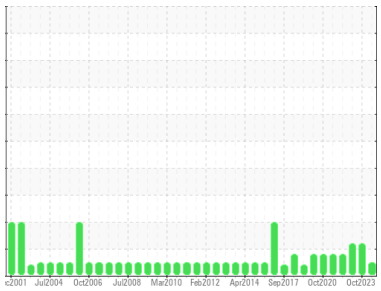
# OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL

Machine Id
## FRICK HS14 1074 (S/N TDSH233L1104E)
Component
**Refrigeration Compressor**
Fluid
**USPI 1009-68 SC (--- GAL)**

## 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 | | **USP0006507** | USP0003405 | USP248354 |
| Sample Date | | Client Info | | **15 Apr 2024** | 16 Oct 2023 | 19 May 2023 |
| Machine Age | hrs | Client Info | | **78889** | 76157 | 73857 |
| Oil Age | hrs | Client Info | | **0** | 0 | 0 |
| Oil Changed | | Client Info | | **N/A** | N/A | N/A |
| Sample Status | | | | **NORMAL** | ABNORMAL | ABNORMAL |

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

| ADDITIVES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Boron | ppm | ASTM D5185m | | **0** | 0 | 0 |
| Barium | ppm | ASTM D5185m | | **<1** | 0 | 0 |
| Molybdenum | ppm | ASTM D5185m | | **<1** | 0 | 0 |
| Manganese | ppm | ASTM D5185m | | **0** | 0 | <1 |
| Magnesium | ppm | ASTM D5185m | | **<1** | 0 | 0 |
| Calcium | ppm | ASTM D5185m | | **<1** | <1 | <1 |
| Phosphorus | ppm | ASTM D5185m | | **0** | 0 | 0 |
| Zinc | ppm | ASTM D5185m | | **0** | 0 | 0 |
| Sulfur | ppm | ASTM D5185m | 50 | **0** | 0 | 15 |

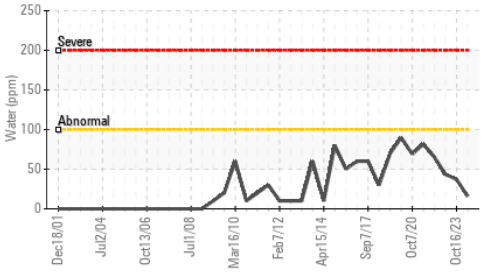
| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Silicon | ppm | ASTM D5185m | >15 | **1** | 0 | 0 |
| Sodium | ppm | ASTM D5185m | | **<1** | 0 | <1 |
| Potassium | ppm | ASTM D5185m | >20 | **1** | <1 | 0 |
| Water | % | ASTM D6304 | >0.01 | **0.002** | 0.003 | 0.004 |
| ppm Water | ppm | ASTM D6304 | >100 | **16** | 37.1 | 43.4 |

| FLUID CLEANLINESS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Particles >4µm | | ASTM D7647 | >10000 | **588** | ▲ 36409 | ▲ 25215 |
| Particles >6µm | | ASTM D7647 | >2500 | **155** | ● 4853 | ▲ 6727 |
| Particles >14µm | | ASTM D7647 | >320 | **10** | 93 | 177 |
| Particles >21µm | | ASTM D7647 | >80 | **2** | 10 | 20 |
| Particles >38µm | | ASTM D7647 | >20 | **0** | 0 | 0 |
| Particles >71µm | | ASTM D7647 | >4 | **0** | 0 | 0 |
| Oil Cleanliness | | ISO 4406 (c) | >20/18/15 | **16/14/10** | ▲ 22/19/14 | ▲ 22/20/15 |

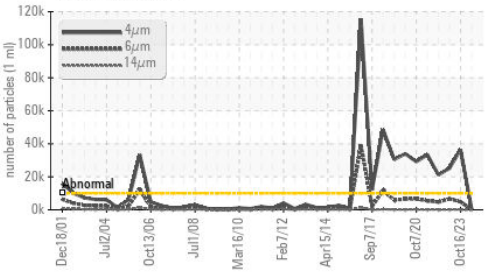
| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Acid Number (AN) | mg KOH/g | ASTM D974 | 0.005 | **0.014** | 0.014 | 0.013 |

# OIL ANALYSIS REPORT

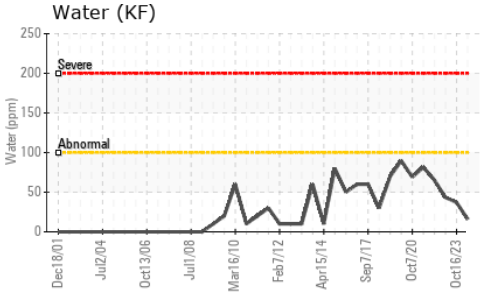
Water (KF)



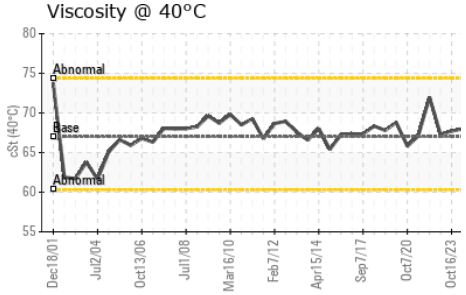

Particle Trend



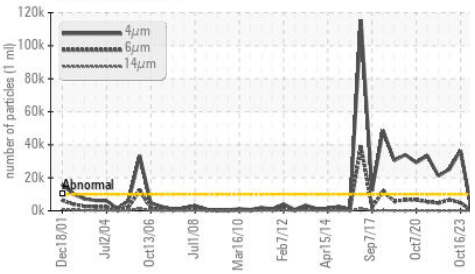

Water (KF)




Viscosity @ 40°C

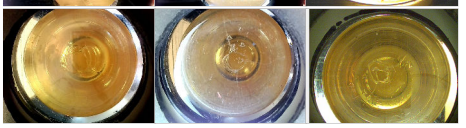



Particle Trend



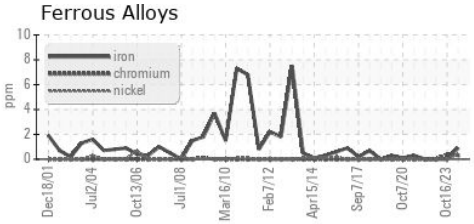

| VISUAL | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| White Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Precipitate | scalar | *Visual | NONE | **NONE** | NONE | NONE |
|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

| FLUID PROPERTIES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Visc @ 40°C | cSt | ASTM D445 | 67 | **68.0** | 67.7 | 67.3 |

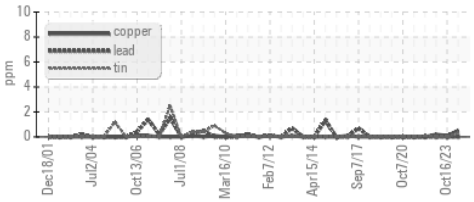
| SAMPLE IMAGES | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|
| Color | | |  | | |
| Bottom | | |  | | |

## GRAPHS

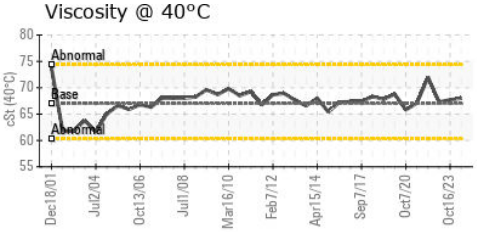
Ferrous Alloys



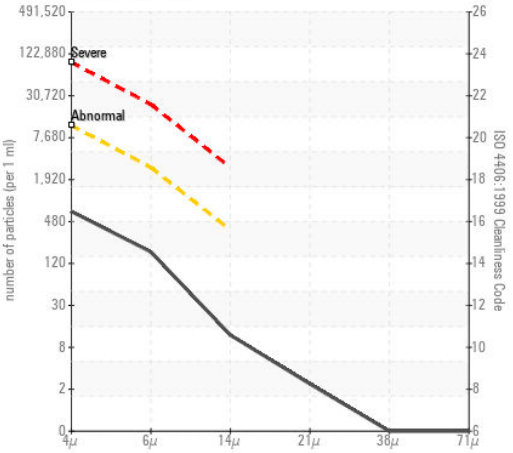

Non-ferrous Metals



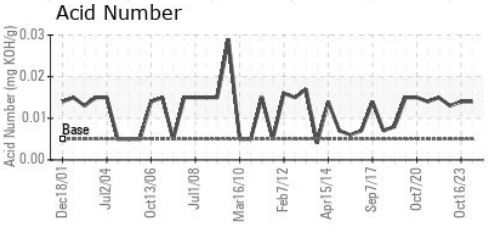

Viscosity @ 40°C




Particle Count




Acid Number




**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513
**Sample No.** : USP0006507
**Lab Number** : 06156038
**Unique Number** : 10991461
**Test Package** : IND 2

**Received** : 22 Apr 2024
**Tested** : 23 Apr 2024
**Diagnosed** : 24 Apr 2024 - Jonathan Hester

Certificate L2367

*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)*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