Reuse Frac water by removing 95%

*Process Plants Corporation* (PPC) is pleased to provide Exploration & Production companies with a simple and extremely effective way to treat Frac water by removing dissolved and suspended solids to a level where the water may be acceptable for re-use.

Where the Marcellus shale is present, the Frac water has similar items found in AMD (acid mine drainage). Our process system has been successful in treating Acid Mine Discharge and removed the same metals that are present in Frac water. Now frac water is getting clean to reuse. At mines we stream discharged.

Our process injects oxygen into the frac water, precipitating metallic salts and sulfates. If your results exceeds 200,000 TDS -retreat with 2nd pass the insoluble contaminants may be removed from the pit water. Frac flow back pit water will be treated using the system to remove all heavy metals (iron (Fe) and aluminum (Al)) and dissolved chemicals (Sulfur).
Our process has been successful in treating Acid Mine Discharge and removed the same metals that are present in WV Category 3 Frac water and Marcellus pit water by 95-96%.

Metals and acid-producing minerals. Marcellus shales are known, in some regions, to contain acid-producing minerals such as pyrite and sulfides.

Due to the high dissolved solids content and presence of various other constituents, disposal of flowback water is becoming very difficult and costly.

Obtaining the needed water to makeup frac water, with subsequent disposal of the flowback water, presents a significant problem for gas production firms. In many areas, the amount of suitable water needed for formulation of frac water is just not available.

The best solution to this combined wastewater disposal and water supply problem is to simply treat and recycle the flowback water, over and over again, as frac water.

In many areas of the state where the Marcellus shale is present, the same conditions of acid mine drainage exist from past coal mining activities and the same metals are present in large amounts and is a major water quality problem.

**Statement of Outcomes**

We welcome the opportunity to participate in your frac water treatment and assure you of our full cooperation in your achieving a successful project.

The PPC system has been successful in treating Acid Mine Discharge and removed the same metals that are present in Frac water.

Successful implementation of frac flowback water recycling will minimize water use, water acquisition costs, disposal costs*, and truck traffic.

As outlined in the proposal, the economic recycling of frac flowback water will increase efficiencies in fracture treatment by lowering water acquisition and transportation costs. It will reduce overall truck traffic which in turn will reduce dust which can be a significant impact to local residents. The economic reuse of frac flowback water will also reduce disposal costs which improves the economics of oil exploration which frees up capital to invest in more exploration.

Reuse of frac flowback water will also reduce competition for fresh water resources and/or conserve it for other beneficial uses. Fresh water is critical to energy development and conserving its use is highly desirable and will promote good will with others who rely on fresh water for domestic, agricultural, and other purposes as well as promote the oil and gas industry as good corporate neighbors and citizens.

The reduction in truck traffic will have additional benefits such as reducing the impact caused by dust to livestock that may be in the area and will promote positive relationships with people living and working in the area. Reduced truck traffic will also reduce the risk of transportation related accidents, accidental discharges, as well as wear and tear on highways and local roads.

*1.2 million gallons (28,000 barrels) of water treat between $7 & @ 0.5/per gal treated

What to know? It works to clean, is simple and service affordable
Laboratories said
As an aside, from these results, your treatment significantly reduced the TDS and metals contents of the untreated water and appears to be doing what you were expecting...

Our process will clean contaminants 95% including TDS, Metals and sodium-potassium and 99.05% TSS via sand filter.

Chloride, pH, Sulfate, Total Dissolved Solids, Barium, Calcium, Iron, Magnesium, Manganese, Potassium, Sodium, TSS and Strontium all reduced by 94-97%. Analysis by State Certified Laboratory.