

## Words of Wisdom to Avoid Downtime in the Field



### Speaker:

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CEO

# Troubleshooting

This will pertain to recyclers & mud pumps

Some with be equipment specific:

\*Recycler only

\*Mud Pump only

\*or a combination







Sometimes improvisation can be a good thing OR a bad thing. When you are out in the field downtime equals lost revenue.

## Electrical:

Diesel Engine Management Systems and error codes

Remember the electronics on the diesel engines have millivolts

If the voltage cannot connect the brain to the computer “no go”

Periodically pull the engine wiring connectors and clean & apply di-electric grease

These plugs can work loose causing oxidation & failure

Troubleshooting error codes on digital readout

Have the codes ready when you call along with the model of the “engine” and what equipment it is on.

On new equipment the ECU Connector has a locking lever that must be fully engaged for it to run.





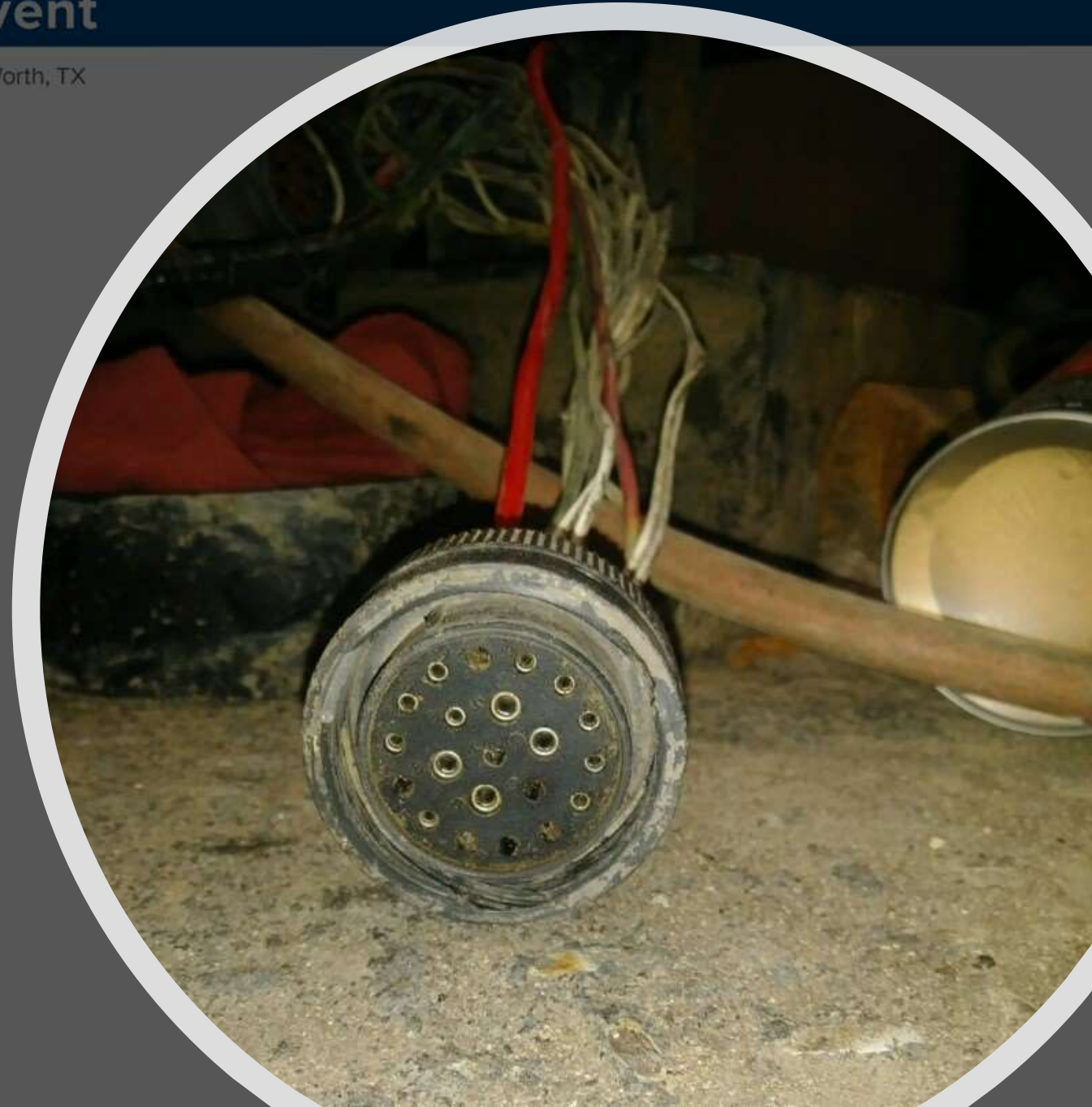
Use your cell phone to take a video or picture of the challenge you are having.  
This allows us to see it too *and* as you know;  
a picture is worth a *thousand* words.

It is also worth mentioning the industry uses different terminology sometimes for an item..  
What do you call this?  
Discharge hose?  
Kelly hose? Hose?  
Vibrator hose?





Electronic Pin Connectors  
can get dirty and lose  
signal. Becoming non-  
operational



You will have 12, 120 & 480 voltage on some/or all of these units.  
Have a multi-tester on location to troubleshoot  
Whenever the generator is running; NEVER reach in the enclosure and touch the bare terminals!

Can you say “graveyard dead?”

Check the Overload Reset “it maybe tripped”

The electrical overload will have a trip switch that can allow you to reset

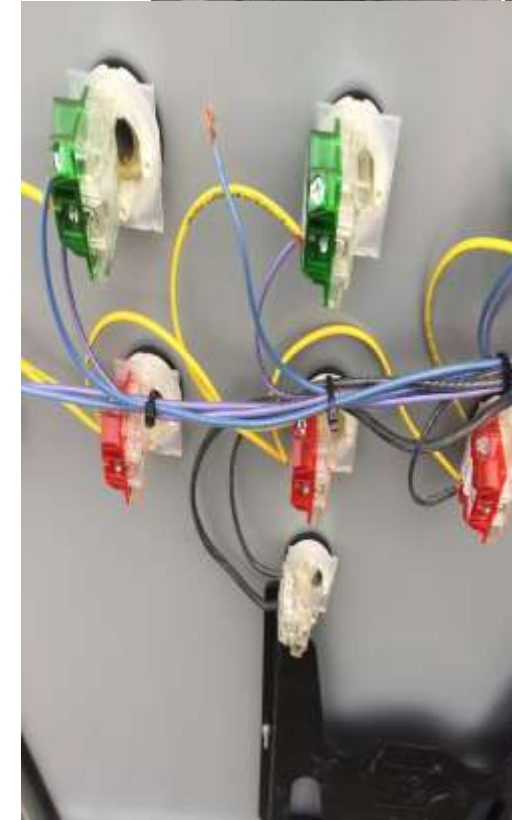
If you open the electric box for any reason...close it when finished  
Moisture & Dirt can do more damage than a “pissed off wife with your credit card”

The electric panel box is **not** a storage compartment

Keep the panel CLEAN and CLOSED.

No gloves or empty coke bottles.

ALWAYS “KILL” the generator prior to opening the electric box when performing maintenance (checking for loose wires, etc.)





## Mechanical

Linear Shakers:

How to tell if your shaker is operating properly?

- Draw a dot on the side of the shaker;

- Does it draw a flower or zigzag line?

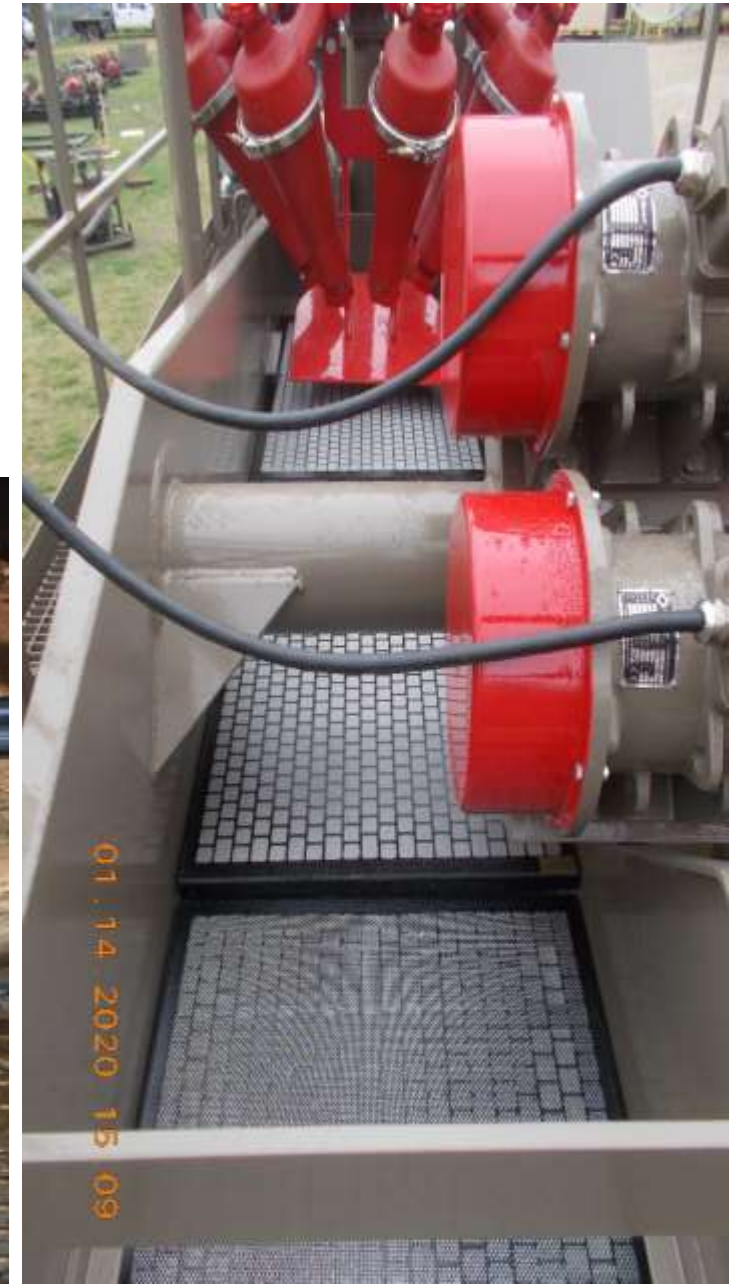
How to check the motors for operation  
are both motors warm?

Pull the end covers and check to make sure the motors are both turning opposite of each other, direction does not matter. Pull the caps on the *opposite* side from the electrical wires so you do not have the counterweights hitting the wires.





Are the solids lining up in rows and marching off the screens?  
The solids should continuously move toward the discharge of the shaker. If the solids move to the back of the shaker or move from side-to-side... You have a shaker problem.



How to tell if the screens are “blinded” and what to do if they are. “Blinding” of the screen is when the solids are the same size as the openings of the screen and plug the openings; effectively turning this screen into a “board”.

Take the screen out, wash it off, hold it up to the sun and look from underneath. Silica sand can be clear almost opaque. You will have to look closely, but if the pores of the screen are plugged, you will need to go up or down in size to prevent this. This picture represents a clear screen that can pass liquid.





Load the finest mesh screen in shaker FIRST  
(closest to fluid inlet)

Solids are electrically charged, give them  
a chance to “find each other” and  
group, maybe they will become large  
enough to “walk over” the larger mesh  
screens and let the liquid pass through.



## Mud Pumps:

- Discharge Hose “jumping” around/  
how to check valves:

Using a solid metal object place on  
the pump and your ear

You will hear “click- click” of  
the springs or a swishing  
sound

- Check liners when you see mud in the  
Rod Wash Box

Turn off the rod wash water  
momentarily and check for mud  
coming out of the pistons.





## Spare Parts

### Recyclers:

- Shur-flex coupling (or the style you require)
- Spare wedges / bolts/ lockdowns
- Spare screens (various mesh sizes, keep the boxes for storage)

### Mud pumps:

- Suction & Discharge valve assemblies
- Valve cap gaskets
- Spare pistons, rubbers, liners and gaskets

### Diesel Engines:

- Filters for all your equipment
- Oil (remember the newer equipment may use something besides gear oil)
- Listen for noises, if you hear a squealing sound or odd noise; identify and prepare for the failure.



# Fed EX & UPS Does not need your money.

Most times it cost more to overnight an item than the item costs  
Also, this does not include lost production due to downtime.



Please know I could not possibly cover all the topics due to time constraints in this presentation.  
We will be available to answer more specific topics after the conclusion if you need help.

We are located at Booth #830

Please stop by or call our office @ (903) 675-3240

**Are there any Questions?**

**Thank you for Attending!**