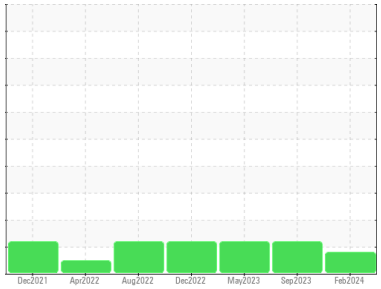
# OIL ANALYSIS REPORT

Sample Rating Trend




ISO

Area
**DICK LAVY**
Machine Id
**DICK LAVY 4855**
Component
**Rear Differential**
Fluid
**GEAR OIL SAE 75W90 (--- 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 high amount of silt (particulates < 14 microns in size) present in the fluid.

**Fluid Condition**
The AN level is acceptable for this fluid. The condition of the fluid is suitable for further service.

| SAMPLE INFORMATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Sample Number | | Client Info | | **WC0900817** | WC0853915 | WC0828539 |
| Sample Date | | Client Info | | **22 Feb 2024** | 22 Sep 2023 | 11 May 2023 |
| Machine Age | mls | Client Info | | **326094** | 261888 | 208344 |
| Oil Age | mls | Client Info | | **0** | 0 | 208344 |
| Oil Changed | | Client Info | | **N/A** | N/A | N/A |
| Sample Status | | | | **ABNORMAL** | ABNORMAL | ABNORMAL |

| WEAR METALS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Iron | ppm | ASTM D5185m | >500 | **213** | 194 | 172 |
| Chromium | ppm | ASTM D5185m | >10 | **2** | 2 | 2 |
| Nickel | ppm | ASTM D5185m | >10 | **0** | 0 | <1 |
| Titanium | ppm | ASTM D5185m | | **<1** | <1 | <1 |
| Silver | ppm | ASTM D5185m | | **0** | 0 | 0 |
| Aluminum | ppm | ASTM D5185m | >25 | **4** | 4 | 3 |
| Lead | ppm | ASTM D5185m | >25 | **0** | 0 | 0 |
| Copper | ppm | ASTM D5185m | >100 | **2** | 2 | 2 |
| Tin | ppm | ASTM D5185m | >10 | **<1** | <1 | <1 |
| 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 | 400 | **146** | 147 | 138 |
| Barium | ppm | ASTM D5185m | 200 | **0** | <1 | <1 |
| Molybdenum | ppm | ASTM D5185m | 12 | **<1** | 0 | <1 |
| Manganese | ppm | ASTM D5185m | | **15** | 15 | 14 |
| Magnesium | ppm | ASTM D5185m | 12 | **8** | 8 | 8 |
| Calcium | ppm | ASTM D5185m | 150 | **26** | 23 | 22 |
| Phosphorus | ppm | ASTM D5185m | 1650 | **1051** | 1048 | 1076 |
| Zinc | ppm | ASTM D5185m | 125 | **19** | 11 | 17 |
| Sulfur | ppm | ASTM D5185m | 22500 | **25833** | 22167 | 29380 |

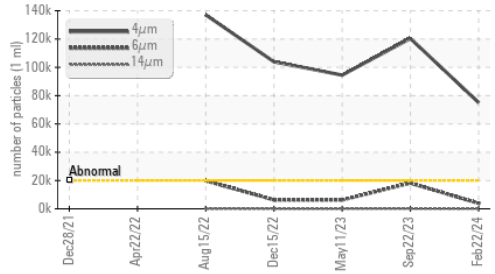
| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Silicon | ppm | ASTM D5185m | >75 | **35** | 37 | 24 |
| Sodium | ppm | ASTM D5185m | | **4** | 4 | 3 |
| Potassium | ppm | ASTM D5185m | >20 | **5** | 2 | 3 |
| Water | % | ASTM D6304 | >.2 | **0.036** | 0.031 | 0.025 |
| ppm Water | ppm | ASTM D6304 | >2000 | **370** | 310.4 | 251.1 |

| FLUID CLEANLINESS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Particles >4µm | | ASTM D7647 | >20000 | ▲ **75085** | ▲ 120397 | ▲ 94485 |
| Particles >6µm | | ASTM D7647 | >5000 | **3884** | ▲ 18192 | ● 6209 |
| Particles >14µm | | ASTM D7647 | >640 | **22** | 25 | 16 |
| Particles >21µm | | ASTM D7647 | >160 | **5** | 8 | 4 |
| Particles >38µm | | ASTM D7647 | >40 | **0** | 1 | 1 |
| Particles >71µm | | ASTM D7647 | >10 | **0** | 1 | 1 |
| Oil Cleanliness | | ISO 4406 (c) | >21/19/16 | ▲ **23/19/12** | ▲ 24/21/12 | ▲ 24/20/11 |

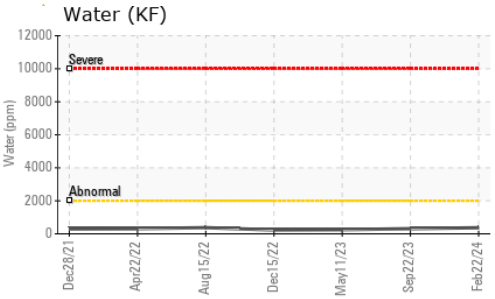
| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Acid Number (AN) | mg KOH/g | ASTM D8045 | 2.00 | **2.94** | 2.79 | 2.63 |

# OIL ANALYSIS REPORT

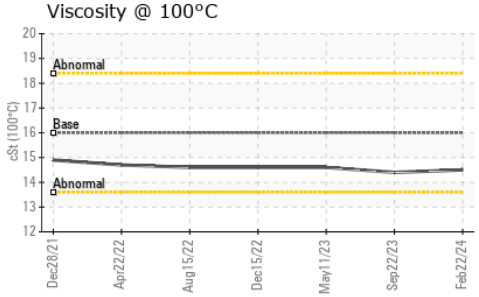
Particle Trend



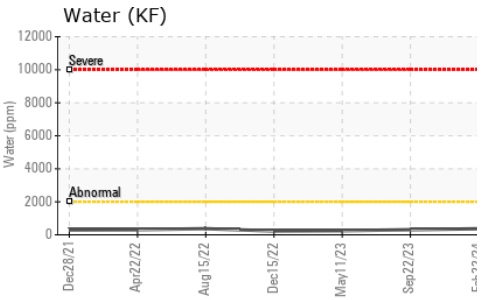

Water (KF)



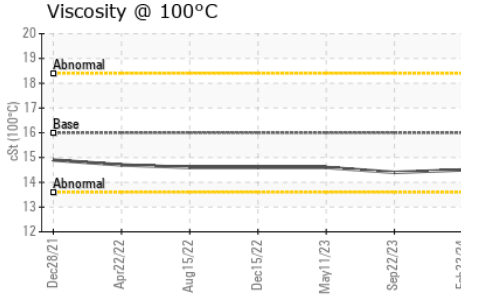

Viscosity @ 100°C




Water (KF)




Viscosity @ 100°C



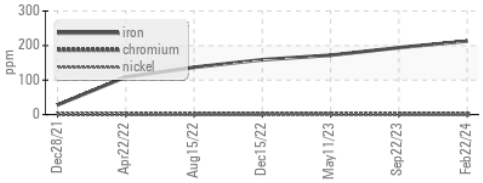

| VISUAL | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| White Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Precipitate | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| 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 | >.2 | **NEG** | NEG | NEG |
| Free Water | scalar | *Visual | | **NEG** | NEG | NEG |

| FLUID PROPERTIES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Visc @ 40°C | cSt | ASTM D445 | 109 | **96.9** | 96.4 | 96.3 |
| Visc @ 100°C | cSt | ASTM D445 | 16.0 | **14.5** | 14.4 | 14.6 |
| Viscosity Index (VI) | Scale | ASTM D2270 | 157 | **155** | 154 | 157 |

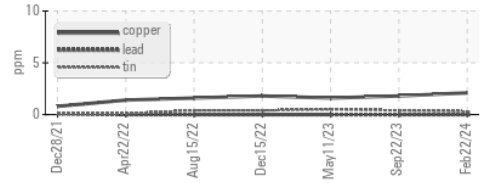
| SAMPLE IMAGES | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|
| Color | | |  | | |
| Bottom | | |  | | |

## GRAPHS

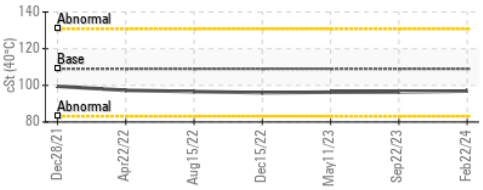
Ferrous Alloys



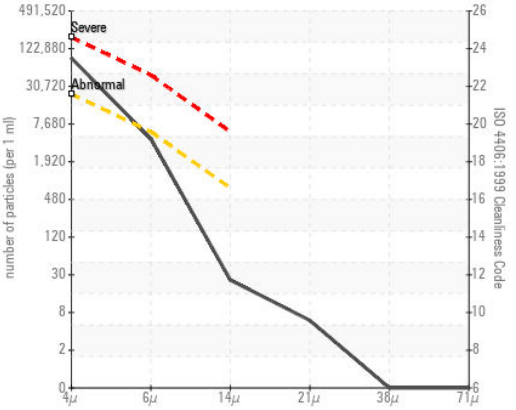

Non-ferrous Metals



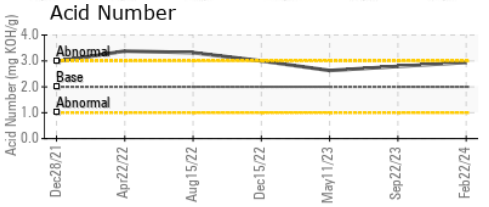

Viscosity @ 40°C




Particle Count




Acid Number




Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513
**Sample No.** : WC0900817 **Received** : 02 Apr 2024
**Lab Number** : 06136370 **Tested** : 03 Apr 2024
**Unique Number** : 10955835 **Diagnosed** : 04 Apr 2024 - Don Baldridge
**Test Package** : MOB 2 ( Additional Tests: KF, KV100, PrtCount, VI )

*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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Report Id: bastarhd [WUSCAR] 06136370 (Generated: 04/04/2024 16:49:58) Rev: 1

Submitted By: GIANNA CREDAROLI