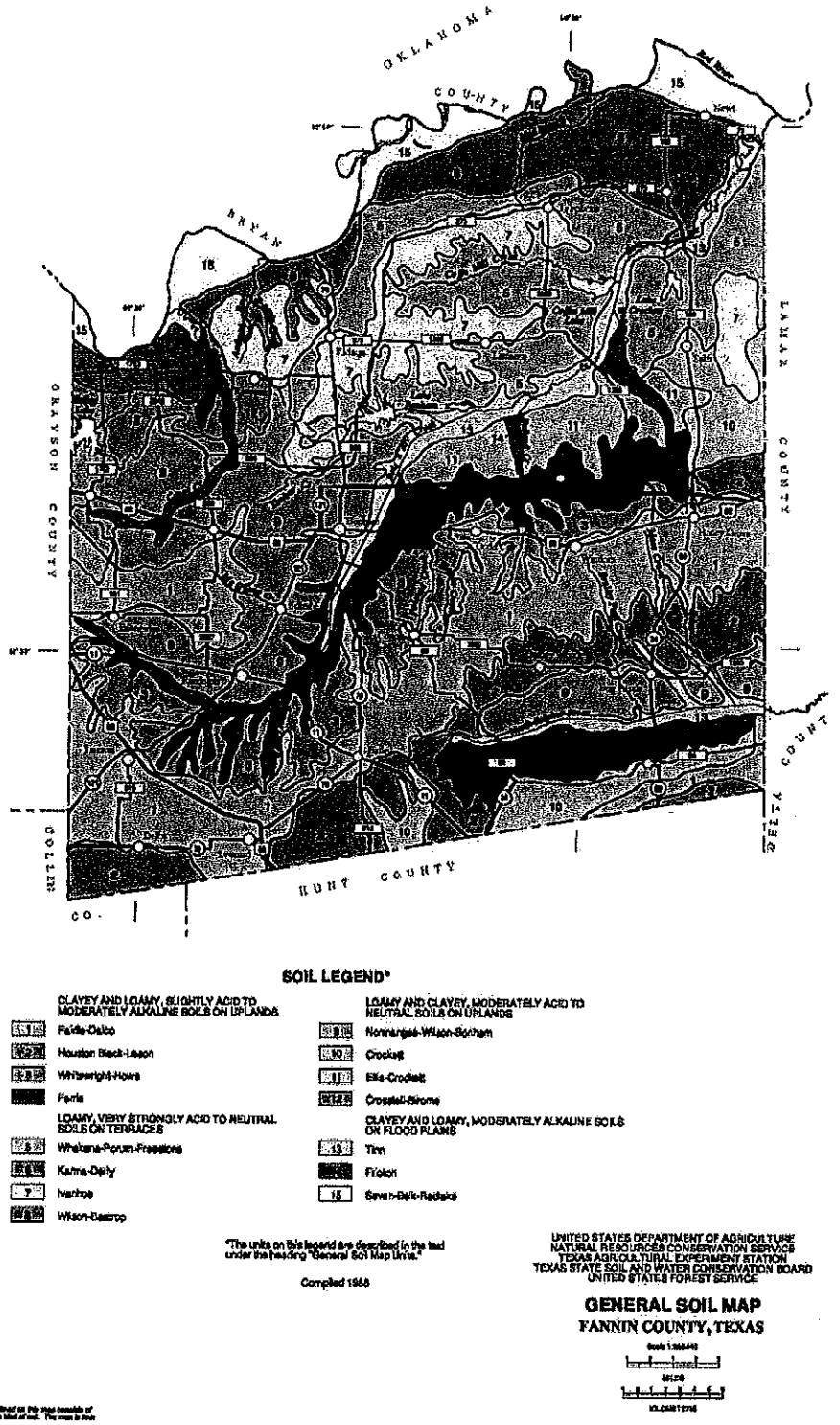


Figure C.1 General soil map of Fannin County, Texas. The North Sulphur River is located in the southeast corner.

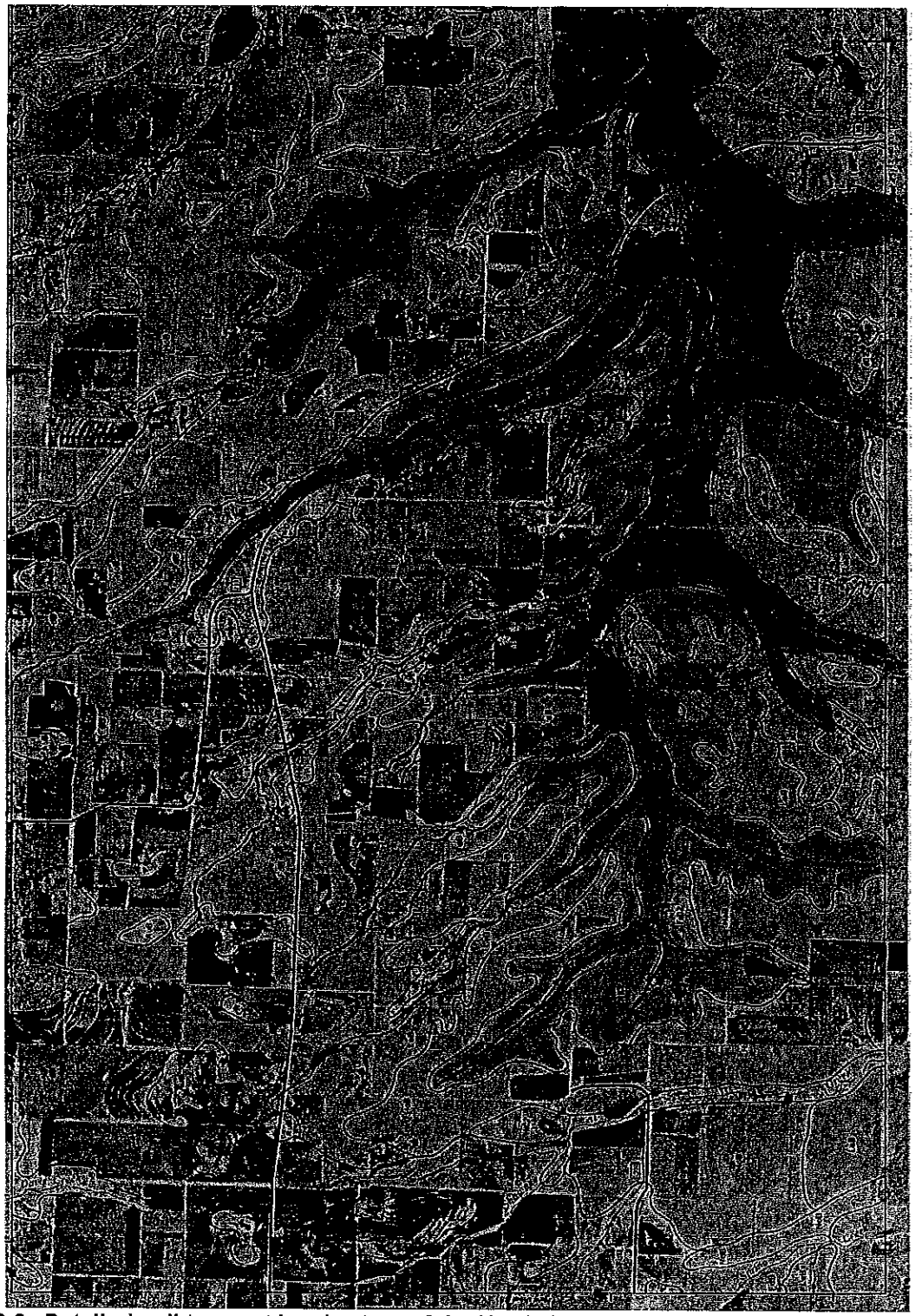


Figure C.2 Detailed soil types at headwaters of the North Sulphur River along the channel and bordering areas. Orange shaded areas are Tinn Clay and blue shaded areas are the Heiden-Ferris complex.

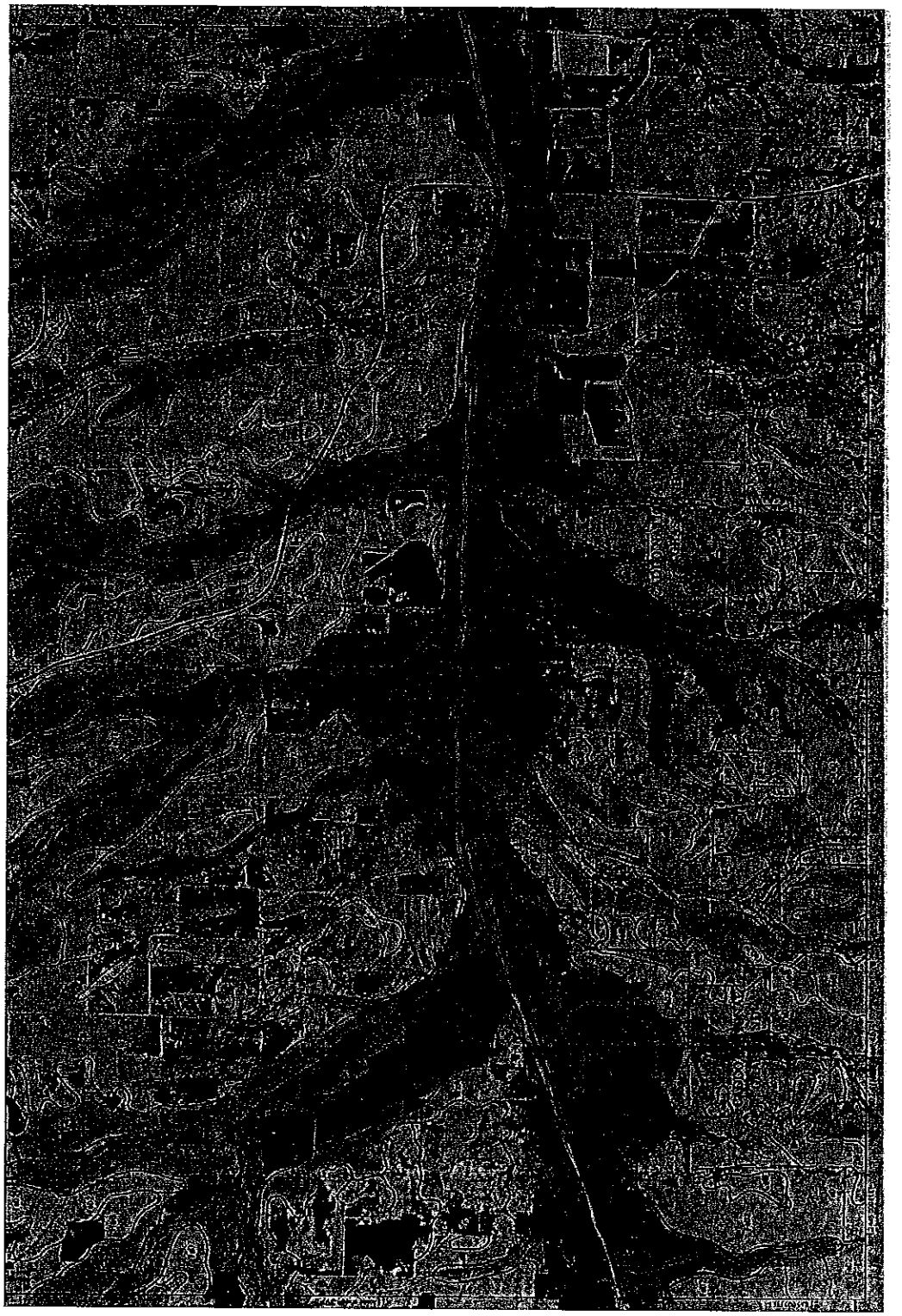


Figure C.3 Detailed soil types along the channel and bordering areas of the North Sulphur River upstream from the proposed reservoir. Orange shaded areas are Tinn Clay and blue shaded areas are the Heiden-Ferris complex.

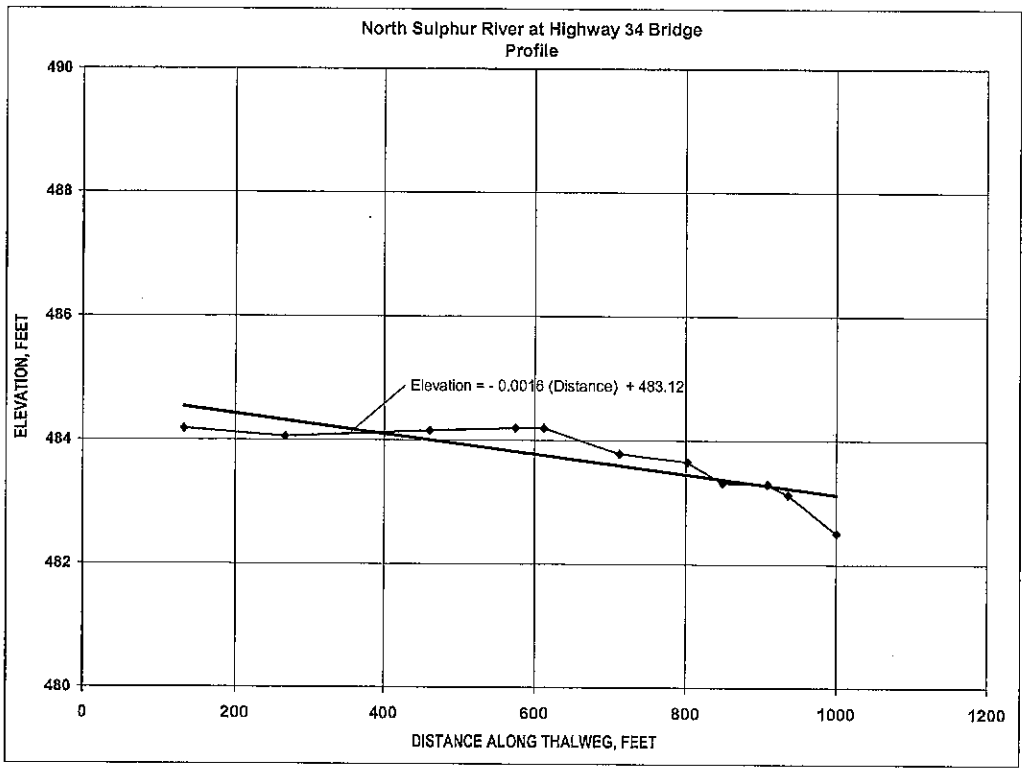


Figure D.1 Measured thalweg profile along the North Sulphur River upstream of SH 34 Bridge.

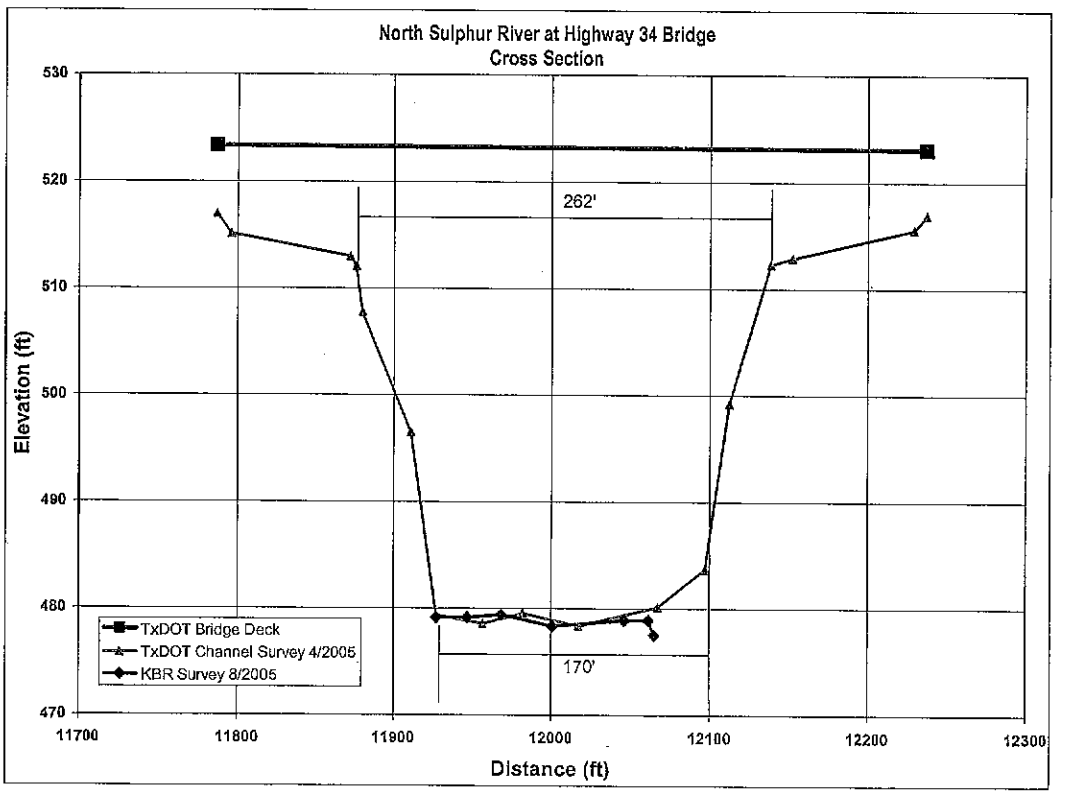


Figure D.2 Surveyed North Sulphur River cross section at SH 34 Bridge site (2005).

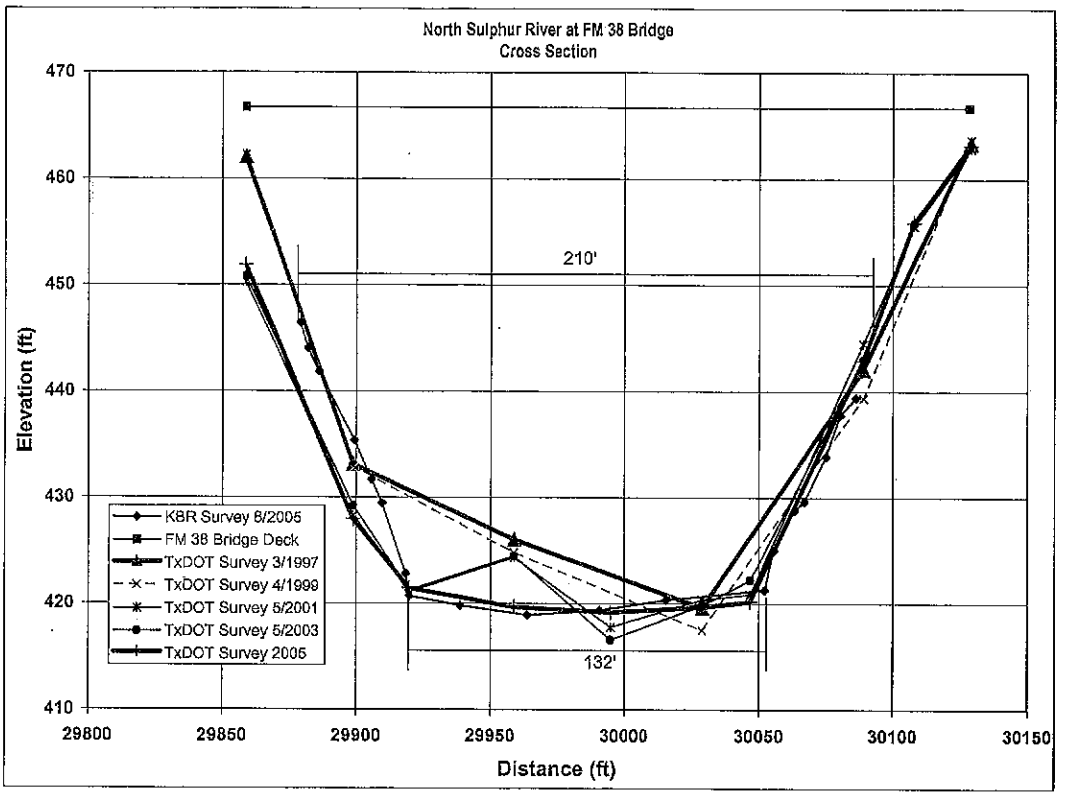


Figure D.3 Surveyed North Sulphur River cross sections at FM 38 Bridge site (1997-2005).

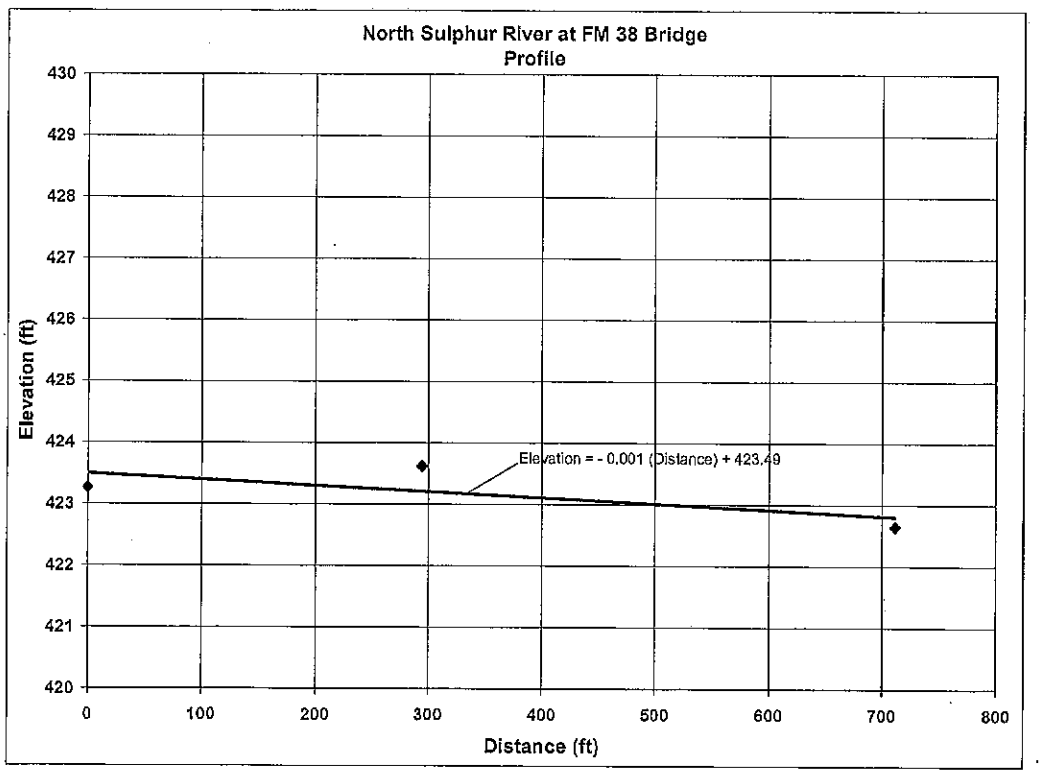


Figure D.4 Surveyed thalweg profile along North Sulphur River at FM 38 Bridge site (2005).

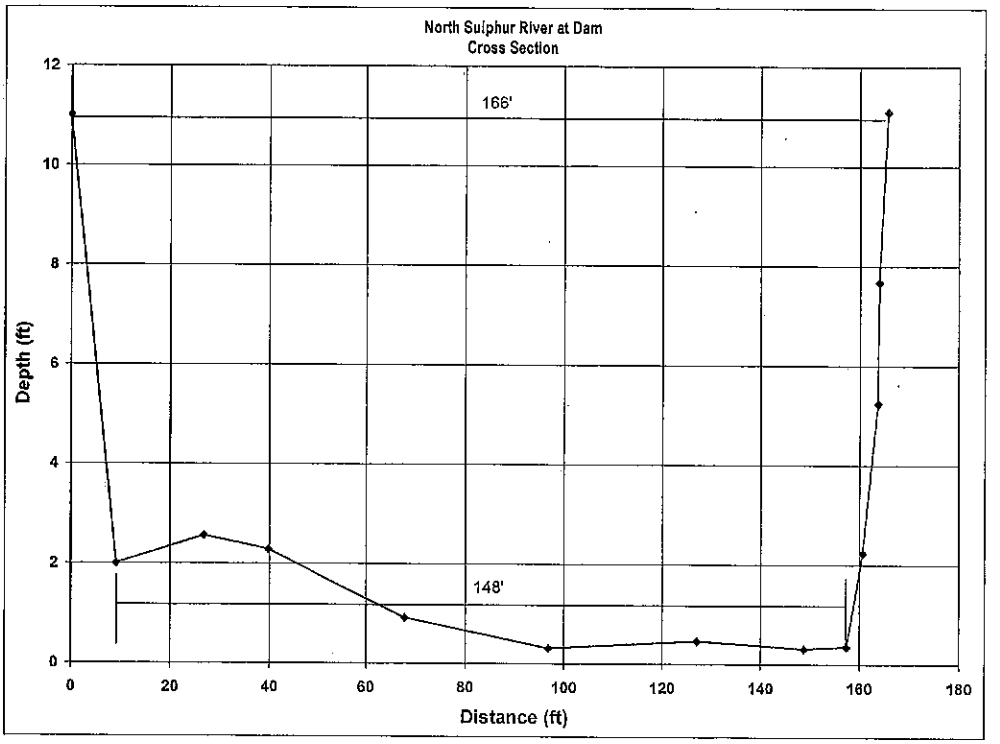


Figure D.5 Surveyed channel cross section along North Sulphur near proposed dam site.

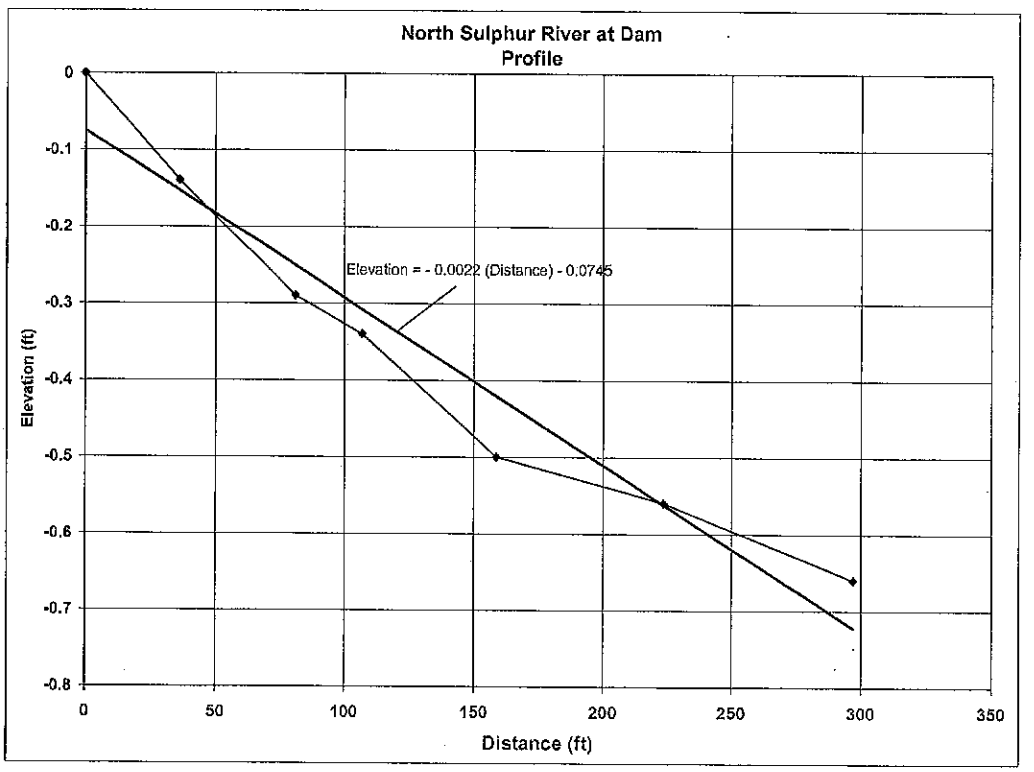


Figure D.6 Surveyed thalweg profile along North Sulphur near proposed dam site.

Table E.1 Summary of TxDOT Hydraulic Computation Sheets from SH 34 bridge drawings

Data from Highway 34 Bridge Drawings

50 Year Data

High Water Mark	Velocity	Flow
498.89	12.06	42350

100 year

High Water Mark	Velocity	Flow
501.74	13.43	55010

Using the 1964 cross sections and the 2-year return frequency flood hydrograph, hydraulic computations were carried out using the BRI-STARS (Hydrau-Tech, 2000) model. This appendix provides summary tables generated by the model for selected discharges.

Table E.2 BRI-STARS 6.01 output for North Sulphur River mainstem between BR 590 and FM 38

```
*************************************************
*          BRI-STARS VER  6.01  OUTPUT          *
*************************************************
```

```
*****************************************
*     RESULTS OF BACKWATER COMPUTATIONS  *
*      DISCHARGE =     500.00   C.F.S.   *
*****************************************
```

STA NO.	STATION (FT)	BOTTOM ELEVATN	WATER SURF. ELEVATION	FLOW AREA	AVERAGE VELOCITY	ENER. GRADE ELEVATION	FROUDE NUMBER
1	103912.0	570.00	572.35	148.9	3.36	572.529	.42
2	100000.0	560.00	563.18	77.8	6.43	563.903	.77
3	89912.0	535.00	536.68	134.1	3.73	536.901	.53
4	83512.0	525.00	528.45	183.4	2.73	528.574	.31
5	73312.0	510.00	511.27	137.4	3.64	511.475	.59
6	68912.0	500.00	501.08	187.3	2.67	501.191	.46
7	64912.0	495.00	496.98	346.4	1.44	497.014	.18
8	59300.0	490.00	491.17	180.2	2.77	491.290	.46
9	46912.0	470.00	471.34	186.5	2.68	471.457	.41
10	28700.0	450.00	451.58	225.6	2.22	451.653	.31
11	18787.0	440.00	441.83	167.5	2.99	441.971	.41
12	8912.0	430.00	431.71	201.4	2.48	431.812	.34
13	6912.0	428.00	429.69	180.7	2.77	429.805	.38
14	.0	420.00	421.50	184.5	2.71	421.615	.40

```
*****************************************
*     RESULTS OF BACKWATER COMPUTATIONS   *
*      DISCHARGE =     800.00   C.F.S.    *
*****************************************
```

STA NO.	STATION (FT)	BOTTOM ELEVATN	WATER SURF. ELEVATION	FLOW AREA	AVERAGE VELOCITY	ENER. GRADE ELEVATION	FROUDE NUMBER
1	103912.0	570.00	573.31	220.4	3.63	573.527	.39
2	100000.0	559.99	564.01	106.1	7.54	565.023	.83
3	89912.0	534.99	537.24	183.0	4.37	537.548	.54
4	83512.0	525.00	529.44	258.4	3.10	529.609	.32
5	73312.0	509.99	511.64	181.3	4.41	511.952	.63
6	68912.0	500.00	501.45	253.2	3.16	501.606	.47
7	64912.0	495.01	497.44	427.7	1.87	497.499	.21
8	59300.0	490.00	491.56	242.0	3.31	491.729	.47
9	46912.0	470.00	471.76	246.0	3.25	471.929	.44
10	28700.0	450.00	452.14	307.5	2.60	452.246	.32
11	18787.0	440.00	442.37	221.4	3.61	442.580	.44
12	8912.0	430.01	432.32	275.1	2.91	432.458	.35
13	6912.0	428.00	430.27	237.7	3.37	430.449	.41
14	.0	420.00	422.00	248.1	3.22	422.164	.41

```
*****************************************
*     RESULTS OF BACKWATER COMPUTATIONS   *
*      DISCHARGE =    1600.00   C.F.S.    *
*****************************************
```

STA NO.	STATION (FT)	BOTTOM ELEVATN	WATER SURF. ELEVATION	FLOW AREA	AVERAGE VELOCITY	ENER. GRADE ELEVATION	FROUDE NUMBER
1	103912.0	570.00	575.53	407.1	3.93	575.788	.34
2	100000.0	559.99	565.59	168.9	9.47	567.231	.92
3	89912.0	534.99	538.44	292.6	5.47	538.922	.56
4	83512.0	525.00	531.31	422.1	3.79	531.559	.33
5	73312.0	509.99	512.42	273.8	5.84	512.964	.70
6	68912.0	499.99	502.26	397.3	4.03	502.512	.48
7	64912.0	495.01	498.47	612.1	2.61	498.580	.25
8	59300.0	489.99	492.35	370.9	4.31	492.645	.51
9	46912.0	470.00	472.67	376.7	4.25	472.949	.47
10	28700.0	450.01	453.26	473.4	3.38	453.444	.34
11	18787.0	439.99	443.54	344.0	4.65	443.894	.47
12	8912.0	430.01	433.48	419.9	3.81	433.713	.38
13	6912.0	427.99	431.37	364.6	4.39	431.675	.44
14	.0	420.00	423.00	378.4	4.23	423.284	.44

```
*****************************************
*     RESULTS OF BACKWATER COMPUTATIONS   *
*      DISCHARGE =    3500.00   C.F.S.    *
*****************************************
```

STA NO.	STATION (FT)	BOTTOM ELEVATN	WATER SURF. ELEVATION	FLOW AREA	AVERAGE VELOCITY	ENER. GRADE ELEVATION	FROUDE NUMBER
1	103912.0	570.00	579.19	785.0	4.46	579.540	.32
2	100000.0	559.98	568.12	293.5	11.93	570.775	1.00
3	89912.0	534.98	540.57	508.8	6.88	541.362	.58
4	83512.0	524.99	534.17	708.7	4.94	534.592	.36
5	73312.0	509.98	513.73	440.6	7.94	514.758	.78
6	68912.0	499.98	503.74	665.2	5.26	504.174	.49
7	64912.0	495.02	500.19	927.8	3.77	500.418	.30
8	59300.0	489.99	493.74	603.7	5.80	494.276	.55
9	46912.0	470.00	474.25	614.1	5.70	474.756	.50
10	28700.0	450.01	455.26	776.3	4.51	455.579	.36
11	18787.0	439.98	445.53	571.1	6.13	446.156	.51
12	8912.0	430.01	435.48	683.5	5.12	435.907	.41
13	6912.0	427.98	433.18	582.2	6.01	433.743	.49
14	.0	419.99	424.90	637.2	5.49	425.384	.46

```
*****************************************
*     RESULTS OF BACKWATER COMPUTATIONS   *
*      DISCHARGE =    4000.00   C.F.S.    *
*****************************************
```

STA NO.	STATION (FT)	BOTTOM ELEVATN	WATER SURF. ELEVATION	FLOW AREA	AVERAGE VELOCITY	ENER. GRADE ELEVATION	FROUDE NUMBER
1	103912.0	570.00	579.77	852.8	4.69	580.160	.33
2	100000.0	559.98	568.69	326.3	12.26	571.512	1.00
3	89912.0	534.98	541.05	560.6	7.13	541.897	.58
4	83512.0	524.99	534.74	771.8	5.18	535.210	.36
5	73312.0	509.98	514.02	478.6	8.36	515.153	.79
6	68912.0	499.98	504.07	726.6	5.51	504.546	.49
7	64912.0	495.01	500.56	997.6	4.01	500.815	.31
8	59300.0	489.98	494.04	656.4	6.09	494.636	.56
9	46912.0	469.99	474.59	668.3	5.99	475.156	.51
10	28700.0	450.01	455.69	844.8	4.73	456.048	.36
11	18787.0	439.98	445.96	623.7	6.41	446.647	.52
12	8912.0	430.01	435.91	742.8	5.38	436.382	.42
13	6912.0	427.98	433.58	632.9	6.32	434.205	.50
14	.0	419.99	425.30	694.1	5.76	425.835	.47

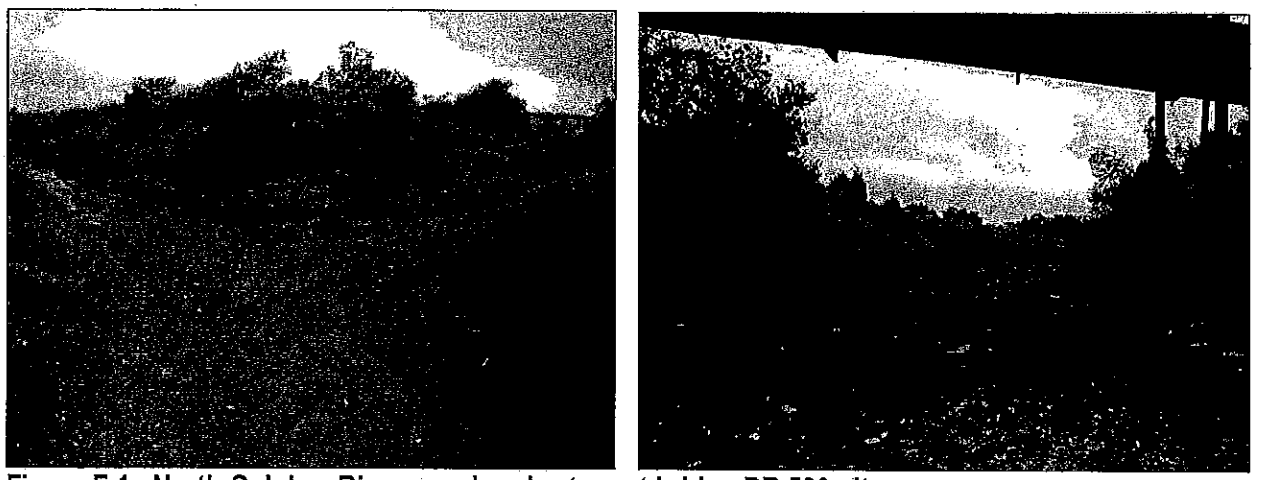


Figure F.1. North Sulphur River near headwaters at bridge BR 590 site.

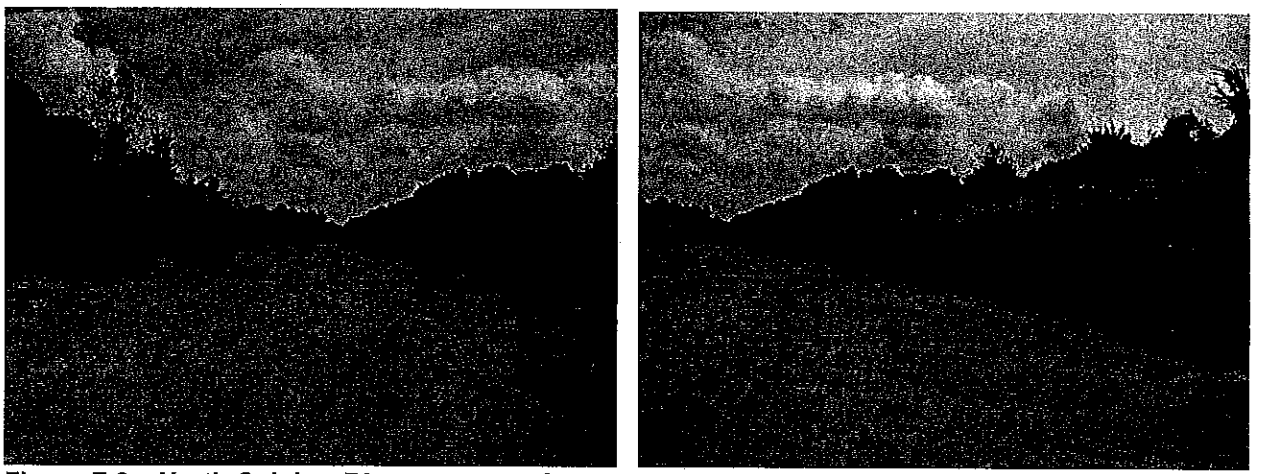


Figure F.2. North Sulphur River upstream from Brushy Creek confluence.

Figure F.3. North Sulphur River at SH 34.

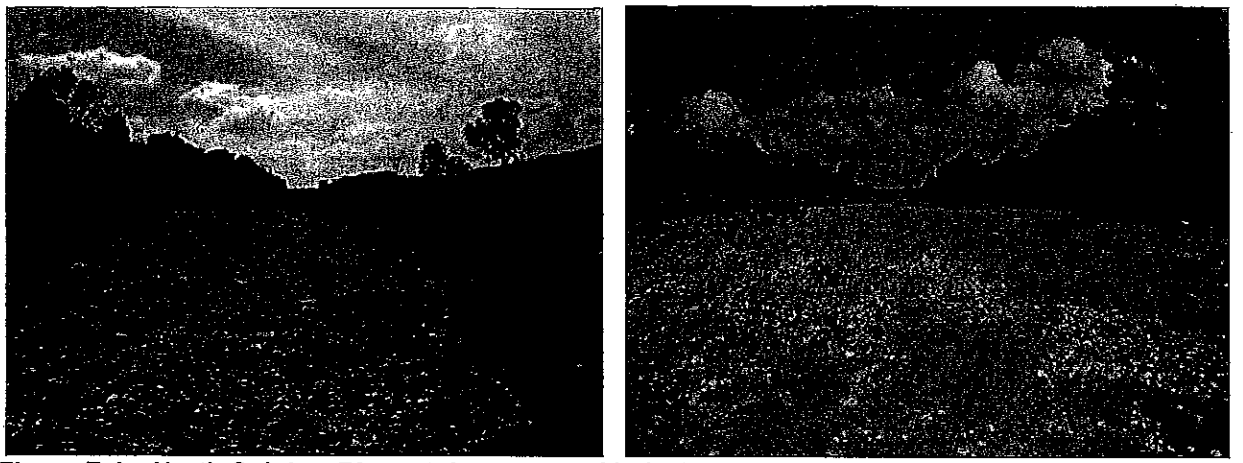


Figure F.4. North Sulphur River at the proposed Lake Ralph Hall dam site.

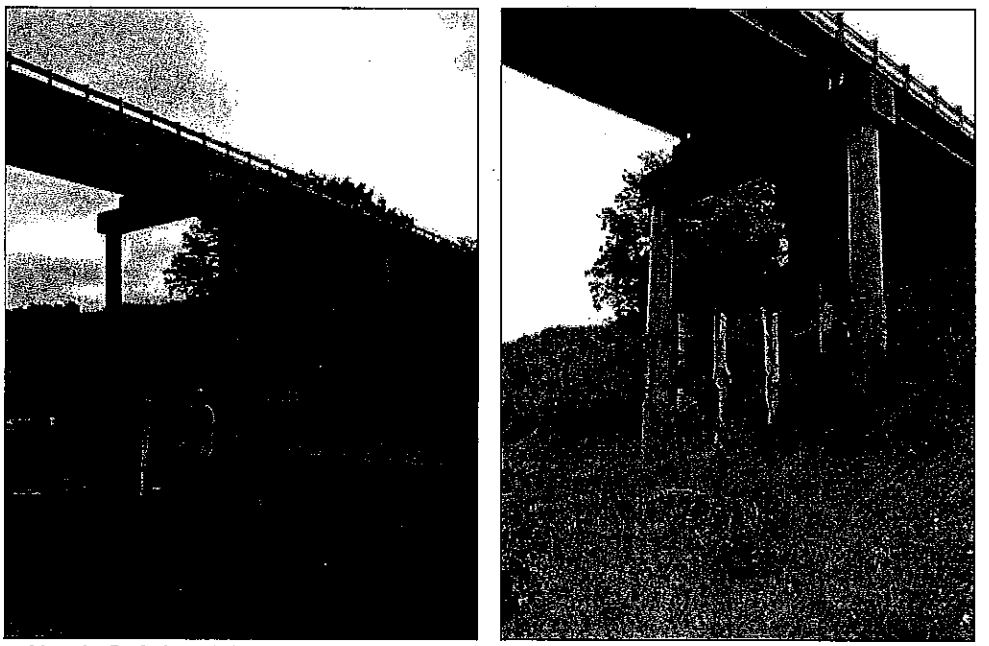
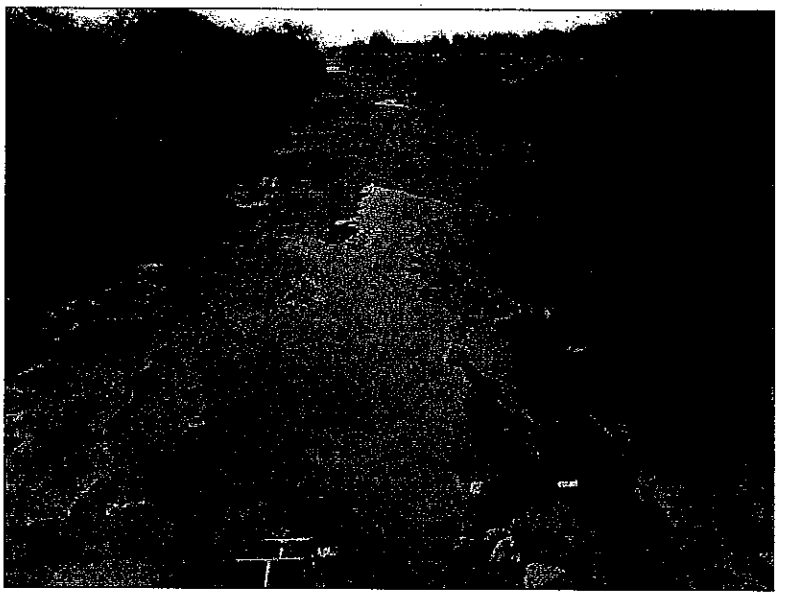


Figure F.5. North Sulphur River upstream at FM 38 bridge site.



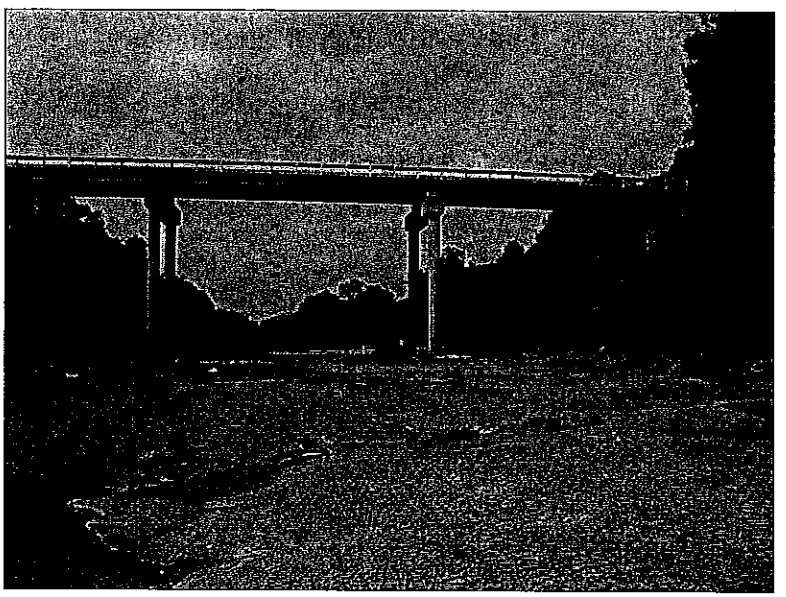


Figure F.6. North Sulphur River at FM 38 bridge site.

MASTER ENGINEERING SERVICE AGREEMENT

WORK ORDER NO. 12

Date: 3.6.06

Consultant: Kellogg Brown & Root, Inc.

This Work Order is executed and entered into effective as of the date set forth above pursuant to the terms of that certain Master Service Agreement between the Town of Flower Mound, TX and Kellogg Brown & Root, Inc, dated effective January 22, 2004.

Type of effort: In consideration of the services to be performed under the project scope shown below, the Consultant shall be compensated on a Cost With Multiplier basis as specified in Section A.2. of Attachment A of the Master Agreement. The total compensation is Not To Exceed $81,100.

Scope of Work
Lake Ralph Hall Sedimentation
Potential Study—Phase 2

The Upper Trinity Regional Water District (UTRWD) proposes to construct an 180,000 acre-ft reservoir named Lake Ralph Hall in Fannin County near Ladonia, Texas. The on-channel reservoir will be near the headwaters of the North Sulphur River, which flows east through Texas, joining the South Sulphur River in Lamar County to form the Sulphur River, which then flows into Arkansas to its confluence with the Red River. The UTRWD proposes to use this reservoir for water supply to customer cities near the Dallas-Fort Worth Metroplex. The District will transfer 45,000 acre-ft of water per year to the Trinity River basin for municipal, industrial, and agricultural uses.

The possibility of sediment accumulation and loss of usable reservoir capacity is one of the primary areas of concern for all reservoirs. KBR previously teamed with Hydrau-Tech Inc. to complete a primarily geomorphologic assessment and qualitative analysis of the basin characteristics of the upper North Sulphur River watershed and sedimentation potential of Lake Ralph Hall. This primarily qualitative geomorphologic assessment addressed sediment transport, channel hydraulics and stability, and basin issues.

This is a scope of work for the second phase study of the sedimentation potential of Lake Ralph Hall. This phase is a quantitative study to calculate the volumetric rate of sedimentation over the anticipated reservoir lifespan. The following tasks will comprise this work:

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Task 1—Hydrology

Data collection during Phase 1 unearthed the "Ralph Hall Lake Reservoir Project Preliminary Hydrological Analysis" from July 2000. This study is inadequate for the needs of a sediment transport model. KBR will model the North Sulphur River watershed from the proposed dam site to the river headwaters. To accomplish this, the following subtasks will be carried out:

Subtask 1.1 Refined watershed hydrologic computations
Subtask 1.2 Comparisons with previous studies
Subtask 1.3 Compute long-term daily runoff values

In Subtask 1.1, Refined Hydrology, KBR will calculate hydrographs and peak flows at the following recurrence intervals:

- 100-year
- 50-year
- 25-year
- 10-year
- 5-year
- 1.5-year

In Subtask 1.2, Comparisons with Previous Studies, KBR will compare results of refined hydrologic calculations with computations in the "Ralph Hall Lake Reservoir Project Preliminary Hydrological Analysis" from July 2000; discrepancies will be explained wherever encountered.

In Subtask 1.3, KBR will develop continuous flow records corresponding to the recurrence intervals calculated in Subtask 1.1. These flows will be used in computing dominant discharges that carry significant amounts of sediment through time and are the basis for channel geomorphology. The missing flow data records (if there any) will be filled using appropriate hydrological procedures.

Deliverable: Hydrologic Model Input and Output.

Task 2—Sediment Transport

The volumetric sediment transport of the river will be computed using BRI-STARS, a generalized semi-two-dimensional water and sediment-routing computer model used to compute alluvial scour/deposition. This is not a design phase level of analysis where the geometric characteristics of scour and deposition are the primary concern. Rather, this phase is concerned with volumetric sediment transport to predict reservoir lifespan.

KBR will use BRI-STARS to quantify reservoir sediment inflows from the North Sulphur River and its major tributaries. The data needed for BRI-STARS can be grouped under 3 major categories:

1) Hydraulic Data
   - Topographic Information (channel cross sections along river)
   - Channel characterization (locations of main channel, left and right floodplain regions)

Town of Flower Mound
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- Roughness (channel roughness along the river)
- Coefficients of Losses (coefficients of contraction, expansion, and local losses)

2) Hydrologic Data
- Inflow hydrograph
- Control elevations

3) Sediment data
- Sediment size fractions for the reach
- Sediment size distribution along the river at various locations
- Sediment inflow hydrograph
- Water temperature
- Angle of repose for bed and bank materials

During our first phase of this study, KBR conducted a literature review for topographic information and hydrologic data and visited the site to collect channel characteristics and sediment data. During that site visit KBR collected a limited numbers of channel cross sections, bed and bank sediment type information, bank angle of repose information, and sediment size data. KBR took a limited number of sediment samples (10 samples) along the 12 mile-long reach and analyzed those samples at the Colorado State University Soils Laboratory.

In this phase, KBR will collect additional sediment samples from sites that represent the upper watershed and the primary sediment source areas so that the sediments available for transport can be better characterized. KBR will also collect samples and hydraulic information along the steeper channel segments feeding into the proposed reservoir. Upstream sediment inflow hydrographs to the BRI-STARS channel routing model will be developed through watershed sediment yield estimates corresponding to runoff values from Task 1 Hydrologic computations.

The major subtasks for Task 2 are:

Subtask 2.1	Watershed sediment yields
Subtask 2.2	BRI-STARS modeling of the sediment transport of the North Sulphur River main stem a. Input data preparation b. Model calibration c. Model verification d. Model runs
Subtask 2.3	Total reservoir sediment inflow computations from contributing sources (watershed units and channel units).
Subtask 2.4	Reservoir life computations.

Deliverable: BRI-STARS Model Input and Output.

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Task 3—Report
KBR will provide a full project report summarizing both the hydrologic modeling and the sediment transport modeling.

Deliverable: Report

Task 4—Meetings and Project Management
KBR will manage the work and subcontract with Hydrau-Tech out of Fort Collins, Colorado. A project kick-off meeting will be held with the Town of Flower Mound staff and a project completion meeting will be held to discuss results with Town staff.

Additional Services not Covered by this Scope
Time for addressing public or private inquiries on the findings of the study would be included under a separate work order. Although scrutiny by disagreeing organizations is likely after the publication and distribution of this study, no time has been included to address potential concerns of these other parties. Attendance at the March 27th or 28th public meetings would also be included under a separate work order.

Fee
Per KBR's Master Agreement with the Town of Flower Mound, the proposed fee for the Phase II work will be based on a Cost With Multiplier basis as specified in Section A.2 of Attachment A of the Master Agreement. The fee necessary to complete the work as outlined in this scope is $81,100. This fee will not be exceeded without your authorization. Dr. Albert Molinas of Hydrau-Tech, Inc will serve as subconsultant to KBR on this project.

Schedule
Work will proceed within 1 week of the receipt of the notice to proceed. It is anticipated that the work will be complete 4 months later.

Optional Task
To maintain objectivity, this analysis does not begin with any assumption of reservoir lifespan or sedimentation rates. If it is shown that the reservoir lifespan is threatened by sedimentation, KBR could provide a conceptual level cost estimate and description of sedimentation mitigation measures (such as check dams). The deliverable would be a technical memorandum and conceptual level cost estimate. The fee for this task would be $44,000.

Town of Flower Mound
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All other provisions, as amended, are unchanged and remain in full force and effect.

TOWN OF FLOWER MOUND	ACCEPTED: KELLOGG BROWN & ROOT, INC.
By:	By:
Jody A. Smith, Mayor	William M. Hall, Vice President
Printed Name and Title	Printed Name and Title
3·6·06	February 21, 2006
Date	Date

Town of Flower Mound
TOWN SECRETARY'S OFFICE

Town of Flower Mound
Scope of Work Lake Ralph Hall Sedimentation Potential Study - Phase 2

KBR

			Project Manager	Sub-contractor	Surveyor	QA/QC	Totals
Task 1 - Hydrology							
1.1	Hydrologic Computations		54	8			62
1.2	Compare to Previous Study		16	6			22
1.2	Daily Runoff Values		20	12		6	38
		SubTotal (hrs)	90	26		6	**122**
		Labor Fee	$10,260	$3,432	$2,000	$1,272	$16,964
		Non-Labor					$500
		Task 1 Total Fee					**$17,464**
Task 2 - Sediment Transport							
2.1	Watershed Sediment Yields		16	40			56
2.2	BRI-STARS Modeling		16	40			56
2.3	Reservoir Sediment Inflow		44	40			84
2.4	Reservoir Life Computations		16	120		12	148
		SubTotal (hrs)	92	240		12	**344**
		Labor Fee	$10,488	$31,680		$2,544	$44,712
		Non-Labor					$1,000
		Task 2 Total Fee					**$45,712**
Task 3 - Reports							
3.1	Report		40	52		8	
		SubTotal (hrs)	40	52		8	**100**
		Labor Fee	$4,560	$6,864		$1,696	$13,120
		Non-Labor					$500
		Task 3 Total Fee					**$13,620**

Town of Flower Mound
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Town of Flower Mound
Scope of Work Lake Ralph Hall Sedimentation Potential Study - Phase 2

KBR

			Project Manager	Sub-contractor	Surveyor	QA/QC	Totals
Task 4 - Project Management and Meetings							
4.1	Project Management		8				
4.2	Meetings		12	8			
		SubTotal (hrs)	20	8		0	28
		Labor Fee	$2,280	$1,056		$0	$3,336
		Non-Labor					$1,000
		Task 4 Total Fee					**$4,336**
		Grand Total (hrs)	242	326		26	594
		Grand Total Labor Fee	$27,588	$43,032		$5,512	$78,132
		Grand Total Non-Labor					$3,000
		Grand Total Fee					**$81,100**
Optional Task - Sedimentation Mitigation							
1.1	Determine up to 3 Potential Sediment Mitigation Measures		8	8		2	18
1.2	Model in BRI-STARS		40	80			120
1.3	Conceptual Level Cost Estimate of Three Options		40	40		16	96
1.4	Report		20	40		8	68
		SubTotal (hrs)	108	168		26	302
		Labor Fee	$12,312	$22,176		$5,512	$40,000
		Non-Labor					$4,000
		Optional Task Total Fee					**$44,000**

Town of Flower Mound
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THE TOWN OF FLOWER MOUND TEXAS

TOWN COUNCIL MEETING
AGENDA ITEM NO: 16
August 1, 2005

CONSENT ITEM [ ] REGULAR ITEM [X] WORKSHOP ITEM [ ]

FROM: Michael Ryan, Director of Community Affairs

THROUGH: Van James, Town Manager

PRESENTER: Harlan Jefferson, Deputy Town Manager/CFO

ITEM: Consider approval of a resolution opposing the utilization of water reuse estimates by the Region C Water Planning Group ("Region C") and Upper Trinity Regional Water District ("UTRWD").

[ ] Ordinance

[X] Resolution

[ ] Motion

[ ] Direction

I. ITEM SUMMARY

The purpose of this item is to discuss and consider a resolution opposing the utilization by the Region C and UTRWD of water reuse estimates to calculate cost projections for Lake Ralph Hall and other new reservoirs.

II. FISCAL IMPACT:

N/A

III. BACKGROUND INFORMATION:

The Region C is charged with diligent and judicious planning for the region's future water needs and is currently in the process of updating the proposed 5-year Initially Prepared Plan. Region C's jurisdiction spans 16 counties, including Denton, and involves numerous water providers, including UTRWD.

When evaluating water supply sources for inclusion in the plan, Region C officials must consider a variety of proposed new reservoirs. With the exception of Lake Ralph Hall, it is not Region C's standard operating procedure to incorporate water reuse calculations when projecting cost estimates for, and considering approval of, a new reservoir.

Reuse water is typically not a benefit that is available from a new reservoir for a substantial amount of time, due to an extensive permitting process that includes a state-level review considering all parties involved with the reservoir, including downstream beneficiaries

In researching Lake Ralph Hall, Flower Mound's consulting engineering firm, Kellogg, Brown, and Root (KBR), determined that the cost-estimates being utilized by Region C to evaluate the proposed new reservoir already include reuse water estimates. The KBR research also indicates that Lake Ralph Hall is the only reservoir project being considered by Region C that includes reuse estimates in the cost projections.

KBR's conclusion is that utilizing water reuse estimates in the budget for a new reservoir artificially lowers the total cost projection, and subsequently the per unit costs for Lake Ralph Hall, and prevents an equitable comparison to alternative water supply options.

The attached resolution, to be presented to the Region C and UTRWD, reaffirms the Town's position that all reservoir water projects under consideration for recommendation for Region C projects should be evaluated and compared equably and not include reuse water projections.

IV. LEGAL ISSUES:

Terrence S. Welch of Brown & Hofmeister, L.L.P., has reviewed and approved the attached proposed Resolution as to form.

V. OTHER CONFLICTS OR ISSUES:

There are no known conflicts or issues at this time.

VI. ATTACHMENTS:

- Resolution

VII. RECOMMENDED MOTION AND/OR ACTION:

Move to approve a resolution opposing the utilization of water reuse estimates by the Region C Water Planning Group ("Region C") and Upper Trinity Regional Water District ("UTRWD").

TOWN OF FLOWER MOUND, TEXAS

RESOLUTION NO. 20 -05

A RESOLUTION OF THE TOWN COUNCIL OF THE TOWN OF FLOWER MOUND, TEXAS ("TOWN"), OPPOSING THE UTILIZATION OF WATER REUSE ESTIMATES TO CALCULATE COST PROJECTIONS FOR A NEW RESERVOIR.

WHEREAS, the Region C Water Planning Group ("Region C") is charged with diligent and judicious planning for the region's future water needs; and

WHEREAS, reuse water is typically not a benefit that is available from a new reservoir for a substantial amount of time, due to an extensive permitting process that includes a state-level review considering all parties involved with the reservoir including downstream beneficiaries; and

WHEREAS, with the exception of Lake Ralph Hall, it is not Region C's standard operating procedure to incorporate water reuse calculations when projecting cost estimates for, and considering approval of, a new reservoir; and

WHEREAS, all water projects under consideration for recommendation for Region C projects should be evaluated and compared equably.

NOW, THEREFORE, BE IT RESOLVED BY THE TOWN COUNCIL OF THE TOWN OF FLOWER MOUND, TEXAS:

SECTION 1

That after careful consideration of Region C's proposed plan and all of the included projects, the Town hereby declares opposition to the utilization of reuse estimates by Region C and Upper Trinity Regional Water District when calculating the per unit cost estimates of Lake Ralph Hall or any other reservoir project included in the proposed plan.

SECTION 2

That Region C should include reuse estimates for all applicable reservoir projects if it does not elect to remove the reuse estimates associated with Lake Ralph Hall in order to promote equable comparison among all proposed reservoirs.

SECTION 3

That this Resolution shall become effective immediately upon its passage.

Town of Flower Mound
TOWN SECRETARY'S OFFICE
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DULY PASSED AND APPROVED on this 1st day of August, 2005.

TOWN OF FLOWER MOUND, TEXAS

Jody A. Smith, MAYOR

ATTEST:

Paula J. Paschal, TMRC, TOWN SECRETARY

APPROVED AS TO FORM AND LEGALITY:

Terrence S. Welch, TOWN ATTORNEY

Town of Flower Mound
TOWN SECRETARY'S OFFICE
OFFICIAL FILE COPY

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1 From This portion can be removed for Recipient's records.

Date 3.21.06 FedEx Tracking Number 8542 6863 3377

Sender's Name Mayor Judy Smith Phone 972 874 6070

Company TOWN OF FLOWER MOUND

Address 2121 CROSS TIMBERS RD

Dept./Floor/Suite/Room

City FLOWER MOUND State TX ZIP 75028-2602

2 Your Internal Billing Reference

3 To

Recipient's Name La Donna Castañuela Office Chief Clerk Phone 512 239 3300

Company Texas Commission of Env. Quality

Recipient's Address 12100 Park 35 Circle Bldg F. Rm 1101

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4a Express Package Service To add SATURDAY Delivery, see Section 6. *Packages up to 150 lbs.* * To most locations.

- [x] FedEx Priority Overnight Next business morning.*
- [ ] FedEx Standard Overnight Next business afternoon.*
- [ ] FedEx First Overnight Earliest next business morning delivery to select locations.*
- [ ] FedEx 2Day Second business day.*
- [ ] FedEx Express Saver Third business day.*

FedEx Envelope rate not available. Minimum charge: One-pound rate.

4b Express Freight Service To add SATURDAY Delivery, see Section 6. *Packages over 150 lbs.* ** To most locations.

- [ ] FedEx 1Day Next business day.**
- [ ] FedEx 2Day Freight Second business day.**
- [ ] FedEx 3Day Freight Third business day.**

* Call for Confirmation:

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5 Packaging * Declared value limit $500.

- [ ] FedEx Envelope*
- [x] FedEx Pak* Includes FedEx Small Pak, FedEx Large Pak
- [ ] FedEx Box
- [ ] FedEx Tube
- [ ] Other

6 Special Handling Include FedEx address in Section 3.

- [ ] **SATURDAY Delivery** Available ONLY for FedEx Priority Overnight, FedEx 2Day, FedEx 1Day Freight, and FedEx 2Day Freight to select ZIP codes.
- [ ] **HOLD Weekday** at FedEx Location Not available for FedEx First Overnight.
- [ ] **HOLD Saturday** at FedEx Location Available ONLY for FedEx Priority Overnight and FedEx 2Day to select locations.

Does this shipment contain dangerous goods? One box must be checked.

- [x] No
- [ ] Yes As per attached Shipper's Declaration.
- [ ] Yes Shipper's Declaration not required.
- [ ] Dry Ice Dry Ice, 9, UN 1845 ____ x ____ kg
- [ ] Cargo Aircraft Only

Dangerous goods (including dry ice) cannot be shipped in FedEx packaging.

7 Payment Bill to: Enter FedEx Acct. No. or Credit Card No. below. Obtain Recip. Acct. No. [ ]

- [x] Sender Acct. No. in Section 1 will be billed.
- [ ] Recipient
- [ ] Third Party
- [ ] Credit Card
- [ ] Cash/Check

Total Packages	Total Weight	Total Charges
1	5	Credit Card Auth.

†Our liability is limited to $100 unless you declare a higher value. See the FedEx Service Guide for details.

8 NEW Residential Delivery Signature Options If you require a signature, check Direct or Indirect.

- [ ] No Signature Required Package may be left without obtaining a signature for delivery.
- [ ] Direct Signature Anyone at recipient's address may sign for delivery. *Fee applies.*
- [ ] Indirect Signature If no one is available at recipient's address, anyone at a neighboring address may sign for delivery. *Fee applies.*

519

Rev. Date 5/05•Part #158279•©1994-2005 FedEx•PRINTED IN U.S.A.•SRF

1MC105

This is a formal request to contest the granting of a permit by the Texas Commission on Environmental Quality to the Upper Trinity Water District. This request is in regards to the acquisition of private land for the creation of Lake Ralph Hall.

Permit application #5821

2006 MAR 13 PM 3:03
CHIEF CLERKS OFFICE
TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

OPA
MAR 14 2006
BY

To Whom It May Concern:

We request a contested case hearing. This request is made on behalf of the Woodson's and the Woodson Hereford Ranch.

It has become in our best interest to contest the unconstitutional stealing of our land by private entities named above. It is our belief that the desire to build this lake by the Upper Trinity Water District is based more on financial gains than a genuine concern for urban water needs. That being said, it is truly discerning to us that the value being placed on our land we cherish so much can be thought so little. Is it not a slap in the face to all landowners involved that this lake is even being considered in Fannin County. There is indeed river and creek basins that can be utilized for the creation of a lake much closer to where the water is truly needed. The only reason this is not considered is because of the affordability of those land basins. To us it is an insult that a value can be placed so short-handedly on our most prized possession. **OUR LAND**. $2000 an acre or $10,000 an acre, it is not enough.

The Woodson Hereford Ranch has been in operation since 1959. The Woodson's have been living in the Sulphur River Basin since the early 1900's. We are proud of our accomplishments that have been made through much sweat and hard work. Does this concern the Upper Trinity Water District? We don't believe it does. It should. Can they afford to build the lake closer to the Dallas Metroplex? We don't believe they can. The push for our land is aggressive for that fact. The Upper Trinity Water District is trying at all cost of morality to acquire our land, now rather than later, because they know in 10 years they will not be able to afford it. We say they can't afford it now because the value we place on our land is not afforded by any entity.

We implore on all involved to see the other sides, not just their own. A truly unique and beautiful place will be forever altered if permission is given for Lake Ralph Hall. At what cost. A greener landscape for people who don't value their natural resources as highly as they should? Please say no.

Sincerely,

Woodson Hereford Ranch
Manager
Tommy Sutherland

Tommy Sutherland
5843 FM 68
Wolfe City Tx.
75496

The Office of the Chief Clerk
MC 105
TCEQ
P.O. Box 13087
Austin Tx, 78711-3087

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March 8, 2006

CHIEF CLERK'S OFFICE

OPA

MAR 10 2006

BY

The Office of the Chief Clerk
MC 105
TCEQ
P.O. Box 13087
Austin, Texas 78711-3087

Dear Sir or Madam:

Please consider this letter as a formal request for a contested case hearing. For this request, I submit the following information:

Name: Carol A. Weiss, Trustee for the Weiss Living Trust, dated 03-13-03

Address: Long Creek Ranch, 8200 FM 68, Wolfe City, Texas 75496

Phone: 903-496-7619

Entity Applying for Permit: Upper Trinity Regional Water District (UTRWD)

Permit Application Number: 5821

Location of My Property in Relation to Proposed Reservoir: My affected property is located in the western most part of the project and consists of acreage on the Sulphur River and two tributary creeks (Long Creek and an unnamed creek) as well as large amounts of mitigation and flood plain acreage related to the three waterways and virgin timber stands. Please see enclosed map.

The Negative Effects of This Project on My Interests That are Not Common to the General Public:

1. Taxing District Boundaries: The boundaries of the taxing district created by the new Water District are too narrow. The multiple and numerous users of the lake/reservoir benefit, the general public, will not bear the costs, through taxes, of its various upkeep issues. The very narrowly defined proposed District targets those remaining landowners who unfortunately, after partial loss of family land/total loss of family business, continue to hold some ownership. The taxing boundaries must be expanded to include the larger group of users; otherwise, it becomes an inequitable and onerous tax placed squarely upon the backs of those citizens who have given up so much for this development project.

2. Financial Hardships Created by Required Environmental Regulation Upgrades: One of the hidden financial costs of this project on the remaining homeowners within the newly proposed Water District is the homeowner's forced upgrade of currently "at standard" wastewater and septic systems. These regulations are correctly in place to protect the reservoir water source from pollutants; however, the onerous cost of these upgrades should not be bourn by the homeowner who happens to fall within the new District boundaries. Protecting the reservoir from pollutants is a benefit shared by the general public user and not solely for the benefit of the affected homeowner. In any other circumstance, when the governmental body changes zoning or Code standards for the benefit of the general public, the current residents are "grandfathered in" and all future development is effected so as not to cause undue financial hardship on the current

residents. In this case, such "grandfathering" cannot occur. Therefore, to protect the "in District" current homeowners from such lopsided harm, the developer (a for-profit deep-pocket enterprise) should bear these costs as part of the entire project budget.

3. Property/Business Valuation Concerns: The tactics used by the UTRWD representatives at the initial meetings in Ladonia, Texas were abhorrent and unethical. Due to the certainty of the project, we were encouraged to sell out to them ASAP because their budget allocated only a certain amount of money to land purchase costs. The landowner holdouts could not be guaranteed fair market value if the UTRWD budget was overly reduced by the prior land purchase costs, because they only have so much to spend. If I chose to holdout, they would eventually get my land, its just a matter of what loss I was willing to take. Additionally, we were told that if we legally challenged their valuations, they would allocate their additional legal costs to the land purchase budget whereby constricting the budget even further. These are veiled threats. These tactics are not indicative of an impending arms length valuation process. In any arms length buy-sell transaction, the public at large would not be subject to such tactics. My legal right is fair market value. My true concern is just how far this group of unethical businessmen is willing to go to cause the appraisers to "fairly" undervalue my property.

To close, I don't know if this reservoir is a good idea or not. What I do know is that the strong-arm tactics used by the UTRWD have clouded the entire issue. The State of Texas, through its various agencies, has a responsibility to protect its citizens from such abuse. Therefore, I am contesting the project permitting and asking for more consideration relating to the necessity of the project as well asking the State to take a closer look at the business dealings of the Upper Trinity Regional Water District.

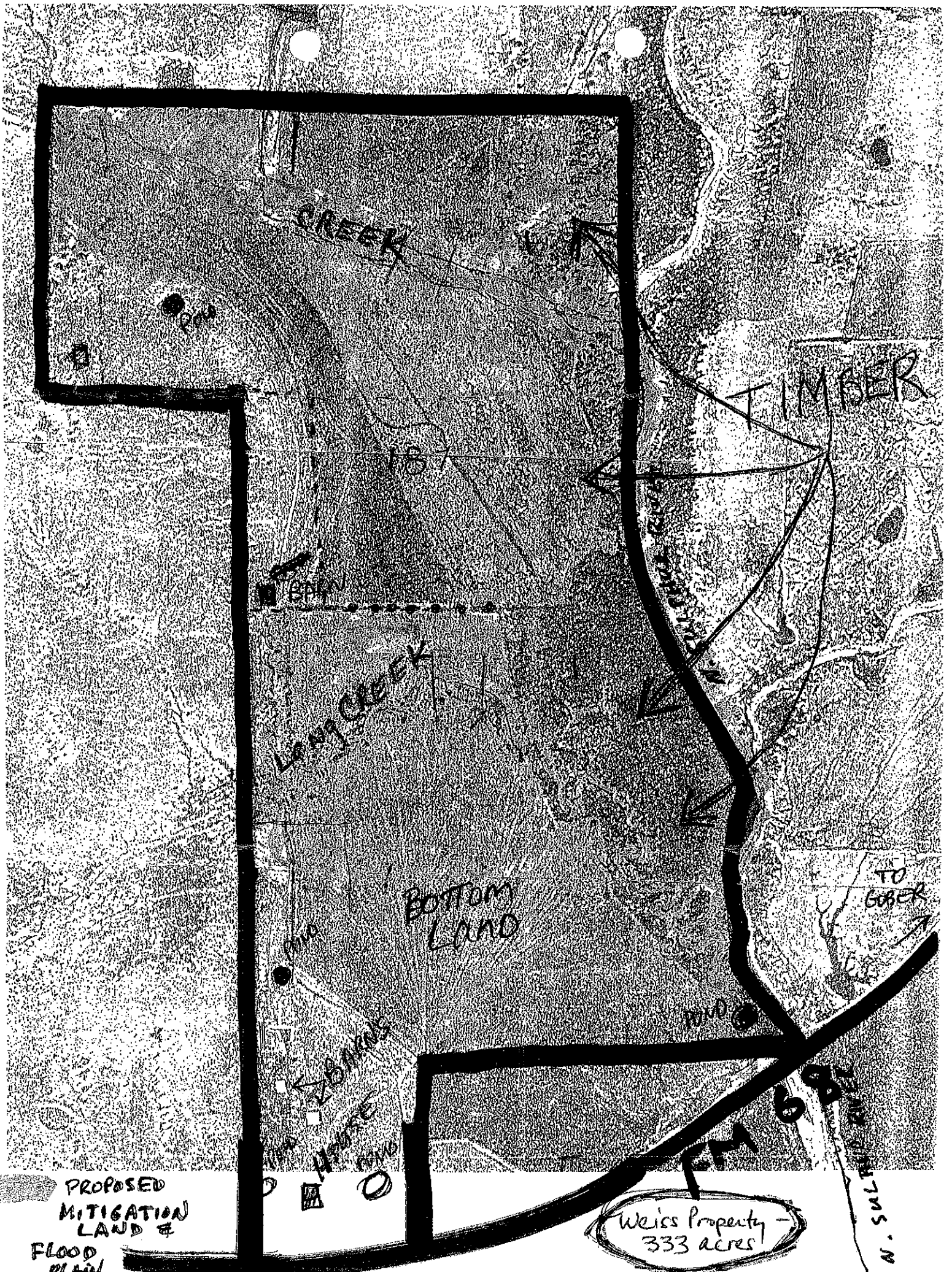
Thank you for your time and consideration.

Sincerely,

Carol Weiss

Carol Weiss

Copy: Fed Ex to The Office of the Chief Clerk
Building F 1st Floor
12100 Parks 35 Circle
Austin, Texas 78753
March 8, 2006

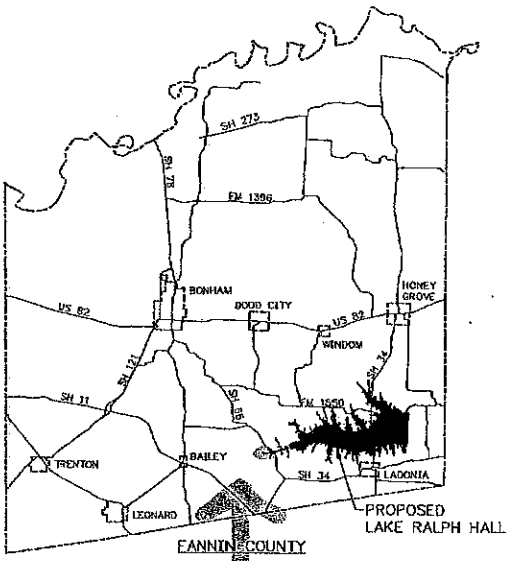

CREEK
POND
TIMBER
BARN
BOTTOM LAND
TO GOBER
POND
POND
POND
PROPOSED MITIGATION LAND
FLOOD PLAIN
Weiss Property - 333 acres

UPPER TRINITY
REGIONAL WATER DISTRICT
P.O. Drawer 305
Lewisville, Texas 75067
(972) 219-1228

FACT SHEET
LAKE RALPH HALL

LOCATION - - PROPOSED SITE

The site of proposed Lake Ralph Hall is on the North Sulphur River in southeast Fannin County near the Town of Ladonia. The proposed lake would create an impoundment of approximately 180,000 acre-feet. The proposed lake site would comprise approximately 11,200 acres. The proposed lake will yield approximately 35,000 acre-feet of water per year on a dependable basis.



See attached large map

Current Land Use - - Proposed Site

- Approximately 25 percent is wooded (not bottomland hardwoods).
- Approximately 75 percent is farmland/rangeland.

not flood plain land + mitigated properties
flood plain is 10 ft ↑ or 100 yds out

State Highways - - Proposed Site

- Approximately 7.6 miles of State Highways lie within the site.
- State Highway 34 would be elevated above the lake, probably along its current alignment.
- State Highway 68 may require a minor adjustment of the bridge at the North Sulphur River.
- F.M. 1550 may remain in its current alignment west of SH 34.
- East of SH 34, F.M. 1550 may be rerouted northward.
- F.M 2990 west of Ladonia may be closed at the boundary of the site.

County Roads - - Proposed Site

- Approximately 9.5 miles of existing county roads lie within the site.
- County roads would need to be adjusted to maintain access to property.

Existing Utilities - - Proposed Site

- No major gas, oil or electrical transmission facilities are within the site.
- As required, water, telephone and electrical distribution lines within the site would be relocated to maintain service to users.

Structures - - Proposed Site

- An estimated 110 building structures lie within the projected lake boundary.
- Existing structures include houses (both abandoned and inhabited), barns, silos and other out-buildings.
- ~~16~~ residences verified by Emergency Response Services (911) appear to be within the site.

Oil and Gas Production - - Proposed Site

- No known oil and gas production within the site.

Water Wells - - Proposed Site

- No known registered wells within the site.
- Several unregistered wells, either producing or abandoned, are located at home sites.

Cemeteries - - Proposed Site

- ~~All known~~ 10 cemeteries appear to be ~~outside~~ inside the proposed boundaries of the lake.
- Further search will need to be conducted to locate abandoned and private cemeteries, if any.

Carol Weiss
8200 Fm 68
Wolfe City, Tx
75496

MCKINNEY TX
MAR 8 2006
USPS

FIRST-CLASS

The Office of the Chief Clerk
MC 105
TCEQ
P.O. Box 13087
Austin, Texas 78711-3087

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78711#3087 B012

TEXAS
COMMISSION
ON ENVIRONMENTAL
QUALITY

2006 MAR -9 PM 2:21

CHIEF CLERKS OFFICE

March 8, 2006

OPA

MAR 10 2006

BY

The Office of the Chief Clerk
MC 105
TCEQ
P.O. Box 13087
Austin, Texas 78711-3087

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Phone: 903-496-7619

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The Negative Effects of This Project on My Interests That are Not Common to the General Public:

1. Taxing District Boundaries: The boundaries of the taxing district created by the new Water District are too narrow. The multiple and numerous users of the lake/reservoir benefit, the general public, will not bear the costs, through taxes, of its various upkeep issues. The very narrowly defined proposed District targets those remaining landowners who unfortunately, after partial loss of family land/total loss of family business, continue to hold some ownership. The taxing boundaries must be expanded to include the larger group of users; otherwise, it becomes an inequitable and onerous tax placed squarely upon the backs of those citizens who have given up so much for this development project.

2. Financial Hardships Created by Required Environmental Regulation Upgrades: One of the hidden financial costs of this project on the remaining homeowners within the newly proposed Water District is the homeowner's forced upgrade of currently "at standard" wastewater and septic systems. These regulations are correctly in place to protect the reservoir water source from pollutants; however, the onerous cost of these upgrades should not be bourn by the homeowner who happens to fall within the new District boundaries. Protecting the reservoir from pollutants is a benefit shared by the general public user and not solely for the benefit of the affected homeowner. In any other circumstance, when the governmental body changes zoning or Code standards for the benefit of the general public, the current residents are "grandfathered in" and all future development is effected so as not to cause undue financial hardship on the current

residents. In this case, such "grandfathering" cannot occur. Therefore, to protect the "in District" current homeowners from such lopsided harm, the developer (a for-profit deep-pocket enterprise) should bear these costs as part of the entire project budget.

3. Property/Business Valuation Concerns: The tactics used by the UTRWD representatives at the initial meetings in Ladonia, Texas were abhorrent and unethical. Due to the certainty of the project, we were encouraged to sell out to them ASAP because their budget allocated only a certain amount of money to land purchase costs. The landowner holdouts could not be guaranteed fair market value if the UTRWD budget was overly reduced by the prior land purchase costs, because they only have so much to spend. If I chose to holdout, they would eventually get my land, its just a matter of what loss I was willing to take. Additionally, we were told that if we legally challenged their valuations, they would allocate their additional legal costs to the land purchase budget whereby constricting the budget even further. These are veiled threats. These tactics are not indicative of an impending arms length valuation process. In any arms length buy-sell transaction, the public at large would not be subject to such tactics. My legal right is fair market value. My true concern is just how far this group of unethical businessmen is willing to go to cause the appraisers to "fairly" undervalue my property.

To close, I don't know if this reservoir is a good idea or not. What I do know is that the strong-arm tactics used by the UTRWD have clouded the entire issue. The State of Texas, through its various agencies, has a responsibility to protect its citizens from such abuse. Therefore, I am contesting the project permitting and asking for more consideration relating to the necessity of the project as well asking the State to take a closer look at the business dealings of the Upper Trinity Regional Water District.

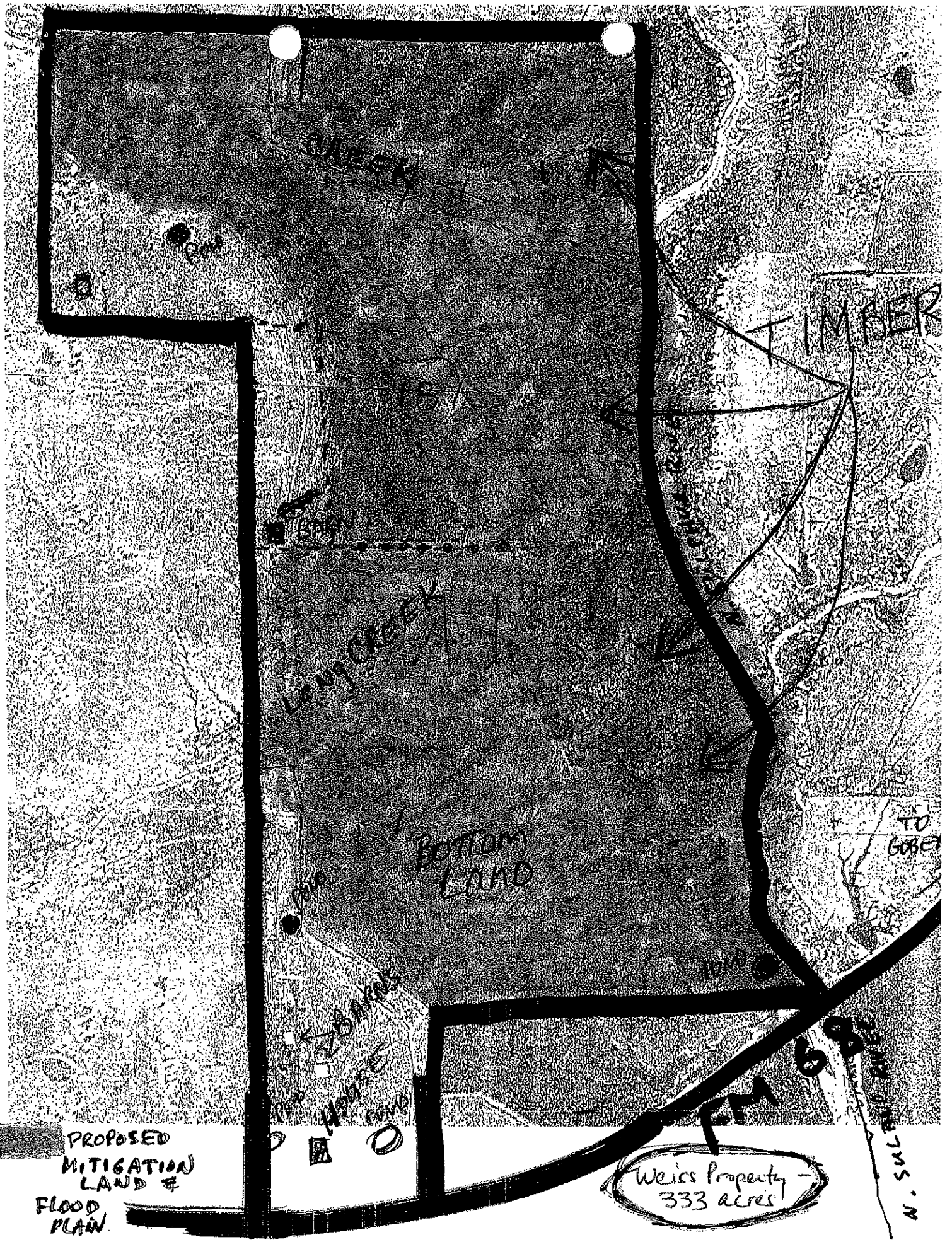
Thank you for your time and consideration.

Sincerely,

Carol Weiss

Carol Weiss

Copy Fed Ex to The Office of the Chief Clerk
Building F 1st Floor
12100 Parks 35 Circle
Austin, Texas 78753
March 8, 2006

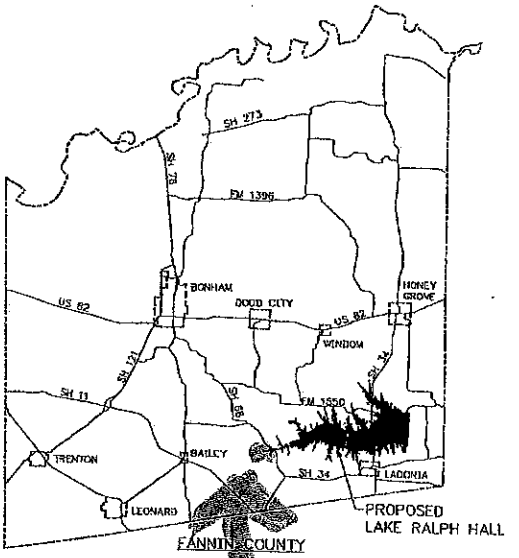

CREEK
TIMBER
BOTTOM LAND
TO GOBER
FM 69
N. SULPHUR RIVER
Weiss Property - 333 acres
PROPOSED MITIGATION LAND & FLOOD PLAIN

UPPER TRINITY
REGIONAL WATER DISTRICT
P.O. Drawer 305
Lewisville, Texas 75067
(972) 219-1228

FACT SHEET
LAKE RALPH HALL

LOCATION - - PROPOSED SITE

The site of proposed Lake Ralph Hall is on the North Sulphur River in southeast Fannin County near the Town of Ladonia. The proposed lake would create an impoundment of approximately 180,000 acre-feet. The proposed lake site would comprise approximately 11,200 acres. The proposed lake will yield approximately 35,000 acre-feet of water per year on a dependable basis.



Current Land Use - - Proposed Site

- Approximately 25 percent is wooded (not bottomland hardwoods).
- Approximately 75 percent is farmland/rangeland.

not flood plain land + mitigated properties
flood plain is 10 ft ↑ or 100 yds out

See attached large map

State Highways - - Proposed Site

- Approximately 7.6 miles of State Highways lie within the site.
- State Highway 34 would be elevated above the lake, probably along its current alignment.
- State Highway 68 may require a minor adjustment of the bridge at the North Sulphur River.
- F.M. 1550 may remain in its current alignment west of SH 34.
- East of SH 34, F.M. 1550 may be rerouted northward.
- F.M 2990 west of Ladonia may be closed at the boundary of the site.

County Roads - - Proposed Site

- Approximately 9.5 miles of existing county roads lie within the site.
- County roads would need to be adjusted to maintain access to property.

Existing Utilities - - Proposed Site

- No major gas, oil or electrical transmission facilities are within the site.
- As required, water, telephone and electrical distribution lines within the site would be relocated to maintain service to users.

Structures - - Proposed Site

- An estimated 110 building structures lie within the projected lake boundary.
- Existing structures include houses (both abandoned and inhabited), barns, silos and other out-buildings.
- ~~16~~ residences verified by Emergency Response Services (911) appear to be within the site.

Oil and Gas Production - - Proposed Site

- No known oil and gas production within the site.

Water Wells - - Proposed Site

- No known registered wells within the site.
- Several unregistered wells, either producing or abandoned, are located at home sites.

Cemeteries - - Proposed Site

- ~~All known~~ 10 cemeteries appear to be ~~outside~~ inside the proposed boundaries of the lake.
- Further search will need to be conducted to locate abandoned and private cemeteries, if any.

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TEXAS
COMMISSION
ON ENVIRONMENTAL
QUALITY

2006 MAR 13 PM 3:03
CHIEF CLERKS OFFICE

This is a formal request to contest the granting of a permit by the Texas Commission on Environmental Quality to the Upper Trinity Water District. This request is in regards to the acquisition of private land for the creation of Lake Ralph Hall.

Permit application #5821

WR/43832

HR OPA
MAR 14 2006
BY

To Whom It May Concern:

We request a contested case hearing. This request is made on behalf of the Woodson's and the Woodson Hereford Ranch.

It has become in our best interest to contest the unconstitutional stealing of our land by private entities named above. It is our belief that the desire to build this lake by the Upper Trinity Water District is based more on financial gains than a genuine concern for urban water needs. That being said, it is truly discerning to us that the value being placed on our land we cherish so much can be thought so little. Is it not a slap in the face to all landowners involved that this lake is even being considered in Fannin County. There is indeed river and creek basins that can be utilized for the creation of a lake much closer to where the water is truly needed. The only reason this is not considered is because of the affordability of those land basins. To us it is an insult that a value can be placed so short-handedly on our most prized possession. **OUR LAND**. $2000 an acre or $10,000 an acre, it is not enough.

The Woodson Hereford Ranch has been in operation since 1959. The Woodson's have been living in the Sulphur River Basin since the early 1900's. We are proud of our accomplishments that have been made through much sweat and hard work. Does this concern the Upper Trinity Water District? We don't believe it does. It should. Can they afford to build the lake closer to the Dallas Metroplex? We don't believe they can. The push for our land is aggressive for that fact. The Upper Trinity Water District is trying at all cost of morality to acquire our land, now rather than later, because they know in 10 years they will not be able to afford it. We say they can't afford it now because the value we place on our land is not afforded by any entity.

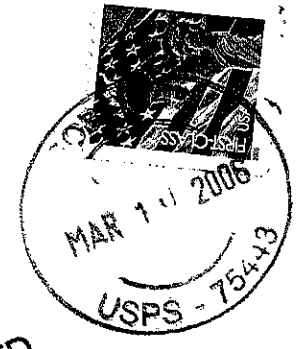
We implore on all involved to see the other sides, not just their own. A truly unique and beautiful place will be forever altered if permission is given for Lake Ralph Hall. At what cost. A greener landscape for people who don't value their natural resources as highly as they should? Please say no.

Sincerely,

Woodson Hereford Ranch

Annie F. Woodson

Annie F. Woodson
P.O. Box 75
Hobar, TX 75443



The Office of the Chief Clerk
MC 105
TCEQ
P.O. Box 13087
Austin, TX 78711-3087

RECEIVED
MAR 13 2006
TCEQ MAIL CENTER

78711-3087-87 B012

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Permit application #5821

HR OPA

MAR 14 2006

BY DM

WR 43832

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TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

2006 MAR 13 PM 3:16

CHIEF CLERKS OFFICE

Sincerely,

Woodson Hereford Ranch
Larry Woodson – Owner
5995 F.M. 68
Wolfe City, TX 75496

Larry Woodson
5995 FM 68
Wolfe City, TX 75496

NORTH TEXAS P&DC
TX 750 5 T
11 MAR 2006 PM

FIRST-CLASS

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