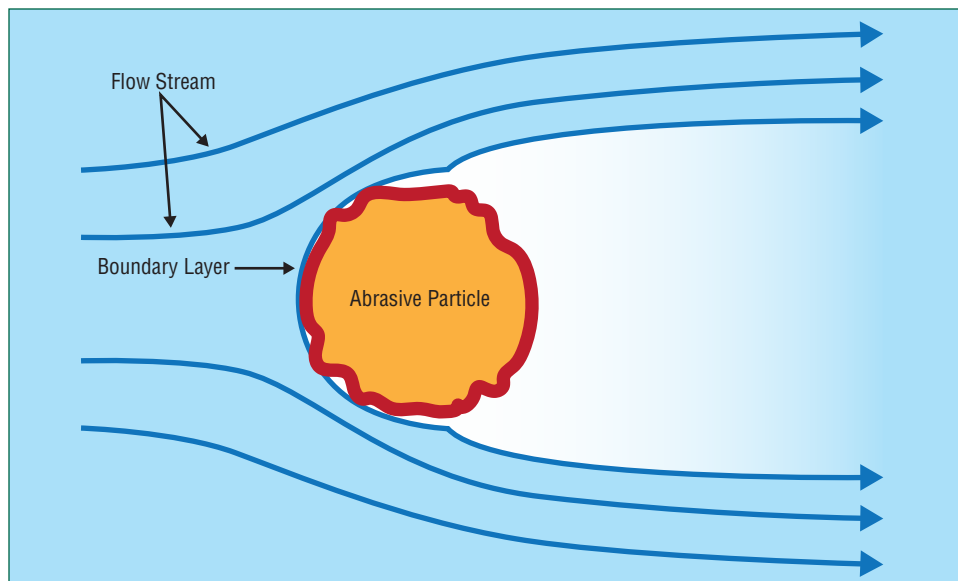


# CASE STUDY

## SWC/Adaptek partnership Pumping Sand and Similar Abrasive Slurries

Abrasives can be natural or precision-manufactured substances. Abrasive sand can be hard, tough and sharp. Although sand and other abrasive slurries can be among the most challenging for reasonable life of almost all pump mechanisms, Adaptek DiscPac™ slurry pumps stand out as the most remarkable exception, providing unparalleled service

life in abrasive slurry applications. Reason being that the Boundary Layer Drag Principle by which the pump operates keeps destructive, abrasive material in slurry isolated vis-a-vis the boundary layer from the critical working pump mechanism.



Consider some abrasive sands and materials in slurry that Adaptek DiscPac™ pumps successfully pump and enjoy long life while avoiding costly repairs and downtime.

**Fine-Grained Quartz** sand (Mohs hardness 7), **Corundum** (Mohs 9), **Artificial Corundum**, **Aluminum Oxide** and **Titanium Dioxide** are common challenges where Adaptek DiscPac™ slurry pumps provide effective solutions.

Polishing Abrasives include **Pumice**, **Feldspar** (Mohs 6), and **Tripoli**, also called rottenstone. Tripoli is microscopic, microcrystalline quartz mined from beds of decomposed limestone.

Microscopic shells of diatoms are known as **Diatomaceous Earth** or **DE**. Diatoms are microscopic skeletons of amorphous silica. The broken edges of crushed diatom shells scratch holes in the hard-outer skins of insects causing their internal fluids to dry out.

OVER →

### About the SWC/Adaptek partnership

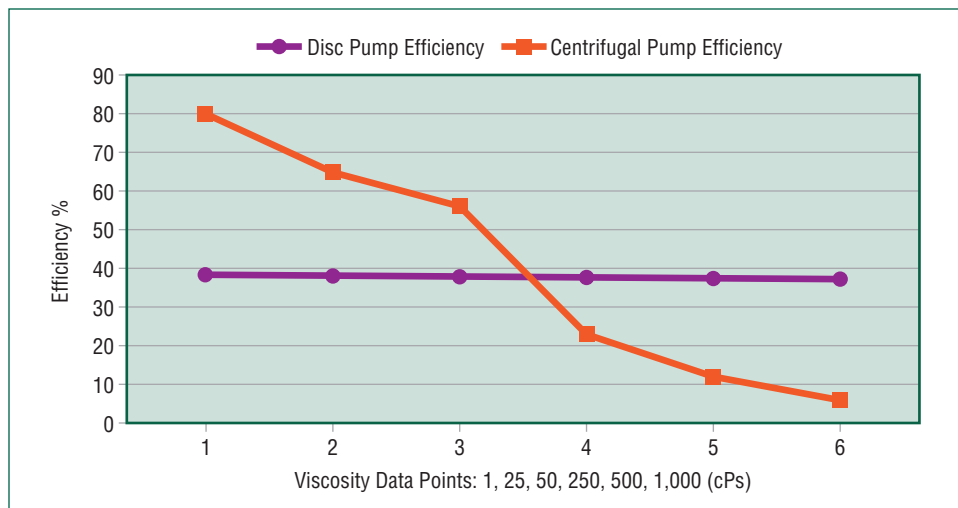
Southwestern Control's partnership with Adaptek goes back many years. Combining our 50+ years of engineering experience with the reliability and industry-best longevity of Adaptek's slurry pumps allows us to provide you with customized solutions to difficult problems and challenges based on your specific requirements. Contact our team about your objectives, and let's get started on your project today.

# CASE STUDY

## SWC/Adaptek partnership Pumping Sand and Similar Abrasive Slurries

Fracking **Proppants** include **Sand, Treated Sand** or **Manufactured Ceramic Materials**, designed to keep a “fracture” clear and free flowing during the fracking process and after. Proppants are added to a fracking fluid which can be a gel or water-based mixture with greatly varying viscosity.

The Adaptek DiscPac™ pump excels with fluctuating viscosity challenges as the DiscPac™ pump remains at constant efficiency regardless of viscosity as compared to a centrifugal pump as illustrated:



Additionally, as abrasion erodes a centrifugal pump impeller, the efficiency of a centrifugal pump erodes accordingly.

**Slickwater (Friction-Reducing) Fracturing Fluids** are mostly water, generally 99% or more by volume, but gel-based fluids may have polymers and surfactants comprising as much as 8 vol%. Other common additives commonly used in fracturing fluids which challenge pump mechanisms include hydrochloric acid, biocides, emulsifiers, and even radioactive tracer isotopes.

Pumps such as **Progressive Cavity Pump Are Often Misapplied** in abrasive fluid handling. Alleged “sealed” solutions often don’t yield any major increase in progressive cavity pump life expectancy when challenged with abrasive fluids. Rather emphasis is placed on:

- a) Having replacement stator and other critical repair parts on hand at time of pump commission and for expected future “quick change” repairs. And...
- b) Recommendations for staging of pumps, materials selection and speed selection that claim to provide maximum pump life but, seldom, if ever are effectively employed to provide any appreciable/measurable pump life extension.

Progressive Cavity, Centrifugal and Peristaltic Pumps are three types of pumps that suffer aggravating, regular or even catastrophic downtime failures when pumping sand and other abrasive slurries. Contact us to explore how an Adaptek DiscPac™ pump can provide trouble free operation with sand or your other challenging slurry applications.

**For more information, comments or inquiries, please contact:**

Tom Cook, Sales Manager

Cell: 817.845.0084 • [tcook@swcontrols.com](mailto:tcook@swcontrols.com)

STLE Certified OMA I, CLS, IADC, & Produced Water Society Member

8808 Sovereign Row • Dallas, Texas 75247-4618 • 214.638.4266

[www.swcontrols.com](http://www.swcontrols.com) • [www.fluidsolutions.net](http://www.fluidsolutions.net)