

CASE STUDY



SorbWeb™ Plus
Secondary Oil Containment System by Albarrie

Electrical Substation Successfully Adds A Secondary Oil Containment System.

In today's world, government compliance with environmental standards is essential. The regulations and heavy social pressures to protect our environment are forcing utility companies to address aging utility infrastructure. Transformers are among many culprits to ecological damage around substations.

The majority of North America's utility infrastructure was built in the 1950s, 60s and 70s. During this time, the government did not require a secondary oil containment around oil-filled equipment. The old de-regulation leaves modern utility companies exposed to environmental risk,



particularly around navigable waters. This risk forced one major Canadian utility company to seek a cost-effective, turn-key solution to address their secondary oil containment needs: **SorbWeb™ Plus with SAM secondary oil containment system by Albarrie.**

HIGHLIGHTS

❖ PROBLEM

Aging substation equipment leak causing environmental damage. A major utility company needs to modernize its substation secondary oil containment system.

❖ SOLUTION

The utility company modernizes with an innovative, maintenance-free **Sorbweb Plus with SAM** secondary oil containment system from Albarrie.

❖ CHALLENGES

The Albarrie team works with the utility company through several unforeseen installation challenges including remediation.

❖ RESULTS

Utility company is modernized while meeting both governmental and social demands to protect the environment.

THE SOLUTION

Albarrie's secondary oil containment system is an innovative, flexible, cost-effective, environmentally-friendly solution custom-designed to meet site specifications and bring companies back into environmental compliance. Albarrie's layered system captures 110% of oil volume using a smart

oil-adsorbing fabric that seals on contact with hydrocarbons. The fabric allows rainwater to pass through the containment without compromise, ensuring the soil's stability underneath. The maintenance-free design meets environmental guidelines from regulating bodies in both the US and Canada.



Layer 1: Fire Quenching Stone

Layer 2: Woven Fabric

Layer 3: Nonwoven Fabric

Layer 4: Sand

Layer 5: SAM

Layer 6: Oil Mat

Layer 7: Sand

OVERCOMING INSTALLATION CHALLENGES

Albarrie's engineering team works in consultation with the utility during the design phase, relying on client inputs. The consultation usually ensures a smooth, painless install. As with many projects that include aging equipment, unknown obstacles appeared both above ground and underground: existing contamination, exposed cables and the site's existing infrastructure. These challenges required the Albarrie team to change plans in real-time while working on site.

The first challenge the team addressed was existing contamination. Albarrie's secondary oil containment system requires clean soil for installation. The utility company hired a third-party consultant to test soil and guide the team on areas that needed remediation, ensuring the oil containment system's integrity moving forward.

The second hurdle was the exposed direct buried underground cables. The challenge required the Albarrie team to add protection to these direct buried cables by encasing them in conduits without

moving or disconnecting them while building the containment around them.

Finally, as the **SorbWeb™Plus** secondary oil containment excavation unfolded, Albarrie met several buried structures that required the field team to make design changes to the oil containment in real-time. The design changes accommodated the surprises while meeting the containment volume capacity requirements with minimal impact to cost.



RESULTS

Aging equipment, along with social and governmental demands to protect the environment, requires utility companies today to address potential hazards lurking in substations, including transformers that currently have no means to contain an oil spill in case of equipment failure. The project included remediating five areas: four reactors and one transformer.

With infrastructure built 60 years ago, we never know what lies hidden beneath the surface. However, through a close working partnership, the Albarrie team and the utility company successfully brought the old substation back into compliance with modern regulations.



CONTAINMENT SIZES

❖ **AREA 1: 13.5 M X 14.25 M**
53,090 L

❖ **AREA 4: 9.6 M X 12.25 M**
30,993 L

❖ **AREA 2: 17.0 M X 18.0 M**
82,718 L

❖ **AREA 5: 19.5 M X 19.5 M**
113,293 L

❖ **AREA 3: 9.6 M X 12.25 M**
30,782 L



Final Grading