

Watershed Services

PRIVATE MONITORING SERVICES AND INFORMATION

SERVICES	AMOUNT	TIME	ESTIMATED COST
Staff time: Two individuals to prepare, conduct site parameters, compile, and communicate results	\$75/hour		~\$500
Equipment maintenance fee			\$20
Staff travel from San Marcos, Texas	\$0.58/mile		
Laboratory fees: NELAP accredited laboratory costs for two locations			~\$400
*Total per sampling event Note: additional sites would increase total bill			~\$1000

*It is recommended that sampling is conducted 6-12 months to best characterize the stream and provide baseline data (a record of normal conditions). Developing a baseline to compare with future measurements is a basic goal of water quality testing as it allows for identification of abnormalities outside of a water body's normal conditions.

Procedure:

Within four hours of sampling, grab samples will be stored on ice and transferred using a documented *chain of custody* to the laboratory of either the Guadalupe-Blanco River Authority in Seguin or the Edwards Aquifer Research & Data Center in San Marcos. These NELAP accredited laboratories will conduct analysis on samples to determine *E. coli*, carbonaceous biochemical oxygen demand, ammonia, nitrate+nitrite as nitrogen, total phosphorus, and total kjeldahl nitrogen.

Parameters Tested:

- *E. coli*: Used as an indicator of the degree of pathogens in a water body. *E. coli* at high levels poses a possible human health risk for primary contact recreation. Sources may include inadequately treated sewage, improperly managed animal waste from livestock, pets in urban areas, aquatic birds and mammals, and failing septic systems.
- Carbonaceous Biochemical Oxygen Demand (CBOD): CBOD is a method used to measure organic pollution in a water body by looking at the rate of depletion of dissolved oxygen as microorganisms metabolize organic pollutants. Sources of CBOD may include pollutants carried by stormwater runoff, discharge from wastewater treatment plants, dead plants and animals, leaves and woody debris, and failing septic systems.
- Ammonia: Ammonia at high levels can cause toxic buildup in the internal tissues and blood of aquatic animals, resulting in permanent damage or even death. Sources of ammonia in an aquatic environment may include atmospheric deposition, municipal effluent discharges, nitrogenous animal waste, runoff from agricultural lands, releases of ammonia-rich fertilizer during transport, and improper disposal of household ammonia products.
- Nitrate+Nitrite as Nitrogen: Excess nitrates can cause hypoxia (low dissolved oxygen) and can become toxic to warm-blooded animals at higher concentrations under certain conditions. Sources of nitrates may include wastewater treatment plants, runoff from fertilized lawns and cropland, failing septic systems, runoff from animal manure storage areas, and industrial discharges that contain corrosion inhibitors.
- Total Phosphorous: Phosphorous in excess can induce eutrophication (nutrient over-enrichment), which will deplete oxygen in a water body and harm aquatic life. Phosphorus inputs into a water body may be caused by the weathering of soils and rocks, discharge from wastewater treatment plants, excessive fertilizer use, failing septic systems, livestock and pet waste, disturbed land areas, drained wetlands, and some commercial cleaning products.

Results:

The estimated return time for results is approximately four to six weeks. Reports of analysis are generated by the laboratory and are interpreted by The Meadows Center staff. The quality assurance program of the laboratories ensure that data produced is scientifically sound, legally defensible, and of known documentable and verifiable quality.

For questions or to schedule an appointment, please call 512-245-1346.



THE MEADOWS CENTER
FOR WATER AND THE ENVIRONMENT
TEXAS STATE UNIVERSITY