

6403 MONOLEC® R&O COMPRESSOR / TURBINE OIL
EAST ORANGE COUNTY WATER DISTRICT, Orange County, CA
General Electric 150 hp Vertical Pumps • SIC 4941 Water Supply

Total annual savings from 6403: \$2,020.27

CUSTOMER TESTIMONIAL

CUSTOMER PROFILE

East Orange County Water District is located in Orange County, CA. They have the responsibility to pump fresh water to East Orange County residents and businesses.

APPLICATION

The General Electric 150 hp, 3-phase, 460 volt vertical pumps are critical pieces of equipment. The electric motors drive the down hole water pumps which run 24 hours a day, 365 days a year.

AREA OF INTEREST

It was standard operating procedure for East Orange County Water District to change the commercial grade oil in these pumps every six months. They didn't realize they could extend drain intervals on these pumps, or that they were spending precious dollars on electricity bills with Southern California Edison. Even with six month drain intervals, the commercial grade oil would begin to foam.

LE SOLUTION

In December, 1989, the local LE Representative recommended changing these electric motors to LE's 6403 MONOLEC® R & O Compressor / Turbine Oil. LE's 6403 offers excellent oxidation resistance and does not emulsify with water. It contains MONOLEC®, LE's exclusive wear-reducing additive, and is long lasting in service.

The purpose of the conversion to LE's 6403 MONOLEC R & O Compressor / Turbine Oil was to demonstrate how to increase system efficiency by lowering the overall temperature of the oil and extending current drain intervals under full load. Lubrication Engineers accomplishes this by using a unique additive package in conjunction with MONOLEC, thus providing the best protection available.

CUSTOMER COST SAVINGS

Under the direction of the LE Representative, amperage readings were taken before and after the conversion to LE's 6403 MONOLEC R & O Compressor / Turbine Oil.

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Using the commercial grade oil, amperage readings were recorded at 166.1. After converting to LE's 6403, the same electric motor drew only 163.3 amps - a 2.8 amp reduction.

	<u>Commercial Turbine Oil ISO 68</u>	<u>LE's 6403</u>
Red Leg #1	159.1	154.6
Black Leg #2	171.1	168.4
Blue Leg #3	168.1	166.9
Total Amps	498.3	489.9
Average Amps	166.1	163.3

LE'S 6403 MONOLEC® R & O COMPRESSOR / TURBINE OIL SHOWS A 2.8 AMP REDUCTION

Electricity Charge

Base kW Charge	\$0.11048
kW Tax	\$0.0002
Total kW Charge	\$0.11068

The following formula is used to find the cost of a unit's electrical consumption. This is the same formula used by the local utility company.

$$\begin{aligned}
 & \text{Volts} \times \text{Amperes Saved} \times 1.73^* = \text{kW Savings} \\
 & \text{kW Savings} \times \text{Hours of Operation Per Year} = \text{Annual kWh Savings} \\
 & \text{Annual kWh Savings} \times \text{Electrical Rate} = \text{Annual Electrical Savings} \\
 & \text{*Conversion Factor for a 3-phase Power Source}
 \end{aligned}$$

$$\begin{aligned}
 & .460 \times 2.8 \times 1.73 = 2.23 \\
 & 2.23 \times 8760 = 19,534.80 \\
 & 19,534.80 \times \$0.11068 = \$2162.11
 \end{aligned}$$

Annual Electrical Energy Savings Using LE's 6403	=	\$2162.11
Cost of LE's 6403 (\$11.82/gallon x 12 gallons)	=	<u>-141.84</u>

TOTAL ANNUAL SAVINGS = \$2020.27

East Orange County Water District has saved over \$2,000 annually, with a minimum 7% cost factor.

SAVES \$2,730 ANNUALLY IN ELECTRICAL CONSUMPTION



We wish to thank East Orange County Water District Field Foreman John Dulebohn, General Manager Dale Heubeman and LE Representative Bob Sodergren (pictured) for providing information to prepare this report.