

## H2S Treatment – West Texas



www.clearwaterplasma.com

### Case History

An insight into how CWP's unique hyperoxidation technology was used to treat H2S from Produced water

#### Benefits

- Uses only Electricity
- No chemicals
- No waste stream
- Modular
- High Volume (upto 30 bpm)
- Mobile (Portable or Fixed as needed)
- Low Maintenance
- Easy Operation
- Fast Deployment

#### Capabilities

- Disinfection
- Reduces Scale Formation, Biofilms and Algae
- Eliminates sulfate reducing and acid producing bacteria
- Oxidizes Heavy metals
- Reduces total dissolved solids – converts to TSS
- Eliminates foul odor - H2S, NH3, Mercaptans
- Replenish Dissolved Oxygen
- Organics/BOD/COD reduction

**Clear Water Plasma LLC (CWP)** is an Advanced Oxidation Water Treatment Technology company providing on demand, treatment and reuse of produced and flowback water from Oil & Gas wells. Recently CWP was contracted to treat over 450,000 bbls of complex produced water mixture stored in a large pit in Western Texas. The water in the pit was piped in from various producing wells in the area over last six months and had a foul odor and sludge.

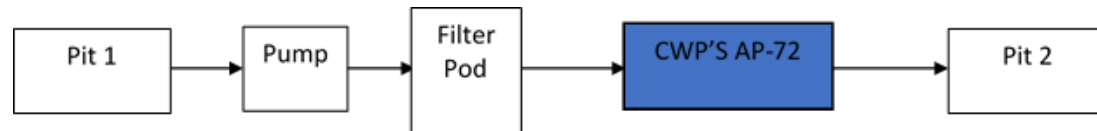


- The aim was to treat the pit to reduce the toxic hydrogen sulfide levels and bring the customer in compliance
- Client also wanted to see if the CWP treated water can be reused for fracking new wells in the area.
- Influent water had high dissolved salt levels and borates and sulfates.

Influent Water characteristics

TDS, mg/l	pH	Total Hardness (mg/l, CaCO <sub>3</sub> )	Total Alkalinity (mg/l, CaCO <sub>3</sub> )	Chloride, mg/l	Borate, mg/l	Sulfate, mg/l
65045	7.62	3453	439	37900	355	760

- The produced and flow back water from the pit was treated using CWP's AP-72 trailer mounted mobile unit and transferred to another fresh water pit which was piped directly to the fracking site



- Hydrogen sulfide was reduced to non-detect levels after CWP treatment
- Water quality improved markedly after the CWP's electro-oxidation treatment (EO)
- Treated brine worked satisfactory with Frac chemicals from leading Frac service provider
- Treated water was reused for fracking new wells in 80:20 with treated : fresh water ratio
- Client satisfied with the results and the performance of the unit
- In addition, CWP's EO treatment kills the sulfate reducing bacteria (SRBs), acid producing bacteria (APBs) and slime forming bacteria
- Causes precipitation of scale causing minerals such as Ba, St, Ca and Mg which can be easily removed by gravity settling or filtration, if needed
- Removes heavy metals such as Iron which are easily oxidized and removed through precipitation, adsorption and filtration, if needed

H2S Before Treatment, mg/l	H2S After Treatment, mg/l
> 200	ND

