



OIL ANALYSIS REPORT

Sample Rating Trend



DIRT



Machine Id
DZ-9
 Component
Rear Left Final Drive
 Fluid
{not provided} (--- GAL)

DIAGNOSIS

- Recommendation**
We advise that you check all areas where dirt can enter the system. The oil change at the time of sampling has been noted. We recommend an early resample to monitor this condition.
- Wear**
Gear wear is indicated.
- Contamination**
Elemental levels of silicon (Si) and aluminum (Al) indicate alumina-silicate (coarse dirt) ingress.
- Fluid Condition**
The AN level is acceptable for this fluid.

SAMPLE INFORMATION

| | method | limit/base | current | history1 | history2 |
|---------------|-------------|-------------|--------------------|----------|----------|
| Sample Number | Client Info | | KFS0002894 | --- | --- |
| Sample Date | Client Info | | 25 Sep 2023 | --- | --- |
| Machine Age | hrs | Client Info | 4792 | --- | --- |
| Oil Age | hrs | Client Info | 0 | --- | --- |
| Oil Changed | Client Info | | Changed | --- | --- |
| Sample Status | | | SEVERE | --- | --- |

CONTAMINATION

| | method | limit/base | current | history1 | history2 |
|-------|-----------|------------|------------|----------|----------|
| Water | WC Method | >0.2 | NEG | --- | --- |

WEAR METALS

| | method | limit/base | current | history1 | history2 |
|----------|--------|------------------|--------------|----------|----------|
| Iron | ppm | ASTM D5185m >500 | ▲ 519 | --- | --- |
| Chromium | ppm | ASTM D5185m >10 | 8 | --- | --- |
| Nickel | ppm | ASTM D5185m >10 | 2 | --- | --- |
| Titanium | ppm | ASTM D5185m | <1 | --- | --- |
| Silver | ppm | ASTM D5185m | 0 | --- | --- |
| Aluminum | ppm | ASTM D5185m >25 | ● 22 | --- | --- |
| Lead | ppm | ASTM D5185m >25 | 0 | --- | --- |
| Copper | ppm | ASTM D5185m >50 | 10 | --- | --- |
| Tin | ppm | ASTM D5185m >10 | 0 | --- | --- |
| Vanadium | ppm | ASTM D5185m | <1 | --- | --- |
| Cadmium | ppm | ASTM D5185m | 0 | --- | --- |

ADDITIVES

| | method | limit/base | current | history1 | history2 |
|------------|--------|-------------|--------------|----------|----------|
| Boron | ppm | ASTM D5185m | 161 | --- | --- |
| Barium | ppm | ASTM D5185m | 0 | --- | --- |
| Molybdenum | ppm | ASTM D5185m | 7 | --- | --- |
| Manganese | ppm | ASTM D5185m | 6 | --- | --- |
| Magnesium | ppm | ASTM D5185m | 26 | --- | --- |
| Calcium | ppm | ASTM D5185m | 180 | --- | --- |
| Phosphorus | ppm | ASTM D5185m | 887 | --- | --- |
| Zinc | ppm | ASTM D5185m | 106 | --- | --- |
| Sulfur | ppm | ASTM D5185m | 18922 | --- | --- |

CONTAMINANTS

| | method | limit/base | current | history1 | history2 |
|-----------|--------|-----------------|--------------|----------|----------|
| Silicon | ppm | ASTM D5185m >75 | ▲ 246 | --- | --- |
| Sodium | ppm | ASTM D5185m | 1 | --- | --- |
| Potassium | ppm | ASTM D5185m >20 | 3 | --- | --- |

FLUID DEGRADATION

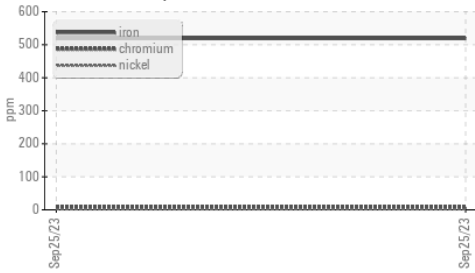
| | method | limit/base | current | history1 | history2 |
|------------------|----------|------------|-------------|----------|----------|
| Acid Number (AN) | mg KOH/g | ASTM D8045 | 0.93 | --- | --- |

OIL ANALYSIS REPORT

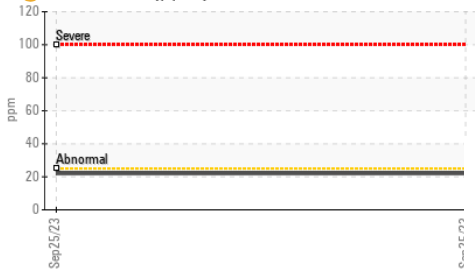
▲ Ferrous Alloys



▲ Ferrous Alloys



● Aluminum (ppm)



Acid Number



Viscosity @ 40°C



| VISUAL | method | limit/base | current | history1 | history2 |
|------------------|--------|------------|---------|----------|----------|
| White Metal | scalar | *Visual | NONE | NONE | --- |
| Yellow Metal | scalar | *Visual | NONE | NONE | --- |
| Precipitate | scalar | *Visual | NONE | NONE | --- |
| Silt | scalar | *Visual | NONE | NONE | --- |
| Debris | scalar | *Visual | NONE | NONE | --- |
| Sand/Dirt | scalar | *Visual | NONE | NONE | --- |
| Appearance | scalar | *Visual | NORML | NORML | --- |
| Odor | scalar | *Visual | NORML | NORML | --- |
| Emulsified Water | scalar | *Visual | >0.2 | NEG | --- |
| Free Water | scalar | *Visual | | NEG | --- |

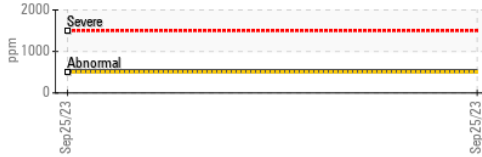
| FLUID PROPERTIES | method | limit/base | current | history1 | history2 |
|------------------|--------|------------|---------|----------|----------|
| Visc @ 40°C | cSt | ASTM D445 | 308 | --- | --- |

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

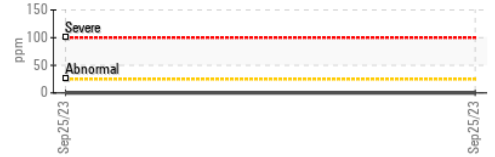
| | | | | | | |
|--------|--|--|--|----------|----------|----------|
| Color | | | | no image | no image | no image |
| Bottom | | | | no image | no image | no image |

GRAPHS

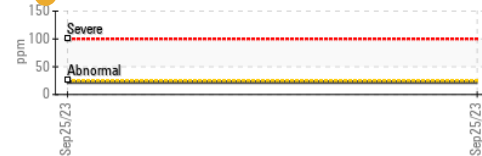
▲ Iron (ppm)



Lead (ppm)



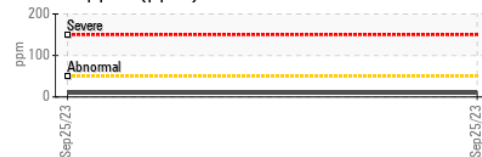
● Aluminum (ppm)



Chromium (ppm)



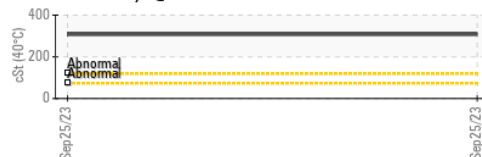
Copper (ppm)



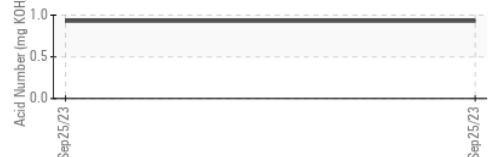
▲ Silicon (ppm)



Viscosity @ 40°C



Acid Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513

Sample No. : KFS0002894

Lab Number : 05965519

Unique Number : 10672070

Test Package : MOB 2

Received : 29 Sep 2023

Tested : 02 Oct 2023

Diagnosed : 02 Oct 2023 - Don Baldrige

HARNES LLC

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COLUMBIA, TN

US 38401

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F:

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)