OilPro Oilfield Production Equipment Ltd.
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Calgary, Alberta
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CANADA

ABOUT XTT

The XTT tank tool is a design for accomplishing total carbon capture. Xtreme Tank Tool holds patents since the 1990's, before Volatile Organic Compounds (VOC's) and Greenhouse Gas (GHG) became common terms. Originally created for a single purpose, it now provides up to three solutions in one tool:

1. Vapour Removal
2. Oil skimming, and
3. Fire Suppression.

All three functions can be retrofitted to API tanks using existing connections or by adapting to containment vaults like Envirovaults or retrofitting standard API manways with new connections.

1. Optimized vapour removal improves revenues and can reduce treater temperatures, improving vapour recovery, and mitigating RVP shipping concerns
2. Oil Skimming ensures only the cleanest oil ships.
3. The Fire Suppression function increases workplace safety and minimizes potential damage to expensive and slow to replace capital equipment.

SOLVE RVP ISSUES

The Patented Xtreme Tank Tool solves RVP (Reid Vapor Pressure) issues. The XTT captures the full spectrum of gasses from the heaviest to the lightest that traditional roof/vapor tower (a.k.a. gas boot) collection do not collect.

By capturing all the gasses a few inches above the oil level, and taking them out of the tank, lowering the RVP.

By handling carbon capture in the "Flash Zone" (where the natural distillation process occurs), we accomplish complete carbon capture.

The XTT tool captures the complete spectrum of gases. Our pressure transmitter reads in the "flash zone", the most volatile area in the tank.

Compared to those that pull from the roof of a tank or the top of a vapor tower, the XTT Tool has proven gains of up to 18% volume of gas drawn off the tank.

Flash Zone Installation:

The tool takes pressure measurements in the flash zone and removes emissions as they occur in the "Flash Zone" of the tank.

DETECT & EXTINGUISH TANK FIRES

This same patented technology, because of where it sits in the "Flash Zone" of the tank, extinguishes tank fires in seconds. This is done automatically using an infrared camera to detect fire. If lightning, static, arson or a mechanical failure cause a fire, the camera will detect this, and cause a programmed release of self-stored fire foam. The fire foam is

released in the tank covering the surface area rapidly. The foam enters the tank internally and is placed in the exact correct spot a few inches above the oil, extinguishing the fire.

The Xtreme Tank Technology tool changes the tank's total atmosphere from flammable to inert.
For periods of maintenance or for approaching storms, we can release nitrogen from the tool in the flash zone a few inches above the oil and purge the tank, changing the atmosphere of the tank.
Aside from aiding total carbon capture, the tool is placed perfectly for use in tank fire extinguishing. The tool may be considered a *type one* fire tool as there is zero splash when fire foam is released. Every gallon sent to the tank ends up inside the tank with no loss from wind carrying fire foam away.
The fire foam never travels through the flame's temperature like it would in foam chambers. The fire foam will be 100% efficient upon arrival at the release point and be un-distorted by fire like it might be with other types of suppression systems placed directly in the fire.
When a tank catches fire, fire detector observes heat and/or flame, sending a signal to a solenoid that opens a valve of stored Compressed Air Foam (CAF) systems. The foam is pneumatically pushed with 450 pounds of nitrogen pressure, sending the fire foam internally inside the tank and releasing the fire foam directly above the tank's liquid.

Fixed roof tank fire protection:

If on a fixed roof the fire foam is released in a 360 degree pattern, 6'' above the hydrocarbon level in the tank.

Floating roof tank fire protection:

In floating roof tanks, the fire foam will be released in the sealed area of the tank, on the underside of the roof thus enabling it to protect the tank seals as well. Protection of the seal means the system can mitigate further flame propagation beyond the seal, further helping with flame containment.
This XTT tool position in floating roof applications will remove the chance of sinking a floating roof because the tool places fire foam under the floating roof and not on top.
In the process, the tool separates fuel from flame in addition to cooling the space with the aid of the fire foam.

Example of a typical 300,000 bbl tank:

Because this tool's design is for carbon capture you would use eight XTT tools to capture vapors under your tank's floating roof on the outside diameter in a vapor space *under* the roof. When a tank fire occurs, the eight tools (which normally remove vapors) will fill with fire foam and release in the tank's seal area.
A typical 4'' XTT tool will handle ~2,500 GPM of finished fire foam for a total flow of 20,000 GPM of finished fire foam. We can provide a video of a fiberglass tank that's burning gasoline and diesel. This tank fire extinguishing test uses 60-80 GPM of finished fire foam and is using a 1'' red industrial hose that can be seen in the video connected to the outside of the tank.

Why XTT is the best way to protect tanks from fire:

Wind will not carry the fire foam away from the tank fire because it is inside the tank. The whole volume of fire foam sent up is directed right where it's required. This contrasts with situations in which the roof is not yet, or only partially blown from tanks where fire departments cannot extinguish tank fires.
Once the XTT tool is installed, the fire department is no longer required to drive close to burning tanks. Instead, teams can extinguish a tank fire from a safe distance. The pipe can be manifolded a safe distance from the tanks and the firemen use this line to inject the fire foam to release it internally.

SOLUTIONS FOR LARGER AND FLOATING ROOFS TANKS

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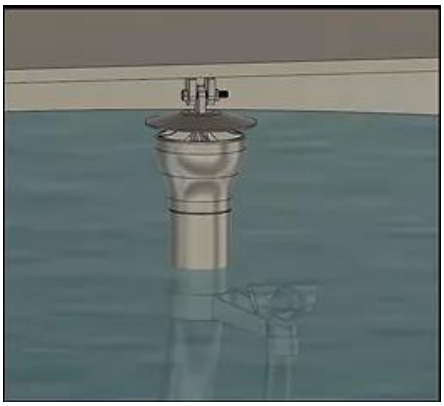

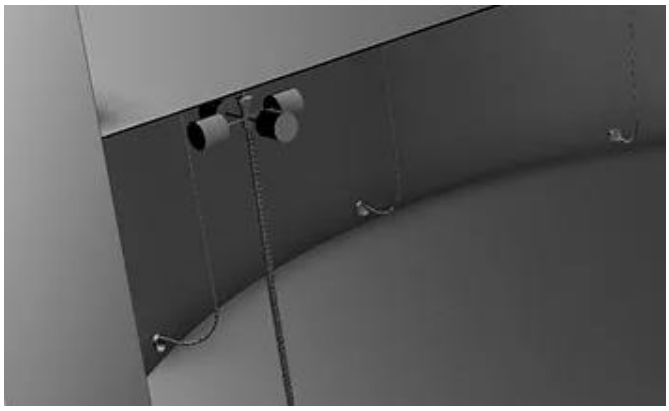

- The patented XTT tool removes vapour *underneath* a floating roof tank.
- Most floating roofs have vapour disengaging space, as roofs typically do not sit directly on the oil. If your FLIR data shows there are tank emissions, we have a retrofit solution that removes gas *before* it escapes from the floating roof seal.
- We place fire foam under the floating roof to separate fuel from flame.
- We protect tank seals by applying foam directly to the seal mitigating fire damage and inevitable breach of the seal by flame in conventional installations.
- The XTT system collects gas *before* volume and pressure build, minimizing chances of roof seal leaks, thus mitigating outcomes.
- Atmospheric vented can be *completely* stopped.

WATER DISPOSAL SOLUTIONS

Saltwater Disposal systems are known for the static charge that builds in these facilities. This is in large part due to such tanks frequently being made of materials which build up static charges, such as Fiberglass Reinforced Plastic (a.k.a. “fiberglass tanks”.
Water builds 5-1/2 times more static than crude oil or finished product. XTT tools ground the liquids in the tank. The tool is 316 stainless steel and runs the full length of the tank liquid levels.
XTT runs inside tank to constantly remove all oils from the top level. XTT reduces the requirement to hire a vacuum truck to pull the oil from the tank’s top thief hatch.
Once the oils are removed, the emissions of gas will deplete, and can now use the vapor line to inject nitrogen. The tank then benefits from a constant nitrogen purge which keeps oxygen and any menial gases from accumulating rendering the atmosphere inside the tank inert. Hydrocarbons will be removed which places the saltwater disposal in the perfect condition to handle mechanical, static or lightning situations that may occur.

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FAQ's:

What's the advantage to running a patented XTT Tool in a tank to recover vapors versus conventional tank roof vapour draw off?

When produced oil is released into a tank, it is the first time in its existence to experience atmospheric pressure. This is mother nature's first distillation process. The gasses release from the oil and need to be captured or the gas (VOC's) releases to atmosphere. The XTT Tool sits in the critical area where all this action is taking place, the "Flash Zone". The Flash Zone is a reference process facilities use to describe the area or process of a distillation column. This is a column built to release vapours from liquids. This process occurs inside oil production tanks 24 hours a day. The tool is works to remove vapours as soon as the gas (VOC) break out of the liquids because its working in the flash zone. The Freedom Tool uniquely reads pressure on the tank from this very volatile, reactive area of the tank, the "Flash Zone". If one were to compare roof vs flash zone pressure transmitter readings, they will be found to be very different. The roof level readings tend to be steady horizontal lines with little variation in pressure. The Freedom Tool in the "Flash Zone" will more active pressure reading variations.

What makes the patented XTT Tool the best choice for your company's "bottom line"?

- The XTT Tool recovers all vapors (VOC'S) and remove the gases as soon upon release.
- The XTT Tool extinguishes a twenty-foot diameter tank fire in less than sixty seconds.

This simple idea of this tool will give the producer peace of mind on your environmental and safety concerns.

Can the XTT Tool be installed in an existing in use production tank battery?
Yes, we have the producer empty one tank in the tank battery. Pull the tank manway and install the tool into tank and then reinstall the manway with block valves and possibly spill containment devices, on the outside of the tank manway.

How long does it take to install on an existing in use tank battery?
If you start pulling the manway on a production tank at 8 a.m., you will most likely have the manway back on tank with valves in place ready for production to the tank by lunch time.

Is there "Hot Work" needed to install XTT Tool?
No, we usually recommend having a new tank manway with two 4'' couplings (or double faced flanges for coated tanks and manways) welded in the manway, ready before the job is started.

Is there suction piping to the compressor coming off the roof of tank?
No, we keep you off the roof of tanks making this tool a safer alternative during installation and daily operations.

How does the tool work in a fire extinguishing role?
The XTT Tool works off the simple idea that it remains in the Flash Zone. It is a constant moving object that stays with your tank level. Once a fire needs to be extinguished the foam enters the Freedom Tool a few inches above the liquid releasing the fire foam and placing it in the correct spot. Firefighters want this foam directly on this area which lets the fire suppressing foam do its job and separate flame from fuel.

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Can the XTT Tool be built for automatic fire suppression?
Yes. We can build an automatic fire detection and firefighting system that will detect a fire on a 2 out of 3 voting system. Xtreme Tank Technologies can engineer a fire foam system that will take improve fire safety.

Does the patented XTT Tank Tool require the automatic fire detection and firefighting system installed on its tanks?
No. The XTT Tool can be installed with the vapor recovery (VRU) system. The firefighting system can be piped for fire trucks to pump the fire foam to the XTT Tool when there is a tank fire. The foam will enter the tank internally and extinguish the tank fire because the XTT Tank Tool places the foam right where it's needed, versus conventioinal external access fire suppression methods.

What are firefighters that fight tank battery fires say about the XTT Tank Technologies' tool?
"Wow"! is one of the first words you hear from these professionals once they see the tool working. Those with experience in putting out tank fires see this tool speeds up fire suppression drastically.

Testimonials

Salt Water Disposal:
My name is James Campanella and I am the Managing Member of Judah Oil, LLC

I have been in the SWD business since 2006 and have built several disposal wells. In building the disposals, one of the main goals is to remove the skim oil that accumulates on the water tanks without putting interface and or water into the oil holding tanks.

The XTT SS skimmers are by far the best solution for skimming the oil without transferring interface or water. The skimmers actually float on top of the oil and with instrumentation it allows us to maintain a 3" to 4" oil blanket on our water tanks. We set the amount of oil pad we desire and the skimmers, being non-stationary, allow precise accuracy on maintaining our oil blanket.

I am extremely satisfied with these skimmers and am confident to recommend them to any company looking to keep oil buildup off their water tanks.

James B Campanella
Managing Member
Judah Oil, LLC

An Answer to Several Storage Tank Challenges:
"I Wish I Had Thought of That!"

Donnie Hicks, Professional Engineer

As an engineer, I often see things and say to myself, "I wish I had thought of that!". This product certainly falls in that category. The Xtreme Tank Technologies Tool is the answer to several challenges facing the industry today. Starting with the safety aspect, the Xtreme Tank Technologies Tool will reduce the likelihood of fire in a tank. The Freedom Tank Technology Tool can further be fitted with a fire detection and suppression system. The Freedom Tank Technology Tool now becomes a "must have" for every tank in the industry.

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First, the unit works in the highest concentration of hydrocarbon vapors. Other techniques exhaust vapors at the top of the tank. Xtreme Tank Technologies Tool is ALWAYS in the vapor layer ready to go to work. The Xtreme Tank Technologies Tool recovers the gases that are the fuel for fire and move them to storage or a pipeline for sale.

Fire in a tank, as everyone knows, is nearly impossible to extinguish with current techniques. Often the fire department is helpless to save the tank. On the financial side, it is pulling from the vapor layer the best quality of gas, essentially paying for itself everyday while standing guard. Now comes one if the most exciting parts; the Xtreme Tank Technologies Tool can be fitted with a fire monitoring system and fire suppression. So, if the tank is struck by lightning or other ignition source, the sensors will set off the fire suppression system. The system can be certified to ISO 14520-1:2015 – Gaseous fire-extinguishing systems, if required.

The system also comes with an optional Skimmer. The skimmer can be set up to remove liquids floating on top of other liquids. For example, an oil spill in a lake. The unit will suck the oil off the top of the lake water. This gives it and environmental edge.

So, the unit can be used to remove valuable gas or liquids to be sold. With fire suppression and monitoring, it is now standing by to save the tank from fire.

Hydrocarbon vapor emissions from the oil and condensate holding tanks have been concerns of the Federal and States Environmental Agencies, and public communities. With more stringent rules regulating the air emissions out of the oil and condensate holding tanks, it requires vapor collecting tools having higher efficiency.

Large quantities of gas/vapor emissions out of holding tanks are also of significant product loss, higher efficient vapor/gas collecting apparatus offer economic benefit to the gas and oil producers.

The Xtreme Tank Technologies Tool is an excellent device that directs to an oil and vapor collecting equipment having a float system for adjusting the height of vapor recovery intakes. The float system is preferably adjustable to allow connection of floats to maintain buoyancy and keep the intake above the level of the oil surface in the holding tank. Vapor is drawn out of the holding tank using a vacuum assisted siphon.

The existing gas collecting system inlet is at the top of tank roof, either using vacuum or ejectors to send vapors to either sales lines or vapor recovery systems. The conventional configuration would have lower collecting efficiencies, considering fugitive emissions at the tank roof fittings. The Xtreme Tank Technologies Tool collects hydrocarbon gasses at the surface of the liquid would offer higher collecting efficiency, improve compliance, and increase the gas production rate.