

## OXYGEN SERVICE COMPANY



OXYGEN *Service* COMPANY

### Companies:

**Chart Inc.** ("Chart") is committed to providing its customers with the best cryogenic equipment solution for their specific application and offers within its extensive product lines the VSCO<sub>2</sub> Vertical Bulk Station with Vacuum Composite Super Insulation™.

**Oxygen Service Company** ("OSC") is a welding supply company covering the majority of Minnesota and Wisconsin from three Minnesota locations. It is 100% employee-owned and carries a full line of welding equipment, supplies, industrial and spec gases. The company philosophy is to offer the highest level of service to all of their customers.

### Problem:

OSC was using around 20 tons of CO<sub>2</sub> per month and storing it in a 40-year old Cardox 24-ton horizontal tank with foam insulation cooled by an external refrigeration unit. The tank's foam insulation had degraded from water saturation to a point that the chiller (3.5 kW) was running whenever the unit was not in use, nearly 150 hours per week. In addition, the Freon® refrigerant for the old chiller was costing around \$350 per year to maintain.

### Challenge:

Provide a more efficient Bulk Carbon Dioxide storage tank to reduce their expenses for electricity and refrigerant maintenance.

### Solution:

Replace the old foam tank with Chart's VSCO<sub>2</sub> 30-ton Vertical Bulk Station utilizing Composite Super Insulation and superior vacuum technology.

This unit offers ultra-low heat leak, eliminating the need for a costly refrigeration system with no down time compared to refurbishing the deteriorated foam.

This proven technology provides all the benefits of bulk storage with no gas losses between refills, with a minimum usage of .08%/day (48 lbs/day) in the 30-ton model.

## VSCO<sub>2</sub> Bulk Tank with Super Insulation

### CASE STUDY #16



Among the many benefits of the **Chart VSCO<sub>2</sub> Standard Bulk Station** over foam-insulated tanks are:

- Lowest life-cycle costs for bulk CO<sub>2</sub> station
- No changes in aesthetic appearance after 20+ years
- Superior functional performance
- High-strength, hermetically sealed outer jacket eliminates deterioration of insulation, costly repairs, and down-time
- Reduce tank footprint with vertical models
- Eliminate product loss due to venting
- Hold time is 8 times longer than foam
- Refrigeration system not required for maintaining heat leak under normal usage
- No monthly maintenance or electrical charges
- In food freezing applications, add Python® VJ withdrawal to eliminate frost balls and increase snow yield
- Two-year payback vs. foam tank
- Backed by an industry-leading 5-year vacuum warranty



Innovation. Experience. Performance.®

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## VSCO<sub>2</sub> Bulk Tank with Super Insulation

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#### Outcome:

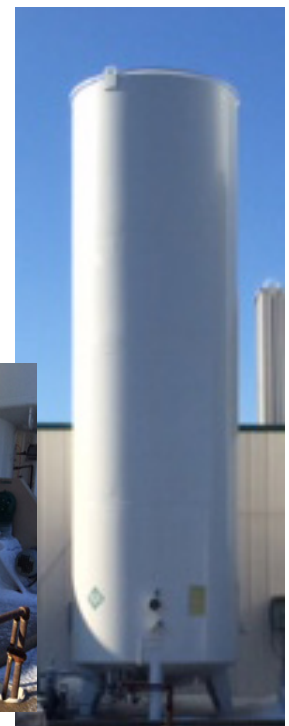
By eliminating the need for an internal refrigeration coil and an external chiller, OSC was able to save \$230 per month in electricity costs (3.5 kW @ \$.10/kWh) and about \$350 per year in Freon® service costs. This adds up to an annual savings of \$3,110 per year.

**OLD SYSTEM:** Cardox 24-Ton Foam Insulation CO<sub>2</sub> Bulk Tank with Chiller. (1974)

**NEW SYSTEM:** Chart 30-ton Standard VSCO<sub>2</sub> System with Composite Super Insulation™



Chiller Unit



"The new Chart bulk CO<sub>2</sub> tank keeps our liquid pressure lower than our foam tank, even without a refrigeration unit. This helps our pump cool down faster, saving us time on start up. The savings from electricity and maintenance provides us an excellent ROI. Overall, the Chart super insulated tank is a solid investment that looks great today and will be for years to come!"

- Trevor Kelsey, Specialty/Industrial Gas Plant Manager, Oxygen Service Company