

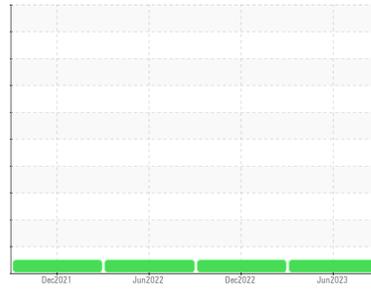


OIL ANALYSIS REPORT



Machine Id
FRICK COMPRESSOR S-2 (S/N 0503)
 Component
Refrigeration Compressor
 Fluid
FRICK COMPRESSOR OIL #3 (25 GAL)

Sample Rating Trend



NORMAL



DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

Contamination

There is no indication of any contamination in the oil. The amount and size of particulates present in the system are acceptable.

Fluid Condition

The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

| SAMPLE INFORMATION | | method | limit/base | current | history1 | history2 |
|--------------------|-------------|--------|------------|--------------------|-------------|-------------|
| Sample Number | Client Info | | | USP240864 | USP240857 | USP230296 |
| Sample Date | Client Info | | | 15 Jun 2023 | 15 Dec 2022 | 17 Jun 2022 |
| Machine Age | Client Info | | | 13640 | 13638 | 13636 |
| Oil Age | Client Info | | | 0 | 0 | 0 |
| Oil Changed | Client Info | | | Not Changed | Not Changed | Not Changed |
| Sample Status | | | | NORMAL | NORMAL | NORMAL |

| WEAR METALS | | method | limit/base | current | history1 | history2 |
|-------------|-----|-------------|------------|------------|----------|----------|
| Iron | ppm | ASTM D5185m | >8 | 4 | <1 | 4 |
| Chromium | ppm | ASTM D5185m | >2 | 0 | 0 | 0 |
| Nickel | ppm | ASTM D5185m | | 0 | 0 | 0 |
| Titanium | ppm | ASTM D5185m | | 0 | 0 | 0 |
| Silver | ppm | ASTM D5185m | >2 | 0 | 0 | 0 |
| Aluminum | ppm | ASTM D5185m | >3 | 0 | 0 | <1 |
| Lead | ppm | ASTM D5185m | >2 | 0 | 0 | 0 |
| Copper | ppm | ASTM D5185m | >8 | 0 | 0 | 0 |
| Tin | ppm | ASTM D5185m | >4 | 0 | 0 | 0 |
| Antimony | ppm | ASTM D5185m | | --- | --- | --- |
| Vanadium | ppm | ASTM D5185m | | 0 | 0 | 0 |
| Cadmium | ppm | ASTM D5185m | | 0 | 0 | 0 |

| ADDITIVES | | method | limit/base | current | history1 | history2 |
|------------|-----|-------------|------------|--------------|----------|----------|
| Boron | ppm | ASTM D5185m | | 0 | 0 | <1 |
| Barium | ppm | ASTM D5185m | | 3 | 0 | 1 |
| Molybdenum | ppm | ASTM D5185m | | 0 | 0 | <1 |
| Manganese | ppm | ASTM D5185m | | 0 | 0 | 0 |
| Magnesium | ppm | ASTM D5185m | | 0 | 0 | 0 |
| Calcium | ppm | ASTM D5185m | | 0 | 0 | 0 |
| Phosphorus | ppm | ASTM D5185m | | <1 | 0 | 0 |
| Zinc | ppm | ASTM D5185m | | 0 | 5 | 5 |
| Sulfur | ppm | ASTM D5185m | | 2247 | 2139 | 1931 |

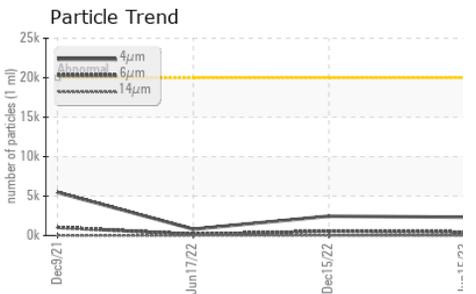
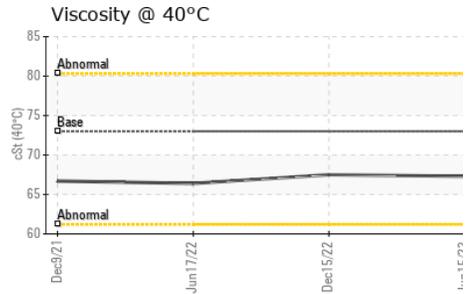
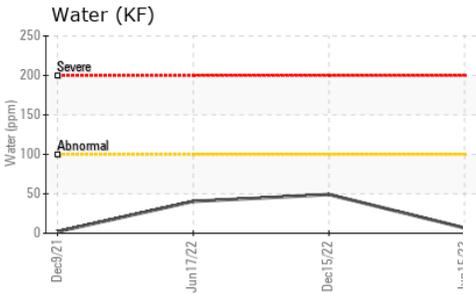
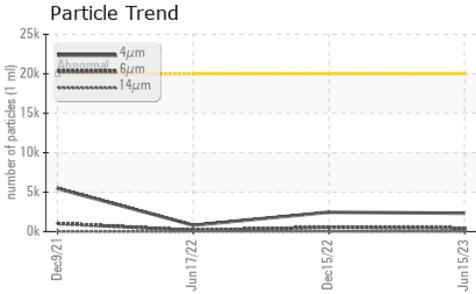
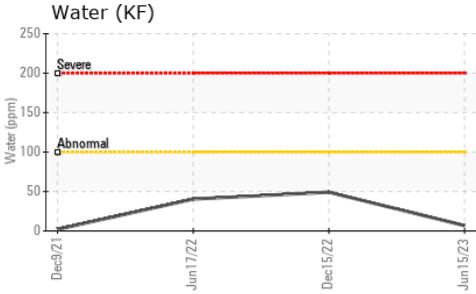
| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|--------------|-----|-------------|------------|--------------|----------|----------|
| Silicon | ppm | ASTM D5185m | >15 | 0 | 0 | <1 |
| Sodium | ppm | ASTM D5185m | | <1 | <1 | 1 |
| Potassium | ppm | ASTM D5185m | >20 | 0 | 0 | 0 |
| Water | % | ASTM D6304 | >0.01 | 0.001 | 0.004 | 0.004 |
| ppm Water | ppm | ASTM D6304 | >100 | 6.8 | 49.1 | 40.4 |

| FLUID CLEANLINESS | | method | limit/base | current | history1 | history2 |
|-------------------|--|--------------|------------|-----------------|----------|----------|
| Particles >4µm | | ASTM D7647 | >20000 | 2323 | 2455 | 816 |
| Particles >6µm | | ASTM D7647 | >2500 | 431 | 544 | 152 |
| Particles >14µm | | ASTM D7647 | >320 | 15 | 16 | 12 |
| Particles >21µm | | ASTM D7647 | >80 | 4 | 2 | 4 |
| Particles >38µm | | ASTM D7647 | >20 | 0 | 0 | 0 |
| Particles >71µm | | ASTM D7647 | >4 | 0 | 0 | 0 |
| Oil Cleanliness | | ISO 4406 (c) | >21/18/15 | 18/16/11 | 18/16/11 | 17/14/11 |

| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|-------------------|----------|-----------|------------|--------------|----------|----------|
| Acid Number (AN) | mg KOH/g | ASTM D974 | | 0.015 | 0.015 | 0.012 |



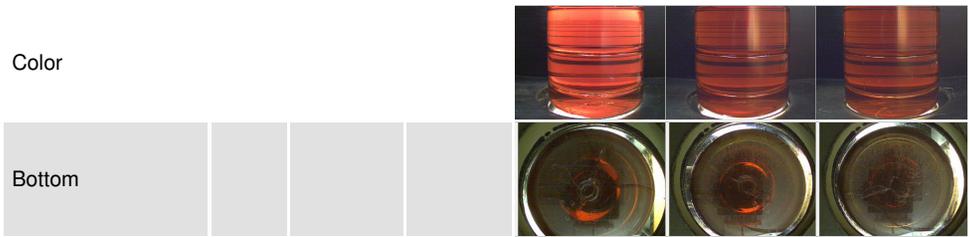
OIL ANALYSIS REPORT



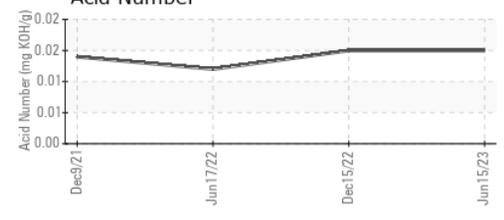
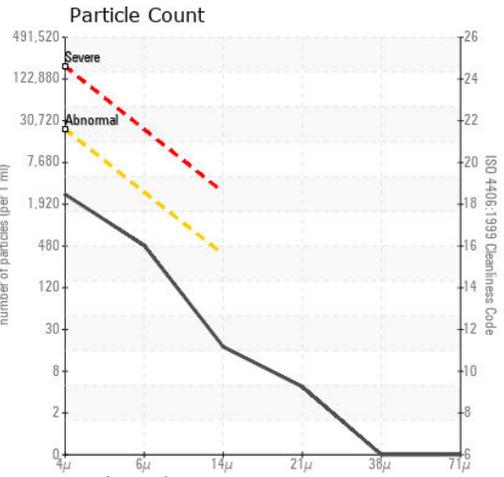
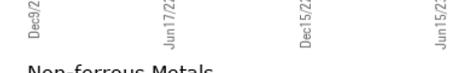
| VISUAL | method | limit/base | current | history1 | history2 |
|------------------|--------|------------|---------|----------|----------|
| White Metal | scalar | *Visual | NONE | NONE | VLITE |
| Yellow Metal | scalar | *Visual | NONE | NONE | NONE |
| Precipitate | scalar | *Visual | NONE | NONE | NONE |
| Silt | scalar | *Visual | NONE | NONE | NONE |
| Debris | scalar | *Visual | NONE | NONE | NONE |
| Sand/Dirt | scalar | *Visual | NONE | NONE | NONE |
| Appearance | scalar | *Visual | NORML | NORML | NORML |
| Odor | scalar | *Visual | NORML | NORML | NORML |
| Emulsified Water | scalar | *Visual | >0.01 | NEG | NEG |
| Free Water | scalar | *Visual | | NEG | NEG |

| FLUID PROPERTIES | method | limit/base | current | history1 | history2 |
|------------------|--------|--------------|-------------|----------|----------|
| Visc @ 40°C | cSt | ASTM D445 73 | 67.3 | 67.5 | 66.4 |

| SAMPLE IMAGES | method | limit/base | current | history1 | history2 |
|---------------|--------|------------|---------|----------|----------|
|---------------|--------|------------|---------|----------|----------|



GRAPHS



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : USP240864 **Received** : 20 Jun 2023
Lab Number : **05878887** **Tested** : 21 Jun 2023
Unique Number : 10523990 **Diagnosed** : 21 Jun 2023 - Doug Bogart
Test Package : IND 2

LINEAGE LOGISTICS
 19450 NE SAN RAFAEL ST
 PORTLAND, OR
 US 97230
 Contact: DANIEL VALDIVIA MENDOZA
 dvaldivia@onelineage.com
 T: (503)926-5499
 F:

To discuss this sample report, contact Customer Service at 1-800-237-1369.
 * - Denotes test methods that are outside of the ISO 17025 scope of accreditation.
 Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)