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Sabine Basin Currents

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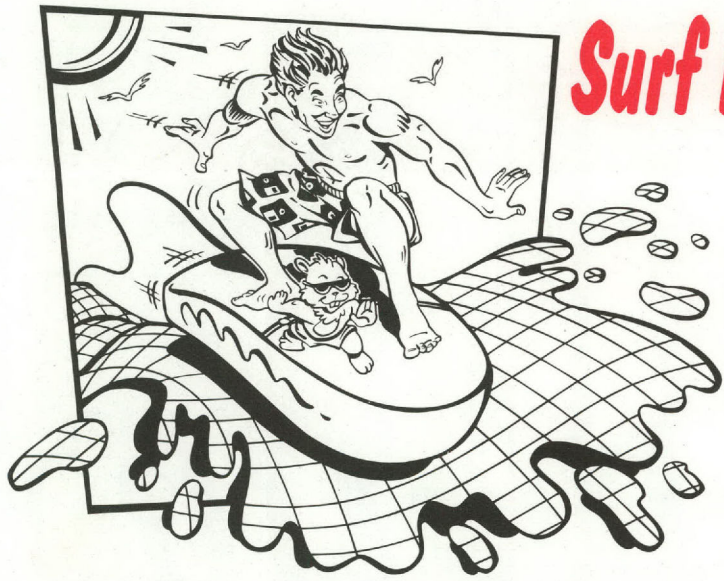
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A Newsletter on Water Quality Issues - Vol. II, No. 1 - March 1997

Surf <http://www.sra.dst.tx.us/>



Have you checked out our website lately? As part of our efforts in the Texas Clean Rivers Program, water quality data for the Sabine Basin is now available on the Sabine River Authority (SRA) Internet Website (<http://www.sra.dst.tx.us/>).

New data is added to the SRA Website as it becomes available from Environmental Services Division (ESD), the Texas Natural Resource Conservation Commission (TNRCC), the U. S. Geological Survey (USGS), and other sources. The Internet allows for great flexibility in providing data and information in formats that can meet the individual needs of each interested party. The data can be retrieved by reach, by subwatershed, or by station. The data can also be retrieved by different parameter groups such as:

- Field Parameters
- Nutrients
- Inorganic Salts
- Total Metals in Water (common metals)
- Total Metals in Water (trace metals)
- Dissolved Metals in Water (trace metals)
- Sediment Metals

The data include all of the water quality parameters which are collected each month as part of the SRA Water Quality Monitoring Program (WQMP). A statistical summary is also given for each parameter by year. The WQMP is part of the integrated and systematic approach the SRA has developed to protect the water resources in the Sabine Basin. The SRA WQMP and the SRA Subwatershed Screening Studies, developed through the Texas Clean

Rivers Program, have been coordinated with other agencies as well to reduce duplication of effort and provide the most effective coverage of water quality monitoring for the Sabine Basin.

The SRA Subwatershed Screening Program complements the existing WQMP by providing information on the many subwatersheds not covered by WQMP. The Subwatershed Screening program utilizes biological screening studies in combination with routine physical and chemical parameters to provide data on the health of aquatic life and long range water quality protection. These monitoring programs have been augmented by the development of a subwatershed inventory of all available water quality information for each subwatershed in the Sabine Basin. The Subwatershed Inventory can also be obtained through the SRA Homepage. As with the water quality data, the Subwatershed Inventory is updated as new information is acquired. Results from the SRA Subwatershed

Screening studies can be found in the 1996 Regional Assessment of Water Quality, which is also available on the SRA Website.

The goal of the SRA Homepage is to allow all interested parties easy access to all information available on issues which affect the Sabine River Watershed. The SRA has an approved Quality Assurance Project Plan for the Sabine Basin which means that data and information produced under this plan will be utilized by the TNRCC in its management functions such as establishment and revision of stream standards, wastewater permitting, etc. Those entities or companies collecting water quality information which they would like included under the umbrella of the SRA's Quality Assurance Project Plan can contact SRA to begin this process.

If you have any questions or comments concerning data or other water quality information, please contact us. We need your input in order to make this truly an effective tool for all of us to utilize in protecting and improving our Sabine Basin water resources. ★



If You See A Pollution Spill...

Investigation of pollution events are among the special studies conducted by the Environmental Service Division's Upper Basin and Lower Basin Field Offices. These are the complaints, spills, and fish kills that are investigated from time to time in the Sabine River Basin. We respond to these events to learn their causes and to keep records of their spatial distribution in the basin. Fish kill response is especially important because, while some are natural events, others are red flags indicating repairable water quality problems. When spills occur SRA responds to them as quickly as possible.

Typically the first notification is a phone call from the party responsible for the spill, a

regulatory agency, or perhaps from a concerned citizen. When we are notified we try to learn as much as we can before we leave the office to investigate. We need to know:

- the location,
- the nature of the substance spilled,
- the stream or streams that are affected,
- and if the proper regulatory authorities have been notified.

It is especially important to know if a downstream drinking water supply could be affected. The proper regulatory authorities will then be contacted to coordinate a response to the situation. We will also notify anyone with a raw water intake in the area to apprise them of the circumstances.

SRA personnel then go to the site to document the exact location, extent, cause, and cleanup methodology of the spill. The SRA is not a regulatory agency and therefore does not write citations or instruct the responsible parties on how to proceed with the cleanup. Regulatory agencies rarely assess fines unless cleanup response is poor, or if the spill resulted from chronic negligence. Spill cleanup can cut deeply into a company's annual profit margin so

preventative measures are generally taken to prevent them.

The nature of the substance spilled dictates the procedure used for cleanup. Oil or petroleum products usually involve under-flow dams placed

in creeks to hold back the surface
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TESTING

CORNER

Ion Chromatography

Salts or dissolved solids make up one of the main group of substances found in natural waters. The identification of the individual components of the salts is desirable to characterize and/or assess the need for a specific treatment. Several methodologies are available for determining individual ions which form salts, but ion chromatography provides a single instrumental technique for measuring several different components in a single test.

The ion chromatograph (IC) used in the SRA laboratory identifies anions and determines the amounts that are present. Anions are the negatively charged component in salts. The anions currently measured using ion chromatography include bromide, fluoride, chloride, sulfate, orthophosphate, and nitrate plus nitrite. Other anions will be able to be measured in the future.

The IC functions by passing a water sample through a column of charged particles which attract the anions. Each type of anion has a different amount of attraction to the charged particles which allows them to be separated from the other anions. Once the anions are separated into the different types the amount of each type can then be measured.

The IC allows for a group of parameters to be measured in a single test which minimizes the time required for the analysis and consequently makes the group of parameters much more economical to run. The instrument is also able to measure these components at much lower levels than the individual tests traditionally used to analyze each anion. ☆



Planning For The Future

The Sabine River Authority Board of Directors in October of 1996 approved the preparation of a Comprehensive Sabine Watershed Management Plan (CSWMP) for the Sabine River Basin, Texas.

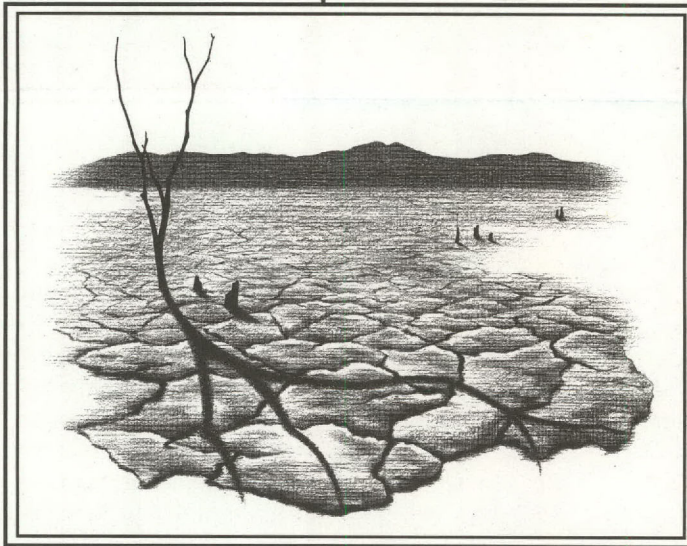
This two year study is being undertaken with funding assistance from the Texas Water Development Board (TWDB). We believe this Study is timely and will develop the kind of local and regional water management plans for the Sabine Watershed that are necessary in order to meet future needs in the Sabine Basin.

The CSWMP will be comprehensive in nature and includes water quantity and quality information, groundwater resources, water rights, surface water development, population and water use projections, water treatment system needs, wastewater treatment system needs, water conservation, mineral resources evaluation, environmental considerations, lake sedimentation, aquifer storage and recovery, information resource issues (GIS and the Internet), and surface water projects issues. A strong public participation program will also be included.

The need for this Comprehensive Management

Plan was prompted by circumstances which have occurred particularly concerning water supply in the upper Sabine Basin since the "1985 Update of the Master Plan for the Sabine Basin." The U.S. Fish and

Wildlife Service (FWS) execution of a conservation easement with a hunting and fishing club on bottomland hardwoods within the Waters Bluff Reservoir site has prevented development of the proposed Reservoir to meet the growing water supply needs in the upper Sabine Basin. Despite considerable effort by the Sabine River



Authority and others, this issue remains unresolved and similar conservation easements represent potential conflicts with any East Texas reservoir project and many other public-purpose projects.

Future planning efforts being developed in the Comprehensive Management Plan are taking a holistic approach to groundwater and surface water resources throughout the Sabine Basin. This approach will evaluate all potential projects and allow the need for these projects to be based on a comprehensive evaluation of all key water management options. ★

If You See A Pollution Spill. . . *Continued from page 2*

oil and allow water to flow underneath. Absorbent floats and vacuum trucks are then used to remove the oil. SRA personnel talk to the responsible parties on the scene and determine the latitude and longitude of the spill site. This locational information will be used in the SRA Geographical Information System (GIS) to track sites and events which may affect water quality. In most cases, cleanup efforts are thorough and SRA personnel make observations and keep downstream water users informed of progress. In some instances, additional containment measures or additional cleanup may be requested by SRA. Spills of oil and salt water associated with drilling operations are the most common types but other spills observed have included diesel fuel, hydraulic fluid, milk, sludge, and drilling mud. All of these substances are foreign to natural conditions and negatively impact water quality and biological habitat.

If you see a spill in progress, note the exact location and notify the Sabine River Authority, TNRCC, the Railroad Commission, Texas Parks and Wildlife, or call local law enforcement officials. They will know what agencies to notify for spill response. You will be doing yourself and the responsible party a favor. Quick response costs less and we all have a vested interest in our ecology. ★



Dear Mr. Water Wizard:

I recently read an article about water quality which mentioned fecal coliform. I thought that fecal coliform was involved with food poisoning. What is fecal coliform and what is its role in water quality?

Sincerely, Concerned & Confused

Dear Concerned & Confused:

Fecal coliform has been associated with some food contamination problems, but it is also a water quality concern. Fecal coliform refers to a group of bacteria found in the digestive tract of warm-blooded animals. Normally these bacteria do not cause any problems and are considered beneficial to the animal host. Sometimes mutations occur which cause the bacteria to become pathogenic or disease causing. Other problems occur when the bacteria are adapted to one host such as cattle and are ingested in another host such as a human. The symptoms are diarrhea and vomiting which can be fatal to very young and very old people or people with serious health conditions.

Fecal coliform bacteria are used as indicator organisms

in water quality tests. These organisms cannot survive for long periods of time outside of a host animal (approximately two days). It is this factor which allows

them to be used as indicators of pollution. It would be very difficult to test for the hundreds of pathogenic organisms which can be found in polluted waters. The test for fecal coliform bacteria is a relatively easy method for determining the presence of sewage contamination. The results of the test must be interpreted carefully since the fecal coliform bacteria can come from any warm-blooded animals and not necessarily from sewage.

The Texas Surface Water Quality Standards require that waters used for contact recreation, such as swimming, must not have more than 200 colonies of fecal coliform bacteria per 100 milliliters (mL) (approximately 4 ounces) of water.

Drinking water should be free from any coliform bacteria. It is very important to test well water on a regular basis to ensure it is free from bacterial contamination. Anyone interested in further information on drinking water testing should contact the Environmental Services Division at (409) 746-3284.

Sincerely, Mr. Water Wizard ★



Sabine Basin Currents is published by the Sabine River Authority of Texas. This newsletter is produced to keep interested citizens aware of water quality issues and activities in the Basin. This publication is prepared in cooperation with Texas Natural Resource Conservation Commission under the authorization of the Texas Clean Rivers Program.



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