



The Pioneer Of Geosynthetics  
S I N C E 1 9 7 2

## Water & Wastewater Treatment

### GSE PROVIDES A COMPLETE RANGE OF PRODUCTS AND SERVICES TO MEET YOUR WATER CONTAINMENT NEEDS

Water is the most precious and protected natural resource on earth. To meet containment and water treatment regulations, on-site water storage and treatment reservoirs are recognized as key in treatment facilities. GSE HDPE (High Density Polyethylene) and LLDPE (Linear Low Density Polyethylene) geomembranes and drainage products are proven to provide a cost-effective and efficient method of water-proofing earthen, concrete, and steel lined containment structures and reservoirs.

We offer a complete line of products and installation services to meet your specific water containment and treatment needs.



GSE geosynthetic products.

### WATER AND WASTEWATER CONTAINMENT APPLICATIONS

Thousands of industrial and municipal water and wastewater treatment facilities have relied on GSE materials, technology, and installation services in lining system applications. Many of the applications include:

- Water storage and treatment lagoons
- Sedimentation basins
- Grit chamber liners and flow control vertical baffles
- Floating covers for anaerobic digestion and odor control
- Geomembrane liners for corrosion protection of concrete structures
- Geomembrane liners to remediate leaking containment structures
- Factory-controlled prefabricated sumps, liners, piping systems, and pipe penetration connection liners



GSE White geomembrane liners utilized for industrial waste processing ponds.

### GSE QUALITY HDPE AND LLDPE GEOMEMBRANES

Polyethylene geomembranes are commercially available in a range of resin densities. GSE uses only high quality polyethylene resins specially formulated to exhibit excellent chemical resistance, UV-resistance, strength, durability, and resistance to stress cracking. These properties are critical to containment in most water and wastewater containment applications. GSE HDPE geomembranes are best suited for high wear, exposure to harsh liquid conditions and exposed applications. GSE LLDPE geomembranes offer higher flexibility to withstand large differential settlement conditions.

GSE geomembranes are used extensively in these applications due to their proven performance as a cost efficient replacement to conventional clay and concrete lining systems. And compared to other geomembranes, such as flexible PVC, GSE geomembranes contain no plasticizers or fillers that may cause premature geomembrane cracking and reduced service life. GSE geomembranes are:

- Rugged and durable
- Resistant to hazardous and harsh liquids
- Certified for potable water containment
- UV-resistant for exposed liner applications
- Flexible for ease of installation
- Installed quickly when compared to clay and concrete



GSE liner deployed over concrete in a wastewater treatment aerobic digester.

### GSE GEOSYNTHETIC CLAY LINERS PROVIDE AN ECONOMICAL ALTERNATIVE TO CONVENTIONAL COMPACTED CLAY LINERS

For water and wastewater containment lining applications that require compacted clay liners (CCLs), in addition to geomembranes, GSE also offers two types of Geosynthetic Clay Liners (GCLs), GSE Bentoliner Fabric Encased GCLs and GSE GundSeal Geomembrane Supported GCLs. GCLs are commonly used in water and wastewater containment applications, to replace conventional compacted clay layers and

geomembrane/compacted clay composite liners.

GSE BentoLiner is ideally suited as a replacement for thick layers of compacted clay by simply rolling out a fabric encased bentonite layer on flat or sloping areas. The GSE GundSeal is used as a replacement for a composite liner, replacing both a low permeability clay layer along with an impermeable and chemically resistant geomembrane. Its one product installation saves installation time as well as improves composite liner hydraulic performance.

Whether the choice is GSE BentoLiner or GSE GundSeal to provide an economical alternative to your compacted clay water containment requirements, GSE provides the widest range, most versatile, and highest quality GCLs in the world.



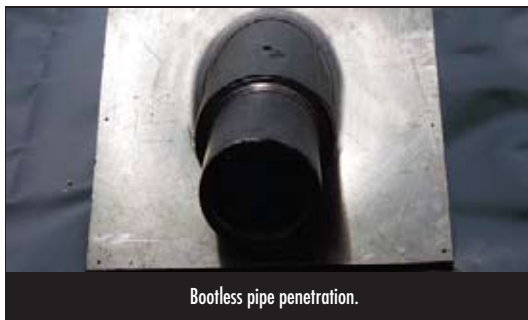
GSE GundSeal deployed as a composite liner in a food processing sludge lagoon.

**REPAIR OF EXISTING LAGOONS AND LINED STRUCTURES**

GSE geomembranes are suitable for lining of existing structures or to retrofit leaking liner systems, such as lagoon clay liners, cracked and weathered concrete liners, or corroded steel containment liners. The liners are simply installed over a prepared surface above the leaking liner by our skilled GSE Installation group.

**PREFABRICATED LINING SYSTEMS**

For smaller projects, such as collection sumps, small containment basins, grit chambers, and vertical flow control baffles, GSE provides prefabricated geomem



Bootless pipe penetration.

brane panels for the client's own installation. GSE Custom Fabrication is available to fabricate specialized size and dimensions to custom fit your containment structure.

**ENGINEERING SUPPORT**

The GSE Engineering Support Staff is comprised of multidisciplinary product professionals to support you across a range of project requirements. This includes knowledge in geomembrane, geosynthetic clay liners, geonet, geocomposite, nonwoven geotextile and concrete protection products and application solutions. Rely on our technical staff to help you solve your project issues.



GSE Engineering Support Staff.

**CUSTOM FABRICATION**

The GSE Custom Fabrication Group builds products to your exact specifications. We have extensive experience in prefabricated polyethylene products and components. A few examples of our custom fabricated products are Aqua Tanks, Quick Containment, concrete protection liners, boots, sumps, pads, pipes, daily covers, temporary containment, containment boom and other products to fulfill your fabrication needs.



StudLiner Sumps.

**INSTALLER NETWORK**

The GSE Installer Network leads the industry with the most experienced, large, and flexible crews available around the world to meet your installation requirements. Each installer is equipped with state-of-the-art welding and testing equipment to ensure a successful installation. Selecting a qualified installer with the right product knowledge is critical to your success. Let GSE connect you to the right installer to handle your installation project of any size from start to finish.