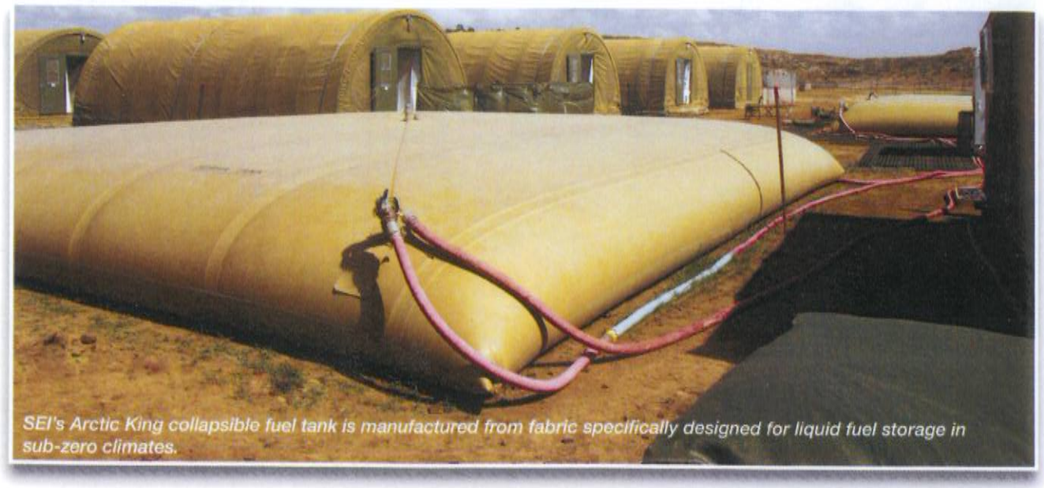
Collapsible fuel bladders protect sensitive Arctic environments



SEI's Arctic King collapsible fuel tank is manufactured from fabric specifically designed for liquid fuel storage in sub-zero climates.

Protecting pristine Arctic environments is a shared mission of both Environment Canada and Indian and Northern Affairs Canada. Working together and assisted by SEI Industries Ltd., the two federal government departments are developing key guidelines to ensure that inspectors and operators have the necessary direction to use collapsible fuel bladders, an environmentally safe option for temporary fuel storage in the Arctic.

Recently, confusion surrounding new legislation made the use of collapsible fuel bladders questionable, but the government is working to clarify the issue. In addition, national standards that apply to this specific item are being developed.

As the only Canadian manufacturer of collapsible fuel bladders, SEI has contributed information and expertise to this effort. The company has 327 collapsible fuel storage tanks in use in the Arctic, and is considered a leader in manufacturing collapsible fuel bladders for harsh climates.

Arctic fuel storage options

Prior to the invention of collapsible fuel tanks, a number of solutions were used by industry to store fuel in remote locations, including drums, steel tanks, and freezing barges full of fuel into winter sea ice.

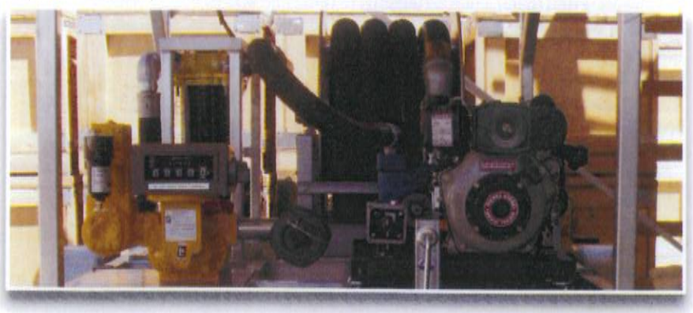
These options all have potential for harming the environment. Barges frozen in ice can rupture and spills can occur during fuel transfer. Steel tanks require a large footprint and are heavy, difficult and expensive to move, so they are often abandoned. When they are moved, their weight can cause significant damage to the tundra.

Fuel drums are also often abandoned or subjected to damage by heavy equipment, causing spills. Due to their smaller size, fuel drums tend to be moved more frequently than tanks, thus adding to the spill potential. Additionally, hundreds of drums are required to achieve the same volume as one collapsible fuel tank. The lower costs associated with removing collapsible fuel tanks also encourage proper disposal.

Traditionally used for temporary remote locations by the Department of National Defence, collapsible fuel bladders have also served mineral companies, remote-site construction projects, and disaster relief and helicopter operations for decades. They are also being used today as part of the effort to clean up abandoned fuel drums in the Arctic - remnants from the cold war's DEW Line.

Baffin Island mining example

Baffinland Iron Ore Mines required a complete fuel transfer, metering, filtering, pumping and storage solution to expand its Baffin Island mining operations. Like all such operations, this site needed fuel, but the nearest gas station was 1,000 miles away, so the company turned to SEI Industries to provide a turnkey answer in a challenging work environment.



The tanks are filled with fuel through an innovative network of manifolds and pumps.

The resulting Baffinland fuel farm consisted of two sites: Milne Inlet and Mary River. A total of 90 Arctic King™ tanks were installed at these sites, with each tank capable of holding 113,530 litres of fuel. In addition, a variety of fuel handling systems were designed to accomplish all other tasks associated with fuel transfer, filtration and metering. An SEI-designed secondary containment berm with oil/water separator was also used to meet environmental regulations.

The entire system was transported in 20-foot ISO containers. SEI's field service representatives oversaw the installation and provided training for employees from local service providers to maintain its products on-site.

SEI's Arctic King collapsible fuel tank is manufactured from fabric specifically designed for liquid fuel storage in sub-zero climates. Constructed from a proprietary high-durability fabric, the tank exceeds all US military specifications and has excellent UV and hydrolysis resistance for a long life expectancy.

It continually adjusts to any volume of liquid so that air cannot accumulate, reducing condensation to protect fuel quality and extend equipment life and safety. It is suitable for JP-1, JP-4, JP-8, kerosene, gasoline and diesel fuels with less than 60% aromatic content.

An Arctic King tank can be unfolded quickly and easily by six to eight people. Very little training is required, especially after the team has set up its first tank. Once a tank is unfolded, it can easily be unrolled by the team. The tanks are readied for filling by installing fill/drain valves to isolate individual tanks in the farm. Specialized Arctic vents prevent overfilling.

The tanks are filled with fuel through an innovative network of manifolds and pumps. They can be isolated into groups of four or filled individually if required. In the Arctic, fuel often arrives by barge, which remains anchored offshore. A floating hose from the barge to shore allows fuel to flow to shore, and then through a pipeline. Robust pumping/filtering equipment ensures that fuel is clean before it reaches the tanks.

Other equipment allows for easy fuel handling on-shore. The system's light-duty vehicle refueling pumps allow operators to fuel vehicles just like any service station. Portable fuel transfer trailers enable bulk fuel transfer into tanker trucks for delivery throughout the mine. A number of aircraft refueling pumps are used to provide aircraft fuel on the airstrip. All fuel is filtered and metered to API standards for aviation. Remote equipment can receive fuel from transportable helicopter fuel tanks.

This massive tank farm was successfully deployed and filled in three weeks during the summer, and the mining operation now has its own sophisticated gas station at the top of the world.

For more information, E-mail: sales@sei-ind.com