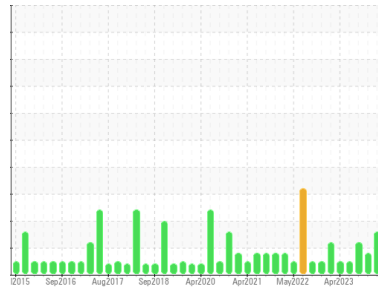




# OIL ANALYSIS REPORT

Sample Rating Trend



ISO



Machine Id  
**FES TYSGOO 2-400 (S/N 00317011)**  
 Component  
**Refrigeration Compressor**  
 Fluid  
**USPI ALT-68 SC (--- GAL)**

## DIAGNOSIS

### Recommendation

We recommend you service the filters on this component. Resample at the next service interval to monitor.

### Wear

All component wear rates are normal.

### Contamination

There is a high amount of particulates present in the oil.

### 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 |             | <b>USP234858</b>   | USP247161   | USP0001421  |
| Sample Date   | Client Info |             | <b>27 Apr 2024</b> | 16 Jan 2024 | 08 Oct 2023 |
| Machine Age   | hrs         | Client Info | <b>0</b>           | 0           | 0           |
| Oil Age       | hrs         | Client Info | <b>0</b>           | 0           | 0           |
| Oil Changed   | Client Info |             | <b>N/A</b>         | N/A         | N/A         |
| Sample Status |             |             | <b>ABNORMAL</b>    | ATTENTION   | ATTENTION   |

## WEAR METALS

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

## ADDITIVES

|            | method | limit/base     | current      | history1 | history2 |
|------------|--------|----------------|--------------|----------|----------|
| Boron      | ppm    | ASTM D5185m    | <b>0</b>     | 0        | 0        |
| Barium     | ppm    | ASTM D5185m    | <b>0</b>     | 0        | 0        |
| Molybdenum | ppm    | ASTM D5185m    | <b>0</b>     | 0        | 0        |
| Manganese  | ppm    | ASTM D5185m    | <b>&lt;1</b> | <1       | 0        |
| Magnesium  | ppm    | ASTM D5185m    | <b>0</b>     | <1       | 0        |
| Calcium    | ppm    | ASTM D5185m    | <b>0</b>     | <1       | 0        |
| Phosphorus | ppm    | ASTM D5185m    | <b>0</b>     | 0        | 0        |
| Zinc       | ppm    | ASTM D5185m    | <b>0</b>     | 2        | 0        |
| Sulfur     | ppm    | ASTM D5185m 50 | <b>0</b>     | 0        | 0        |

## CONTAMINANTS

|           | method | limit/base       | current      | history1 | history2 |
|-----------|--------|------------------|--------------|----------|----------|
| Silicon   | ppm    | ASTM D5185m >15  | <b>&lt;1</b> | <1       | 1        |
| Sodium    | ppm    | ASTM D5185m      | <b>&lt;1</b> | 0        | 0        |
| Potassium | ppm    | ASTM D5185m >20  | <b>0</b>     | 0        | <1       |
| Water     | %      | ASTM D6304 >0.01 | <b>0.005</b> | 0.002    | 0.004    |
| ppm Water | ppm    | ASTM D6304 >100  | <b>52</b>    | 22       | 45.7     |

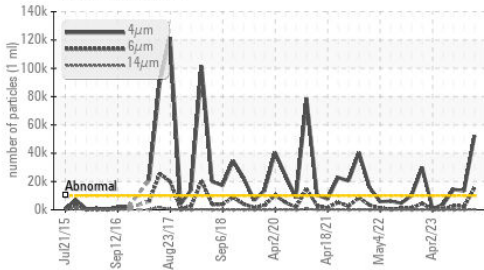
## FLUID CLEANLINESS

|                 | method       | limit/base | current           | history1   | history2   |
|-----------------|--------------|------------|-------------------|------------|------------|
| Particles >4µm  | ASTM D7647   | >10000     | <b>▲ 52304</b>    | ● 13313    | ● 14429    |
| Particles >6µm  | ASTM D7647   | >2500      | <b>▲ 15720</b>    | ● 2322     | ● 2772     |
| Particles >14µm | ASTM D7647   | >320       | <b>▲ 352</b>      | ● 65       | ● 35       |
| Particles >21µm | ASTM D7647   | >80        | <b>41</b>         | ● 11       | ● 6        |
| Particles >38µm | ASTM D7647   | >20        | <b>0</b>          | ● 1        | ● 0        |
| Particles >71µm | ASTM D7647   | >4         | <b>0</b>          | ● 0        | ● 0        |
| Oil Cleanliness | ISO 4406 (c) | >20/18/15  | <b>▲ 23/21/16</b> | ● 21/18/13 | ● 21/19/12 |

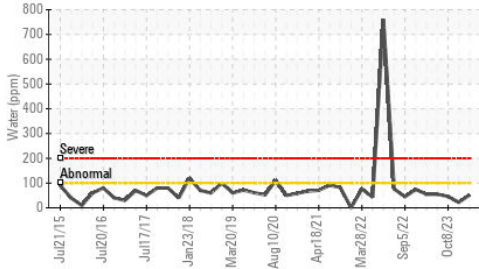
## FLUID DEGRADATION

|                  | method   | limit/base      | current      | history1 | history2 |
|------------------|----------|-----------------|--------------|----------|----------|
| Acid Number (AN) | mg KOH/g | ASTM D974 0.005 | <b>0.015</b> | 0.014    | 0.013    |

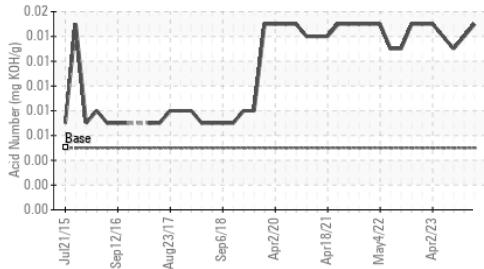
### ▲ Particle Trend



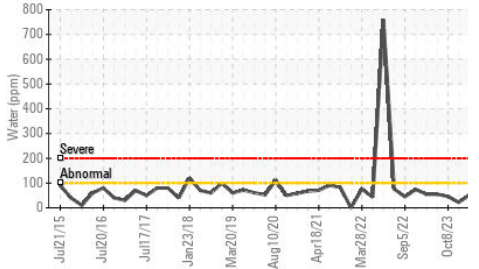
### Water (KF)



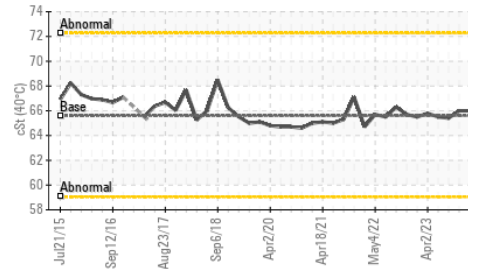
### Acid Number



### Water (KF)



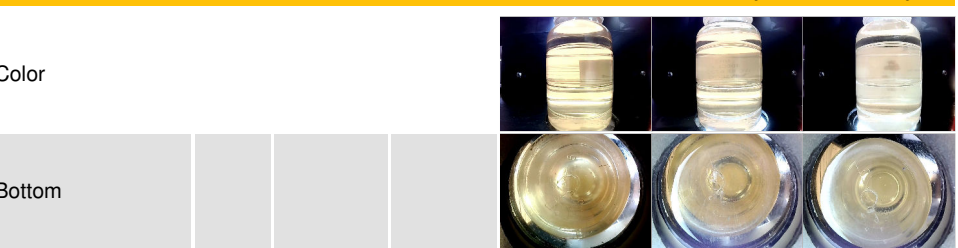
### Viscosity @ 40°C



| VISUAL           | method | limit/base | current | history1 | history2 |
|------------------|--------|------------|---------|----------|----------|
| White Metal      | scalar | *Visual    | NONE    | NONE     | NONE     |
| 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      |

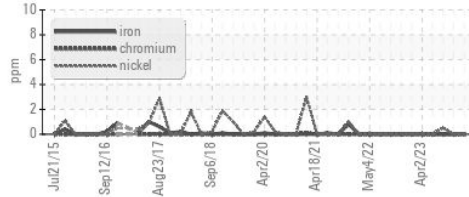
| FLUID PROPERTIES | method | limit/base | current | history1 | history2 |
|------------------|--------|------------|---------|----------|----------|
| Visc @ 40°C      | cSt    | ASTM D445  | 65.6    | 66.0     | 65.4     |

### SAMPLE IMAGES

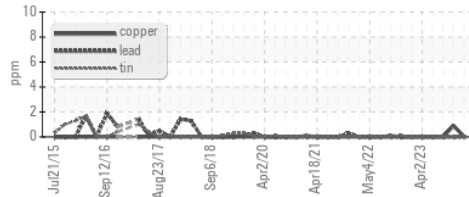


### GRAPHS

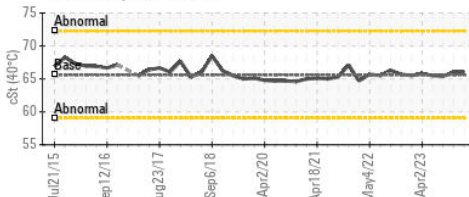
#### Ferrous Alloys



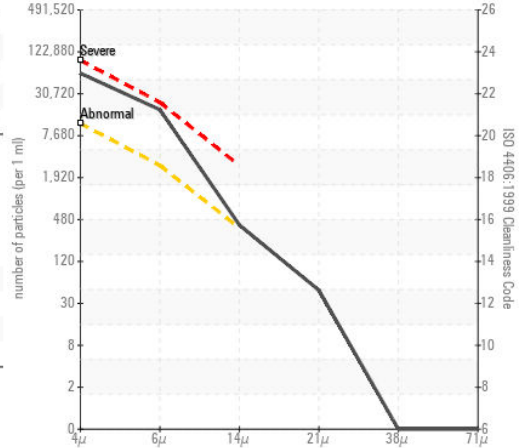
#### Non-ferrous Metals



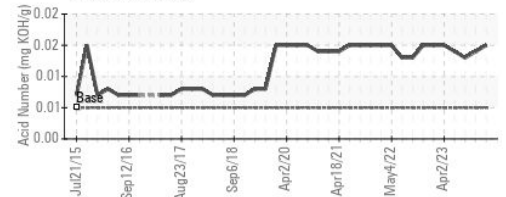
#### Viscosity @ 40°C



#### ▲ Particle Count



#### Acid Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
 Sample No. : USP234858  
 Lab Number : 06161579  
 Unique Number : 10997002  
 Test Package : IND 2

Received : 26 Apr 2024  
 Tested : 30 Apr 2024  
 Diagnosed : 30 Apr 2024 - Doug Bogart

**TYSON -GOODLETTSVILLE-USP**  
 201 CARTWRIGHT STREET  
 GOODLETTSVILLE, TN  
 US 37072  
 Contact: JOHN BAKER

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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