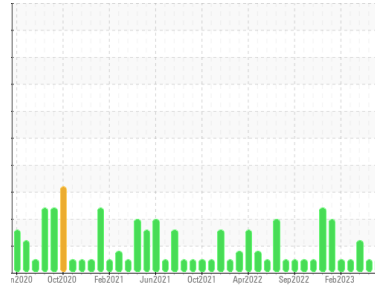




OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



Area
MELT SHOP - HYDRAULIC
 Machine Id
MELT SHOP EAF-DE-SLAG HYDRAULIC UNIT (S/N 15-2000-0770)
 Component
Tank Hydraulic System
 Fluid
FIRE-RESISTANT FLUID ISO 46 (200 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 no indication of any contamination in the oil. The amount and size of particulates present in the system are acceptable.

Fluid Condition

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.

SAMPLE INFORMATION

| | method | limit/base | current | history1 | history2 |
|---------------|-------------|-------------|--------------------|-------------|-------------|
| Sample Number | Client Info | | RP0034921 | RP0034598 | RP0030522 |
| Sample Date | Client Info | | 31 May 2023 | 02 May 2023 | 30 Mar 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 | | | NORMAL | NORMAL | ATTENTION |

WEAR METALS

| | method | limit/base | current | history1 | history2 |
|----------|--------|-----------------|--------------|----------|----------|
| Iron | ppm | ASTM D5185m >20 | 0 | 0 | 0 |
| Chromium | ppm | ASTM D5185m >20 | 0 | 0 | 0 |
| Nickel | ppm | ASTM D5185m >20 | 0 | 0 | 0 |
| Titanium | ppm | ASTM D5185m | 0 | 0 | 0 |
| Silver | ppm | ASTM D5185m | 0 | 0 | <1 |
| Aluminum | ppm | ASTM D5185m >20 | 0 | 6 | 0 |
| Lead | ppm | ASTM D5185m >20 | 0 | 0 | 0 |
| Copper | ppm | ASTM D5185m >20 | <1 | 0 | 1 |
| Tin | ppm | ASTM D5185m >20 | 0 | 0 | 0 |
| 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 5 | 0 | 0 | 0 |
| Barium | ppm | ASTM D5185m 5 | 0 | 0 | 0 |
| Molybdenum | ppm | ASTM D5185m 5 | 0 | 0 | 0 |
| Manganese | ppm | ASTM D5185m | 0 | 0 | 0 |
| Magnesium | ppm | ASTM D5185m 5 | 0 | 4 | <1 |
| Calcium | ppm | ASTM D5185m 50 | 0 | 0 | <1 |
| Phosphorus | ppm | ASTM D5185m 175 | 2 | 0 | 62 |
| Zinc | ppm | ASTM D5185m 62 | 0 | 0 | 5 |

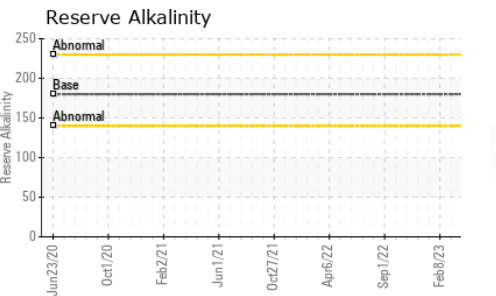
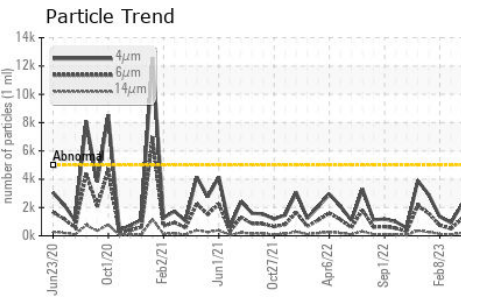
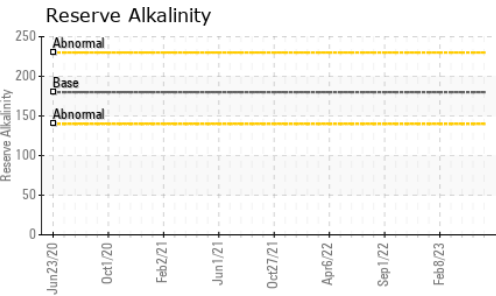
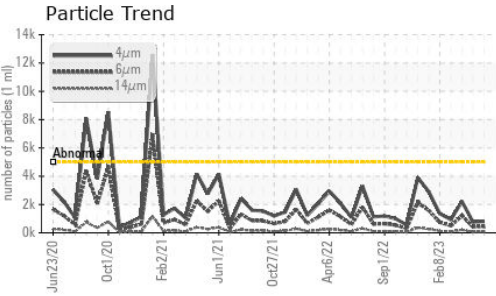
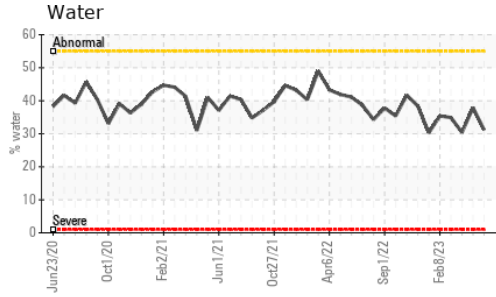
CONTAMINANTS

| | method | limit/base | current | history1 | history2 |
|-----------|--------|-------------------|---------------|----------|----------|
| Silicon | ppm | ASTM D5185m >15 | 0 | 0 | 2 |
| Sodium | ppm | ASTM D5185m | 0 | 0 | 0 |
| Potassium | ppm | ASTM D5185m >20 | <1 | 0 | <1 |
| Water | % | ASTM D6304 >55 | 31.2 | 37.9 | 30.4 |
| ppm Water | ppm | ASTM D6304 >55000 | 312000 | 379000 | 304000 |

FLUID CLEANLINESS

| | method | limit/base | current | history1 | history2 |
|-----------------|--------------|------------|-----------------|----------|------------|
| Particles >4µm | ASTM D7647 | >5000 | 800 | 757 | 2218 |
| Particles >6µm | ASTM D7647 | >1300 | 436 | 412 | 1208 |
| Particles >14µm | ASTM D7647 | >160 | 74 | 70 | ▲ 206 |
| Particles >21µm | ASTM D7647 | >40 | 25 | 24 | ▲ 69 |
| Particles >38µm | ASTM D7647 | >10 | 4 | 4 | 11 |
| Particles >71µm | ASTM D7647 | >3 | 0 | 0 | 1 |
| Oil Cleanliness | ISO 4406 (c) | >19/17/14 | 17/16/13 | 17/16/13 | ▲ 18/17/15 |

OIL ANALYSIS REPORT



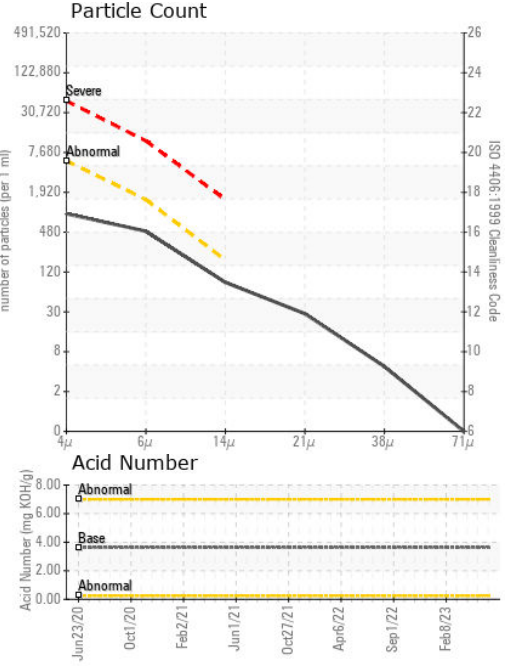
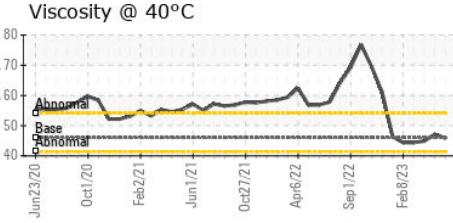
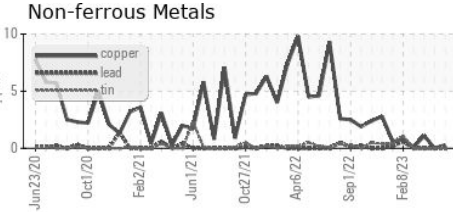
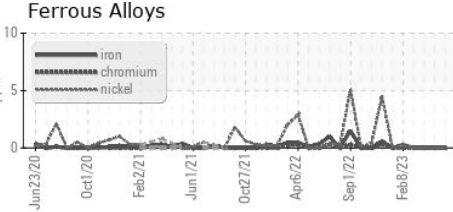
| VISUAL | method | limit/base | current | history1 | history2 |
|------------------|--------|------------|---------|--------------|----------|
| White Metal | scalar | *Visual | NONE | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | NONE | NONE |
| Precipitate | scalar | *Visual | NONE | NONE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

| FLUID PROPERTIES | method | limit/base | current | history1 | history2 |
|------------------|------------|------------|-------------|----------|----------|
| pH | Scale 0-14 | ASTM D1287 | 9.00 | 9.00 | 9.00 |
| Visc @ 40°C | cSt | ASTM D445 | 46 | 47.0 | 44.9 |

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



GRAPHS



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : RP0034921 **Received** : 02 Jun 2023
Lab Number : **05863112** **Diagnosed** : 05 Jun 2023
Unique Number : 10497577 **Diagnostician** : Jonathan Hester
Test Package : IND 2 (Additional Tests: pH, ReserveAlk)

OUTOKUMPU STAINLESS USA
 HWY 43 N
 CALVERT, AL
 US 36513
 Contact: MARIO JOHNSON
 Mario.johnson@outokumpu.com
 T: (251)321-4105
 F: x:

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)