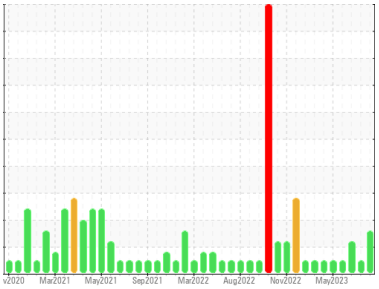
# PROBLEM SUMMARY

Sample Rating Trend

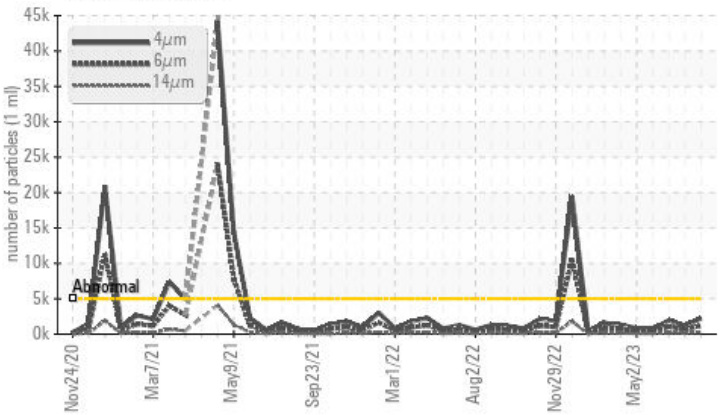


ISO

Area
## MELT SHOP - HYDRAULIC
Machine Id
## MELT SHOP EAF MAIN HYDRAULIC UNIT (S/N 15-2000-0815-0010)
Component
**Tank Hydraulic System**
Fluid
**FIRE-RESISTANT FLUID ISO 46 (1585 GAL)**

## COMPONENT CONDITION SUMMARY

▲ Particle Trend




## RECOMMENDATION

No corrective action is recommended at this time.
Resample at the next service interval to monitor.

## PROBLEMATIC TEST RESULTS

| Sample Status | | | | ATTENTION | NORMAL | ATTENTION |
|---|---|---|---|---|---|---|
| Particles >14µm | | ASTM D7647 | >160 | ▲ **207** | 110 | ▲ 181 |
| Particles >21µm | | ASTM D7647 | >40 | ▲ **70** | 37 | ▲ 61 |
| Particles >38µm | | ASTM D7647 | >10 | ▲ **11** | 6 | 9 |
| Oil Cleanliness | | ISO 4406 (c) | >19/17/14 | ▲ **18/17/15** | 17/17/14 | ▲ 18/17/15 |

**Customer Id:** OUTCALAL
**Sample No.:** RP0038422
**Lab Number:** 05938918
**Test Package:** IND 2

*To manage this report scan the QR code*

*To discuss the diagnosis or test data:*
Doug Bogart +1 (800)237-1369 x4016
dougb@wearcheckusa.com

*To change component or sample information:*
Customer Service +1 1-800-237-1369
customerservice@wearcheck.com

## RECOMMENDED ACTIONS

*There are no recommended actions for this sample.*

## HISTORICAL DIAGNOSIS

**26 Jul 2023 Diag: Jonathan Hester**

NORMAL

No corrective action is recommended at this time. Resample at the next service interval to monitor.All component wear rates are normal. There is no indication of any contamination in the oil. The amount and size of particulates present in the system are acceptable. The pH level of this fluid is within the acceptable limits at 11.0. The condition of the oil is acceptable for the time in service.

**view report**

**28 Jun 2023 Diag: Jonathan Hester**

ISO

No corrective action is recommended at this time. Resample at the next service interval to monitor.All component wear rates are normal. There is a moderate amount of particulates present in the oil. The pH level of this fluid is within the acceptable limits. pH is 9.0. The condition of the oil is acceptable for the time in service.

**view report**

**31 May 2023 Diag: Jonathan Hester**

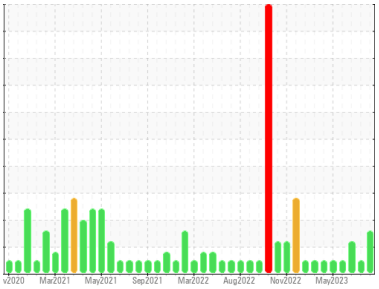
NORMAL

No corrective action is recommended at this time. Resample at the next service interval to monitor.All component wear rates are normal. There is no indication of any contamination in the oil. The amount and size of particulates present in the system are acceptable. The pH level of this fluid is within the acceptable limits at 9.0. The condition of the oil is acceptable for the time in service.

**view report**

# OIL ANALYSIS REPORT

Sample Rating Trend



ISO

Area
## MELT SHOP - HYDRAULIC
Machine Id
## MELT SHOP EAF MAIN HYDRAULIC UNIT (S/N 15-2000-0815-0010)
Component
**Tank Hydraulic System**
Fluid
**FIRE-RESISTANT FLUID ISO 46 (1585 GAL)**

## DIAGNOSIS

**Recommendation**
No corrective action is recommended at this time. Resample at the next service interval to monitor.

**Wear**
All component wear rates are normal.

**Contamination**
There is a moderate amount of particulates present in the oil.

**Fluid Condition**
The pH level of this fluid is within the acceptable limits @ 9.0. The condition of the oil is acceptable for the time in service.

| SAMPLE INFORMATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Sample Number | | Client Info | | **RP0038422** | RP0034891 | RP0035151 |
| Sample Date | | Client Info | | **29 Aug 2023** | 26 Jul 2023 | 28 Jun 2023 |
| Machine Age | hrs | Client Info | | **0** | 0 | 0 |
| Oil Age | hrs | Client Info | | **0** | 0 | 0 |
| Oil Changed | | Client Info | | **N/A** | N/A | N/A |
| Sample Status | | | | **ATTENTION** | NORMAL | ATTENTION |

| WEAR METALS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Iron | ppm | ASTM D5185m | >20 | **0** | 1 | 0 |
| Chromium | ppm | ASTM D5185m | >20 | **<1** | 1 | 0 |
| Nickel | ppm | ASTM D5185m | >20 | **0** | <1 | 0 |
| Titanium | ppm | ASTM D5185m | | **0** | 0 | 0 |
| Silver | ppm | ASTM D5185m | | **0** | 0 | 0 |
| Aluminum | ppm | ASTM D5185m | >20 | **<1** | <1 | <1 |
| Lead | ppm | ASTM D5185m | >20 | **0** | 0 | 0 |
| Copper | ppm | ASTM D5185m | >20 | **<1** | 1 | 0 |
| Tin | ppm | ASTM D5185m | >20 | **<1** | <1 | 0 |
| Vanadium | ppm | ASTM D5185m | | **0** | <1 | 0 |
| Cadmium | ppm | ASTM D5185m | | **0** | <1 | 0 |

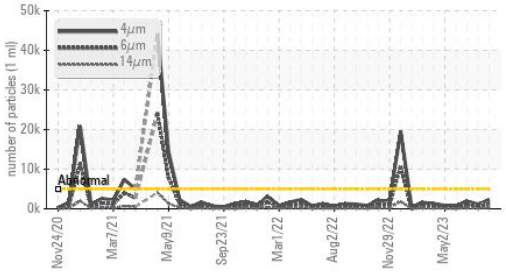
| ADDITIVES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Boron | ppm | ASTM D5185m | 5 | **0** | 2 | 0 |
| Barium | ppm | ASTM D5185m | 5 | **0** | 1 | 0 |
| Molybdenum | ppm | ASTM D5185m | 5 | **0** | 0 | 0 |
| Manganese | ppm | ASTM D5185m | | **0** | <1 | 0 |
| Magnesium | ppm | ASTM D5185m | 5 | **0** | 0 | 4 |
| Calcium | ppm | ASTM D5185m | 50 | **<1** | <1 | 0 |
| Phosphorus | ppm | ASTM D5185m | 175 | **8** | 8 | 1 |
| Zinc | ppm | ASTM D5185m | 62 | **9** | 12 | 0 |

| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Silicon | ppm | ASTM D5185m | >15 | **<1** | 2 | 0 |
| Sodium | ppm | ASTM D5185m | | **0** | 11 | 0 |
| Potassium | ppm | ASTM D5185m | >20 | **<1** | 2 | <1 |
| Water | % | ASTM D6304 | >55 | **39.2** | 38.5 | 34.8 |
| ppm Water | ppm | ASTM D6304 | >55000 | **392000** | 385000 | 348000 |

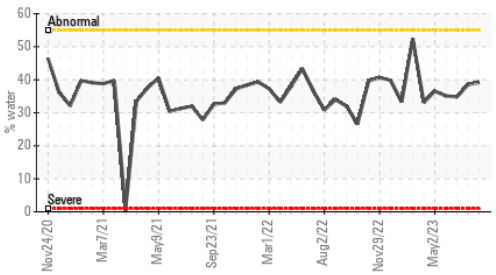
| FLUID CLEANLINESS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Particles >4µm | | ASTM D7647 | >5000 | **2236** | 1183 | 1949 |
| Particles >6µm | | ASTM D7647 | >1300 | **1218** | 645 | 1062 |
| Particles >14µm | | ASTM D7647 | >160 | ▲ **207** | 110 | ▲ 181 |
| Particles >21µm | | ASTM D7647 | >40 | ▲ **70** | 37 | ▲ 61 |
| Particles >38µm | | ASTM D7647 | >10 | ▲ **11** | 6 | 9 |
| Particles >71µm | | ASTM D7647 | >3 | **1** | 1 | 1 |
| Oil Cleanliness | | ISO 4406 (c) | >19/17/14 | ▲ **18/17/15** | 17/17/14 | ▲ 18/17/15 |

# OIL ANALYSIS REPORT

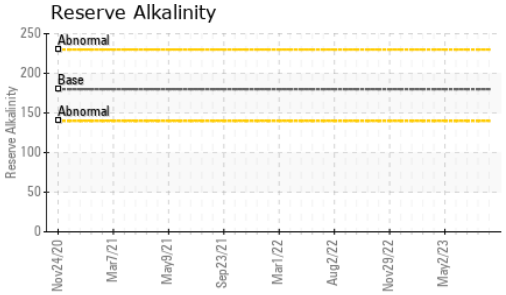
Particle Trend



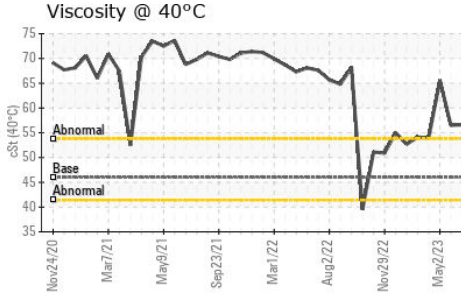

Water



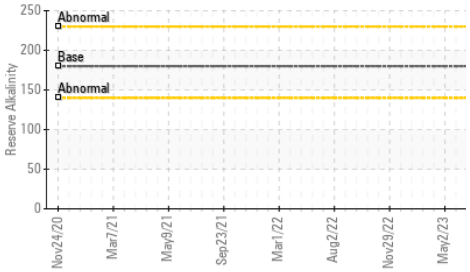

Reserve Alkalinity




Viscosity @ 40°C

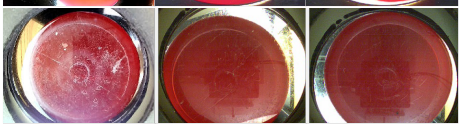



Reserve Alkalinity



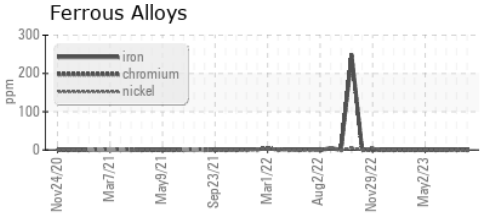

| VISUAL | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| White Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Precipitate | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| 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 | >55 | **0.2%** | 0.2% | 0.2% |
| Free Water | scalar | *Visual | | **NEG** | NEG | NEG |

| FLUID PROPERTIES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| pH | Scale 0-14 | ASTM D1287 | | **9.00** | 11.0 | 9.00 |
| Visc @ 40°C | cSt | ASTM D445 | 46 | **57.8** | 56.9 | 56.6 |

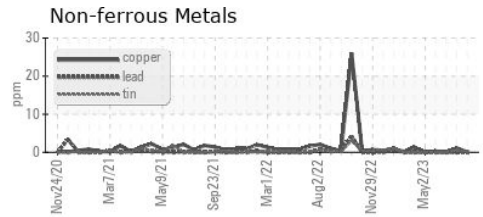
| SAMPLE IMAGES | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|
| Color | | |  | | |
| Bottom | | |  | | |

## GRAPHS

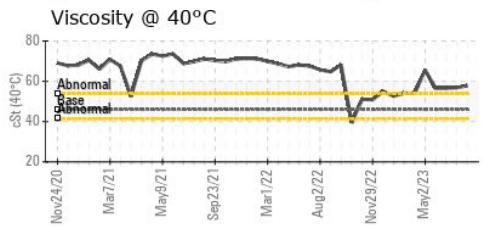
Ferrous Alloys



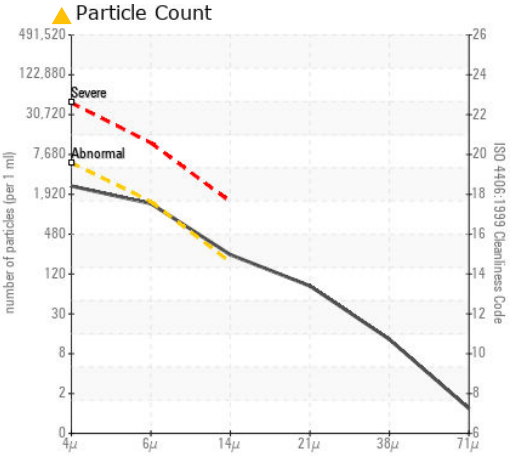

Non-ferrous Metals



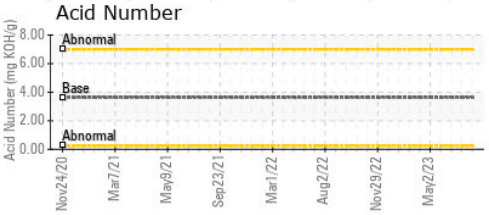

Viscosity @ 40°C




Particle Count




Acid Number




Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513
**Sample No.** : RP0038422 **Received** : 30 Aug 2023
**Lab Number** : 05938918 **Diagnosed** : 01 Sep 2023
**Unique Number** : 10629530 **Diagnostician** : Doug Bogart
**Test Package** : IND 2 ( Additional Tests: pH, ReserveAlk )

*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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