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AN INNOVATIVE APPROACH TO WATER CONSERVATION

The Casper-Alcova Irrigation District Casper, Wyoming

According to a report in the Casper Star Tribune, in Wyoming, few irrigation districts have done more to encourage water conservation than the Casper-Alcova Irrigation District. The district and the city of Casper have been working together for years as partners in an innovative approach to water conservation. As a result, the city has 7,000 acre-feet of emergency water banked away in the Seminoe and Alcova reservoirs.

The Casper-Alcova Irrigation District irrigates 24,700 acres of land with a system that includes 62 miles of canals and 1,800 miles of lateral lines. In the early 1980s, the city of Casper paid irrigators to install extensive conservation measures, including pivot sprinklers and lined and covered ditches, in an effort to create a reserve of water that could be used in the event of a major drought.¹ Siplast Teranap Geomembrane was chosen to line a 1000-foot section of the main canal in 1991. Over the next three years, the district installed close to two million square feet of Teranap.

For over 35 years, Siplast/Icopal has been a leader in the development and manufacture of advanced waterproofing materials. In the 1960s, working with Shell Chemical of Europe, Siplast developed styrene-butadiene-styrene (SBS) modified bitumens. We found that by properly modifying asphalt with SBS, we could produce a highly durable elastomeric blend with exceptional elongation/recovery properties over a wide range of temperatures. This technology led to the development of Teranap.



Teranap Geomembrane is the high performance waterproofing solution for irrigation canals, dams, wastewater storage, fountains, reservoirs, potable water storage, and ponds.

Teranap is an elastomeric bitumen geomembrane manufactured using a blend of SBS polymer and high quality asphalt. In this scientifically engineered blend, the asphalt assumes the elastomeric properties of the SBS, which gives Teranap exceptional elongation and recovery properties in varied climatic conditions. This elastomeric blend is reinforced by two layers of polyester, making Teranap less susceptible to punctures resulting from most common causes. Teranap's thick, nonwoven polyester geotextile layer protects against mechanical punctures and enhances flexibility, while Teranap's polyester film bottom layer protects the geomembrane from subgrade effects. Teranap is used to address both earthen-lined canals and old concrete-lined canals as a practical alternative to concrete or other forms of liners.

After more than ten years of exposure to the elements, the Teranap Geomembrane that lines the Casper-Alcova canal is in excellent condition -- in the bottom of the canal where water covers the membrane for six months a year, on the sides of the canal where the water level varies, and at the top of the canal where the membrane is always exposed. All indications are that the membrane is aging well and will keep performing for years to come.

Now, the Casper-Alcova Irrigation District is in the process of continuing their innovative water con-

ervation efforts with a new rehabilitation project that will include lining additional sections of canal with Teranap.

For more information on Teranap Geomembrane, please call 1-800-922-8800, or visit



Installation of Teranap Geomembrane in the main canal of the Casper-Alcova Irrigation District in 1991.



The main canal of the Casper-Alcova Irrigation District, more than ten years after installation of the Teranap Geomembrane.

¹Farquhar, Brodie "Irrigators boost crops, revenues with conservation." *Casper Star Tribune* 12 Feb. 2003.