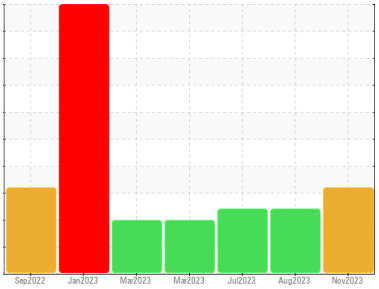
KIMBRO FLUID SOLUTIONS

# PROBLEM SUMMARY

Sample Rating Trend

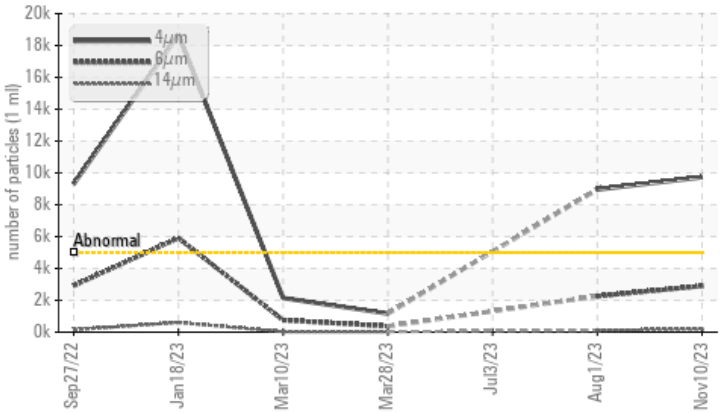



**DEGRADATION**

Area
## HOTLINE/PUSHER FURNACES
Machine Id
## #1 PUSHER MAIN HYD SYS 1406-A10-0190
Component
**Hydraulic System**
Fluid
**BENZ OIL ULTRA GUARD 552 (--- GAL)**

## COMPONENT CONDITION SUMMARY

### Particle Trend




### Acid Number


## RECOMMENDATION

We recommend you service the filters on this component. Resample at the next service interval to monitor. Please submit a sample of the new (unused) oil to establish a baseline.

## PROBLEMATIC TEST RESULTS

| Sample Status | | | | ABNORMAL | ATTENTION | ABNORMAL |
|---|---|---|---|---|---|---|
| Particles >4µm | | ASTM D7647 | >5000 | ▲ **9723** | ▲ 8959 | --- |
| Particles >6µm | | ASTM D7647 | >1300 | ▲ **2903** | ▲ 2255 | --- |
| Particles >14µm | | ASTM D7647 | >160 | ▲ **191** | 107 | --- |
| Particles >21µm | | ASTM D7647 | >40 | ▲ **57** | 31 | --- |
| Oil Cleanliness | | ISO 4406 (c) | >19/17/14 | ▲ **20/19/15** | ▲ 20/18/14 | --- |
| Acid Number (AN) | mg KOH/g | ASTM D8045 | | ▲ **7.53** | ▲ 3.97 | ▲ 3.92 |


**Customer Id:** CONMUSAL
**Sample No.:** KFS0004931
**Lab Number:** 06007648
**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

| Action | Status | Date | Done By | Description |
|---|---|---|---|---|
| Change Filter | --- | --- | ? | We recommend you service the filters on this component. |
| Resample | --- | --- | ? | Please submit a sample of the new (unused) oil to establish a baseline. |

## HISTORICAL DIAGNOSIS

**01 Aug 2023 Diag: Angela Borella**

**DEGRADATION**

Resample at the next service interval to monitor. Please submit a sample of the new (unused) oil to establish a baseline.All component wear rates are normal. There is no indication of any contamination in the oil. The AN level is above the recommended limit.

**view report**

**03 Jul 2023 Diag: Doug Bogart**

**VISUAL METAL**

We recommend you service the filters on this component. We advise that you inspect for the source(s) of metal. Resample at the next service interval to monitor. Please submit a sample of the new (unused) oil to establish a baseline. We were unable to perform a particle count due to metal particles present in this sample.Moderate concentration of visible metal present. All component wear rates are normal. No other contaminants were detected in the oil. The AN level is above the recommended limit.

**view report**

**28 Mar 2023 Diag: Doug Bogart**

**DEGRADATION**

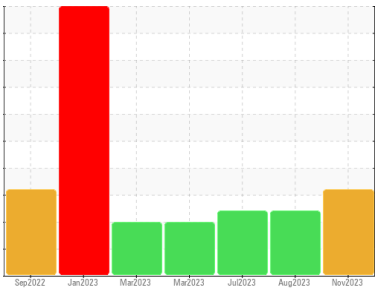
Resample at the next service interval to monitor. Please submit a sample of the new (unused) oil to establish a baseline.The tin level has decreased, but is still abnormal. All other component wear rates are normal. The amount and size of particulates present in the system are acceptable. There is no indication of any contamination in the oil. The AN level is above the recommended limit.

**view report**

KIMBRO FLUID SOLUTIONS

# OIL ANALYSIS REPORT

Sample Rating Trend




**DEGRADATION**

Area
## HOTLINE/PUSHER FURNACES
Machine Id
## #1 PUSHER MAIN HYD SYS 1406-A10-0190
Component
**Hydraulic System**
Fluid
**BENZ OIL ULTRA GUARD 552 (--- GAL)**

## DIAGNOSIS

**Recommendation**
We recommend you service the filters on this component. Resample at the next service interval to monitor. Please submit a sample of the new (unused) oil to establish a baseline.

**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 above the recommended limit.

| SAMPLE INFORMATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Sample Number | | Client Info | | **KFS0004931** | KFS0003809 | KFS0003777 |
| Sample Date | | Client Info | | **10 Nov 2023** | 01 Aug 2023 | 03 Jul 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 | | | | **ABNORMAL** | ATTENTION | ABNORMAL |

| CONTAMINATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Water | | WC Method | >0.05 | **NEG** | NEG | NEG |

| WEAR METALS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Iron | ppm | ASTM D5185m | >20 | **0** | 0 | 0 |
| Chromium | ppm | ASTM D5185m | >20 | **0** | <1 | <1 |
| Nickel | ppm | ASTM D5185m | >20 | **0** | 0 | 0 |
| Titanium | ppm | ASTM D5185m | | **0** | <1 | 0 |
| Silver | ppm | ASTM D5185m | | **0** | 0 | 0 |
| Aluminum | ppm | ASTM D5185m | >20 | **0** | <1 | 0 |
| Lead | ppm | ASTM D5185m | >20 | **0** | 0 | 0 |
| Copper | ppm | ASTM D5185m | >20 | **0** | <1 | <1 |
| Tin | ppm | ASTM D5185m | >20 | **16** | 15 | 14 |
| Vanadium | ppm | ASTM D5185m | | **0** | <1 | <1 |
| Cadmium | ppm | ASTM D5185m | | **0** | <1 | 0 |

| ADDITIVES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Boron | ppm | ASTM D5185m | | **0** | 0 | 0 |
| Barium | ppm | ASTM D5185m | | **0** | <1 | 0 |
| Molybdenum | ppm | ASTM D5185m | | **0** | 0 | 0 |
| Manganese | ppm | ASTM D5185m | | **0** | <1 | 0 |
| Magnesium | ppm | ASTM D5185m | | **<1** | 8 | 1 |
| Calcium | ppm | ASTM D5185m | | **0** | <1 | 0 |
| Phosphorus | ppm | ASTM D5185m | | **328** | 326 | 329 |
| Zinc | ppm | ASTM D5185m | | **9** | 22 | <1 |
| Sulfur | ppm | ASTM D5185m | | **1078** | 1182 | 1316 |

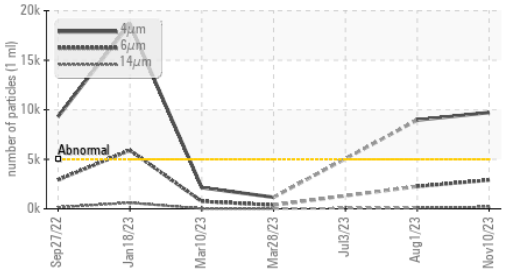
| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Silicon | ppm | ASTM D5185m | >15 | **<1** | <1 | 1 |
| Sodium | ppm | ASTM D5185m | | **0** | <1 | 0 |
| Potassium | ppm | ASTM D5185m | >20 | **<1** | 2 | <1 |

| FLUID CLEANLINESS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Particles >4µm | | ASTM D7647 | >5000 | ▲ **9723** | ▲ 8959 | --- |
| Particles >6µm | | ASTM D7647 | >1300 | ▲ **2903** | ▲ 2255 | --- |
| Particles >14µm | | ASTM D7647 | >160 | ▲ **191** | 107 | --- |
| Particles >21µm | | ASTM D7647 | >40 | ▲ **57** | 31 | --- |
| Particles >38µm | | ASTM D7647 | >10 | **5** | 4 | --- |
| Particles >71µm | | ASTM D7647 | >3 | **1** | 1 | --- |
| Oil Cleanliness | | ISO 4406 (c) | >19/17/14 | ▲ **20/19/15** | ▲ 20/18/14 | --- |

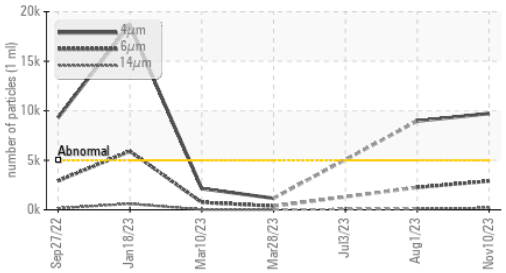
| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Acid Number (AN) | mg KOH/g | ASTM D8045 | | ▲ **7.53** | ▲ 3.97 | ▲ 3.92 |

# OIL ANALYSIS REPORT

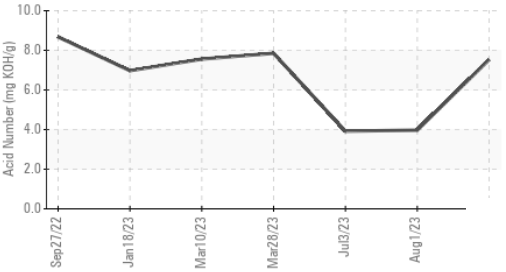
Particle Trend



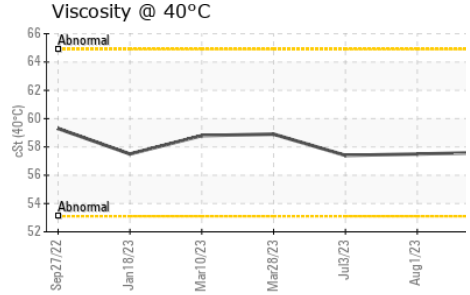

Particle Trend




Acid Number

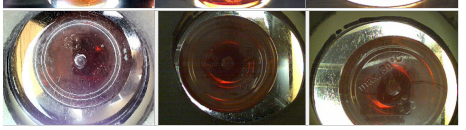



Viscosity @ 40°C



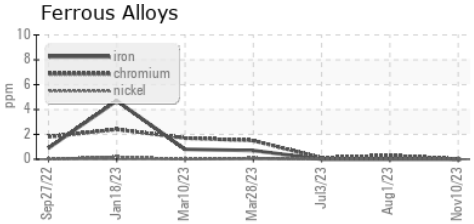

| VISUAL | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| White Metal | scalar | *Visual | NONE | **NONE** | NONE | ▲ MODER |
| Yellow Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Precipitate | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Silt | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Debris | scalar | *Visual | NONE | **LIGHT** | LIGHT | 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 | >0.05 | **NEG** | NEG | NEG |
| Free Water | scalar | *Visual | | **NEG** | NEG | NEG |

| FLUID PROPERTIES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Visc @ 40°C | cSt | ASTM D445 | | **57.6** | 57.5 | 57.4 |

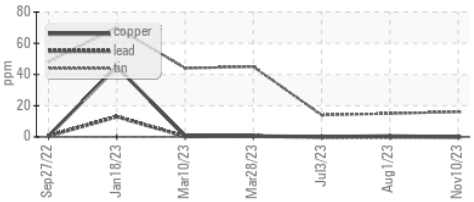
| SAMPLE IMAGES | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|
| Color | | |  | | |
| Bottom | | |  | | |

## GRAPHS

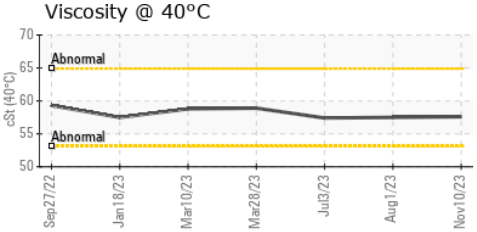
Ferrous Alloys



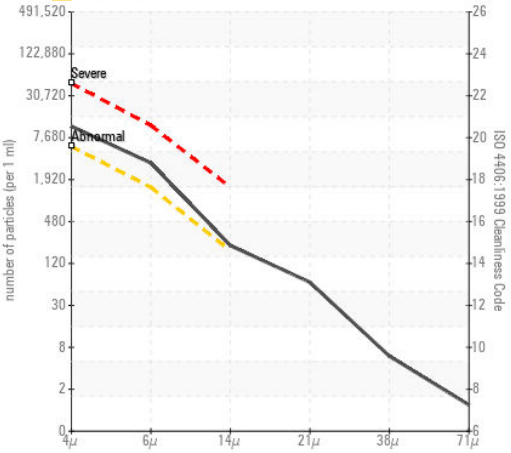

Non-ferrous Metals



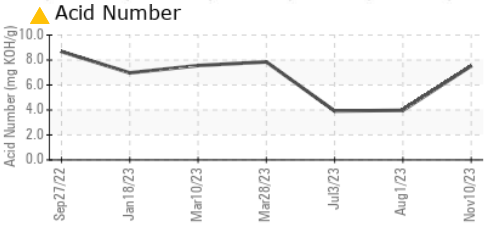

Viscosity @ 40°C




Particle Count




Acid Number




Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513
**Sample No.** : KFS0004931
**Lab Number** : 06007648
**Unique Number** : 10741410
**Test Package** : IND 2

**Received** : 14 Nov 2023
**Diagnosed** : 06 Dec 2023
**Diagnostician** : Doug Bogart

*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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