TACA
TEXAS AGGREGATES & CONCRETE ASSOCIATION

Texas aggregate producers are working harder than ever to continuously find less intrusive, more efficient and cost-effective techniques to **conserve and protect** water resources.

How do Texas quarry operators manage precious water resources as they deliver the materials Texas needs to grow and thrive?

As aggregate producers supply the 55 pounds of aggregates that every Texan consumes daily, the industry remains keenly focused on conserving and protecting the state's natural resources, including water. Aggregate materials are the building blocks of our infrastructure and are used in nearly all residential, commercial and industrial construction, such as roads, bridges, schools, homes and hospitals.

As the industry works to meet the state's ever-increasing demand for these materials, some misconceptions have developed about the industry's use of water. Here are the facts.

Water is carefully managed by aggregate operators

Aggregate producers understand the importance of optimizing the precious resource of water – for both the environment and the bottom line. As Texas communities continue to grow at a record-setting pace, the aggregates industry has acted to responsibly reuse and recycle water. As a result, the quantity of water available in a watershed is not significantly impacted by aggregate operations.

Aggregate water management programs ensure the responsible use of water and comply with many legal requirements. Water is used for two primary purposes – for aggregate washing and/or separation and for dust suppression to control emissions. Most of the water used by an aggregate operation is recirculated, with the actual amount of water consumed remaining relatively small.

Aggregate washing – Washing of aggregates is an essential processing step to remove fine inert mineral particles, such as silt and clay that are naturally contained in the limestone, sand and gravel deposits. The washing process allows the aggregate to obtain sufficient adhesion for use in producing concrete and asphalt. This also helps to separate the different product gradations of stone, sand and gravel. Aggregate wash facilities are typically designed for water recycling with the use of a closed-loop water recycle system. As a result, only about 2 to 8 percent of water used during the aggregate washing process is consumed. Furthermore, no additives are introduced into the fresh or recycled water used for washing that would cause pollution of water supplies or the underlying aquifer.

Dust suppression – Suppressing and controlling dust is required by the facility's air quality permit issued by the Texas Commission on Environmental Quality (TCEQ). To minimize dust emissions, water is sprayed at strategic locations on process equipment, such as conveyor transfer points, stockpiles, internal haul roads and trucks exiting the site. Aggregate producers have developed and implemented best practices for water conservation that are designed to use only the amount of water that is needed to control dust emissions (i.e., particulate matter).

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Quarries use many innovative techniques to conserve and protect water quality

With increasing demand for infrastructure, Texas aggregate producers are working harder than ever to continuously find less intrusive, more efficient and cost-effective techniques to conserve and protect water resources. This includes the use of water recycling systems described above, filter and belt presses, water trucks and other technology. Aggregate producers also have developed best management practices (BMPs) to minimize the potential discharge of pollutants in storm water flows to drainage systems. BMPs are developed based on site-specific and industry standard performance methodology.

Source control BMPs are the most effective means of preventing water pollution and protecting water quality and are designed to prevent or minimize pollutants at a potential source. Baseline BMPs are designed to reduce the possibility of storm water contact with pollution-causing activities and focus on good housekeeping, preventive maintenance, spill prevention and response, employee training, monitoring, inspections and recordkeeping.

Aggregate production operations are highly regulated

Overall, the industry is regulated by as many as 15 different agencies and must comply with a wide variety of laws and mandates, including maintaining TCEQ Air Quality Permits and Aggregate Production Operation registration. The main regulatory agencies responsible for water quality management include:

- The **Environmental Protection Agency's** (EPA) Clean Water Act (CWA) establishes the basic structure for regulating discharges of pollutants into the waters of the United States and regulating quality standards for surface waters. The CWA makes it unlawful to discharge any pollutant from a point source into navigable waters, unless a water discharge permit is obtained. In Texas, this program is delegated to the TCEQ.
  - The **TCEQ** water discharge permitting and enforcement process requires a facility to obtain a permit and authorization for water discharges to waters of the state as mandated under the federal Clean Water Act and applicable Texas rules and regulations. These water discharge permits include conditions and requirements, including water quality monitoring and reporting; and the development and implementation of storm water pollution prevention plans.
  - The **EPA's Oil Pollution Act** (Oil Spill Prevention Program) requires the development and implementation of a Spill Prevention and Countermeasure (SPCC) plan for certain facilities that store and use a specified amount of fuel and oil to prevent, prepare for and respond to oil spills that occur in and around inland waters of the United States. The SPCC rule helps to prevent a discharge of oil into waters of the U.S. or adjoining land surfaces.
  - In Texas, TCEQ is the lead agency in spill response. The **Texas Water Code** requires that a spill must be reported as soon as possible and within 24 hours by phone to the TCEQ for a reportable quantity to surface ground and state waters. The rule sets forth requirements for spill response and follow-up reports.
  - For quarry operations under the jurisdiction of a local water regulating authority, such as the **Edwards Aquifer Authority** or a groundwater conservation district, the operator must obtain authorization for water withdrawals from the regulated water source; and report the water withdrawals to these authorities as required by their rules, regulations and permits. In addition, these water authorities may also require registration and special operating conditions for fuel tanks and other regulated activities to ensure protection of the underlying aquifer.
  - TCEQ Edwards Aquifer **Water Pollution Abatement Plans** (WPAP) are required for certain facilities on the Edwards Aquifer recharge zone and specific portions of the contributing zone and set forth a rigorous process to assess the site conditions and ensure the protection and preservation of the Aquifer's groundwater.

Quarries can be reclaimed as vital community resources

Quarry operations in Texas typically have a life span of 30 to 100 years, after which aggregate operations work closely with the community to reflect local needs and interests. Retired rock quarries can become tremendous and enduring assets to a community. For example, because building and maintaining a water reservoir is extremely costly, the untapped potential of old quarries to store water and recharge an aquifer can be a viable and cost-effective solution that would greatly benefit a community and watershed. Post-mined quarries can also be turned back to landowners for agricultural use, or turned into publicly accessible community and recreational uses, such as golf courses or parks. Reclaimed quarries in San Antonio, Texas are excellent examples that showcase how the mining industry adapts to make life better for the community, including Six Flags Fiesta Texas, the La Cantera Hill Country Resort, the Shops at La Cantera, the San Antonio Botanical Gardens and Morgan's Wonderland in San Antonio.

Quarry operators institute many best practices to help preserve water, including:

- **Tracking water usage** through metering at different parts where the pumping is taking place, so operators have a good understanding of how much water is being used on site
- **Operating and maintaining** water-handling equipment
- **Conducting training** and **awareness programs** on site

About the Texas Aggregates & Concrete Association

The Texas Aggregates & Concrete Association (TACA) is the main resource for the aggregate, concrete, cement and other associated industries in Texas. The association represents its member companies by providing industry information to the public, media, policymakers and regulators; advocating for industry issues; ensuring member companies commit to conducting business with integrity, respect, transparency and honest communication; and creating industry training courses and materials that help members effectively manage their businesses.