Solidification of Gas Well Swabbing Waste

To maintain the flow of gas, wells are periodically subjected to a treatment called “Swabbing.” High pressure brine water is injected into the well to crack and re-open plugged fissures so that the gas flows easily.

Alberta, Canada
September of 2009.

Solidification of Gas Well Swabbing Waste

The swabbing waste liquid is pulled from the well formation into vacuum trucks and then deposited in pits where the solids settle out.
The liquid portion of the waste is decanted from the settled solids and is then injected into defunct wells.

The remaining solids need to be solidified to be taken to a landfill.

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A 2HP Tsunami pump with 4-inch hoses is used to pull the sludge out of the pits towards a waiting truck.

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The treatment system is driven to the job site with a pickup truck on a simple trailer.

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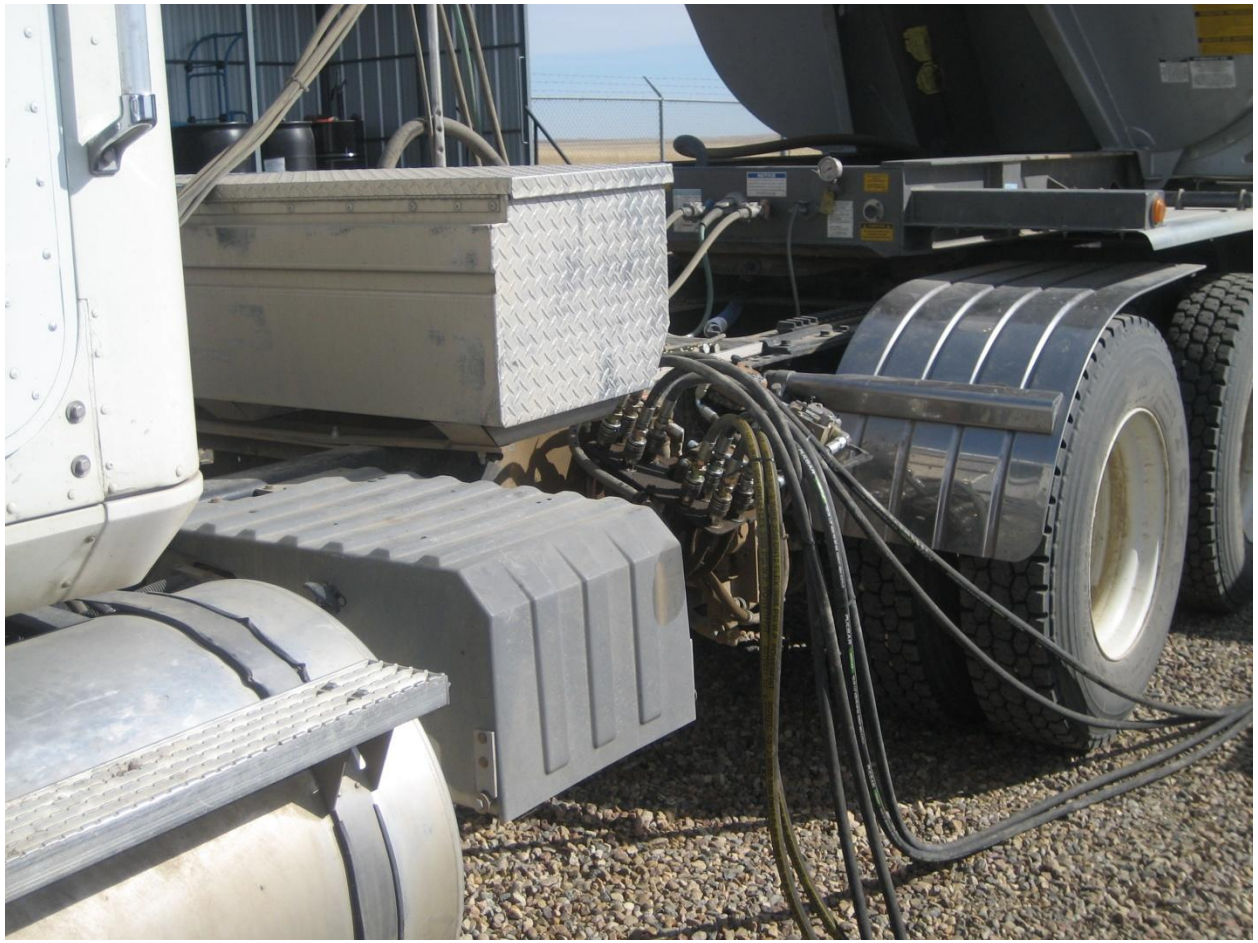

The metering/mixing system is explosion proof and powered by hydraulic lines from the truck.

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The portable mixing rig is driven to the site.

This rig has two sorbent bins that can accommodate a superabsorbent polymer like ***Waste Lock® 770*** and another sorbent like saw dust that can be used as a bulking agent to give the final waste form less of a gelatinous consistency and greater compression strength.

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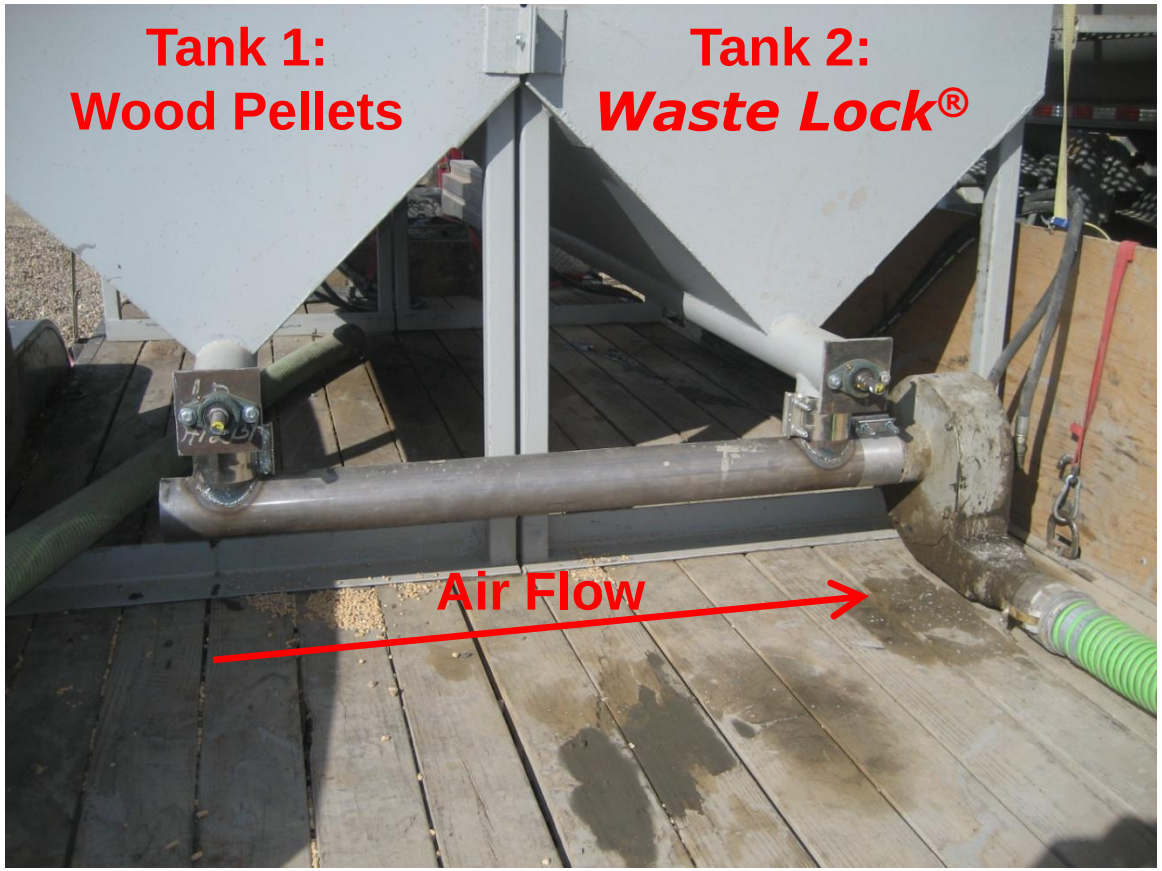

Each sorbent bin has a screw auger on the bottom. This allows for good metering control of each sorbent into the Venturi air flow that transports the dry sorbents to the sludge.

Waste Lock® polymer is added at a ½% rate.

Wood pellets are added at 3% as a bulking agent to give the solidified waste greater compression strength.

Addition rate is visually determined by counting RPMs of each auger screw.

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A second Venturi fan boosts the dry sorbents up into the truck and through the mixing nozzle.

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The sludge is pumped to the top of the truck where the liquid meets the dry sorbent through this L-shaped valve.

The liquid and sorbent mix aggressively and solidification is rapid.

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The water in the sludge is rapidly absorbed and the waste quickly loses flow ability of a liquid.

It forms a solid pile in the truck bed.

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The truck rapidly fills up with stabilized sludge combined with sorbents.

There is no free liquid.

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The final solidified load of 45,000 lbs is ready to go to the landfill.

Total processing time after rig set-up was 40 minutes.

Sorbent used:
Waste Lock® = 300 lb

Wood Pellets = 1400 lbs

For samples or further information contact:

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