



CONSERVATION OF RESOURCES

Bulk Diesel Filtration Solution For Major Mining Customer

Technical Application Bulletin

PROJECT BACKGROUND

DISCOVER



DIAGNOSE

- Customer is a player in the North American Coal Corporation.
- 1 M gallons of fuel used annually.
- Customer was seeking improved fuel filtration and water removal.
- They had new Tier IV Equipment on-site that needed addressed.
- 3 competitive solutions were being considered.

- Not meeting OEM filter life.
- Experiencing excessive machine downtime in their new Tier IV equipment.
- Competitor #1 - absorbing.
 - Low initial cost
 - Costly maintenance
- Competitor #2 - coalescing skid.
 - Higher initial cost
 - 95% water removal
- Competitor #3 - Schroeder BDS4.
 - < Competitor #2
 - 99.5% water removal

INDUSTRIES



DESIGN

What We Did: With the higher water removal efficiency, and overall lower cost, the customer became interested in Schroeder's BDS4 | Bulk Diesel Fuel Skid solution.

- BDS4 = 99.5% Efficiency
- Competitor #2 = 95% Efficiency
- Example: 1% water in 1M gallons = **450 more gallons of water removed**

Particulate Removal

Paired with our 2QF5 Parallel Flow for improved winter performance:

- Reduced ΔP
- Higher Dirt Holding Capacity (DHC)
- Less "Gelling" prone media

Paired with a TCM-FC & CSI-B-7 for real-time contamination monitoring.



DELIVER

- Improved performance:
 - Pre and post tank filtration
 - High water removal efficiency
- Reduced maintenance:
 - Equipment filters meeting service intervals
 - No dispensing element changes from 2x per week
 - Parallel 2QF5 Filtration = + DHC
 - Automated water drain system
- Reduced maintenance:
 - TCM-FC for in/out particle counts
 - CSI-B-7 for remote data collection
 - Able to perform fuel quality trending



Bulk Mining Fuels	Without BDS4	With BDS4	Savings
Dispensing Elements	208 ele. / yr.	4 ele. / yr.	-204 ele. / yr.
Dispensing Elements	\$34,000 / yr.	\$650 / yr.	-\$33,350 / yr.
Element Changeout Labor	52 hrs. / yr.	1 hr. / yr.	-51 hrs. / yr.
Element Changeout Labor	\$1,500 / yr.	\$25 / yr.	-\$1,475 / yr.

- This customer sold 2.1M tons of coal in the same year (@ \$22.89 per ton)
- Income from coal delivered = \$48M USD
 - >\$131,000 USD per day
 - >\$5,400 USD per hour
- Productivity increase of 1% boosts annual revenue by \$480,000
 - That's equivalent to 89 hours or 3.7 days
 - Consider that most fuel related repairs involve 2-3 days downtime
 - This does not account for the additional repair and maintenance costs (often exceeding \$50,000 per repair)

CUSTOMER BENEFITS

- Protects expensive, vital engine components against failures caused by water contaminated fuel

FURTHER APPLICATION AREAS

- All Mining Operations (Coal, Metallic, Aggregate)
- Construction (Large site development, Concrete, Highway)

ROI

Dispensing Element Savings



\$33.4K

Labor Savings Per Year



\$1.4K

Underlying values:

Dispensing element savings:
208 element changes / year
at \$163.46 each w/o BDS4
solution (\$163.46 x 208 =
\$34,000).

Dispensing element savings:
4 element changes / year
at \$162.50 each w/ BDS4
solution (\$162.50 x 4 = \$650).

\$34,000 - \$650 = \$33,350.

PRODUCT SPECS

BDS4 | Bulk Diesel Multi-Skid

Flow Rating: 210 to 280 gpm

Inlet/Outlet Connection:

-32 (ORB) SAE J1926

Drain Connection Upper & Lower:

1/4" NPT Ball Valve

Max. Operating Pressure:

100 psi (7 bar)

Temperature Range:

-20°F to 165°F (sump heater)

-32°F to 165°F (standard)

Element Change: 33.80"

Weight: 904 lbs.