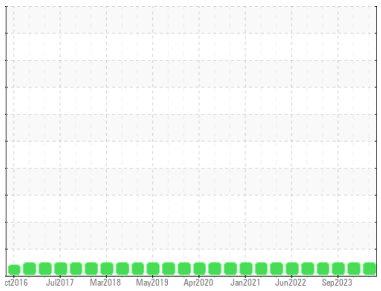
# OIL ANALYSIS REPORT

Area
**OKLAHOMA/102/EG - EXCAVATOR**
Machine Id
**20.511L [OKLAHOMA^102^EG - EXCAVATOR]**
Component
**Diesel Engine**
Fluid
**MOBIL DELVAC 1300 SUPER15W40 (--- GAL)**

Sample Rating Trend




**NORMAL**

## DIAGNOSIS

**Recommendation**
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.

**Fluid Condition**
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

| SAMPLE INFORMATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Sample Number | | Client Info | | **WC0908845** | WC0887026 | WC0848839 |
| Sample Date | | Client Info | | **10 Apr 2024** | 08 Jan 2024 | 26 Sep 2023 |
| Machine Age | hrs | Client Info | | **2020** | 535 | 8071 |
| Oil Age | hrs | Client Info | | **200** | 535 | 268 |
| Oil Changed | | Client Info | | **Changed** | Changed | Changed |
| Sample Status | | | | **NORMAL** | NORMAL | NORMAL |

| CONTAMINATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Fuel | | WC Method | >5 | **<1.0** | <1.0 | <1.0 |
| Water | | WC Method | >0.2 | **NEG** | NEG | NEG |
| Glycol | | WC Method | | **NEG** | NEG | NEG |

| WEAR METALS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Iron | ppm | ASTM D5185m | >100 | **5** | 4 | 13 |
| Chromium | ppm | ASTM D5185m | >20 | **<1** | 0 | <1 |
| Nickel | ppm | ASTM D5185m | >2 | **<1** | 0 | 0 |
| Titanium | ppm | ASTM D5185m | >2 | **<1** | 0 | 0 |
| Silver | ppm | ASTM D5185m | >2 | **0** | 0 | 0 |
| Aluminum | ppm | ASTM D5185m | >25 | **2** | 2 | 2 |
| Lead | ppm | ASTM D5185m | >40 | **<1** | 1 | 4 |
| Copper | ppm | ASTM D5185m | >330 | **<1** | 0 | <1 |
| Tin | ppm | ASTM D5185m | >15 | **<1** | <1 | <1 |
| Vanadium | ppm | ASTM D5185m | | **<1** | 0 | 0 |
| Cadmium | ppm | ASTM D5185m | | **<1** | 0 | 0 |

| ADDITIVES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Boron | ppm | ASTM D5185m | 0 | **59** | 59 | 37 |
| Barium | ppm | ASTM D5185m | 0 | **<1** | 0 | 0 |
| Molybdenum | ppm | ASTM D5185m | 0 | **42** | 40 | 59 |
| Manganese | ppm | ASTM D5185m | | **<1** | <1 | 0 |
| Magnesium | ppm | ASTM D5185m | 0 | **488** | 490 | 549 |
| Calcium | ppm | ASTM D5185m | | **1691** | 1707 | 1690 |
| Phosphorus | ppm | ASTM D5185m | | **743** | 828 | 794 |
| Zinc | ppm | ASTM D5185m | | **923** | 959 | 965 |
| Sulfur | ppm | ASTM D5185m | | **2615** | 2658 | 2877 |

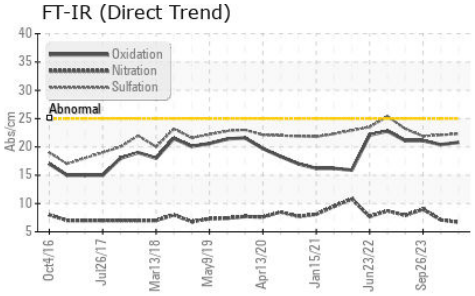
| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Silicon | ppm | ASTM D5185m | >25 | **4** | 3 | 4 |
| Sodium | ppm | ASTM D5185m | | **2** | 1 | <1 |
| Potassium | ppm | ASTM D5185m | >20 | **2** | 1 | 2 |

| INFRA-RED | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Soot % | % | *ASTM D7844 | >3 | **0.1** | 0.2 | 0.4 |
| Nitration | Abs/cm | *ASTM D7624 | >20 | **6.7** | 7.1 | 9.0 |
| Sulfation | Abs/.1mm | *ASTM D7415 | >30 | **22.3** | 22.1 | 21.9 |

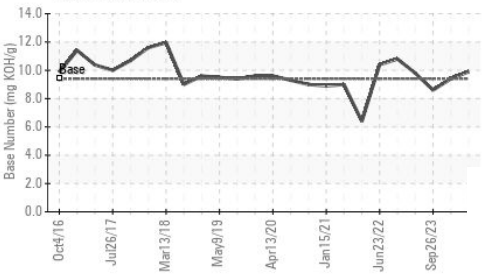
| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Oxidation | Abs/.1mm | *ASTM D7414 | >25 | **20.8** | 20.4 | 21.1 |
| Base Number (BN) | mg KOH/g | ASTM D2896 | 9.4 | **9.9** | 9.4 | 8.6 |

# OIL ANALYSIS REPORT

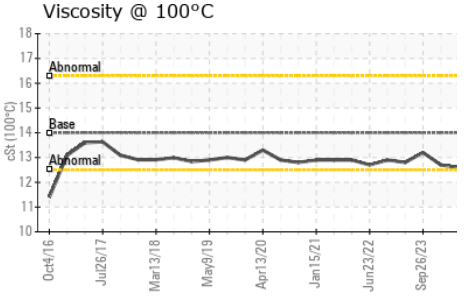
FT-IR (Direct Trend)




Base Number




Viscosity @ 100°C

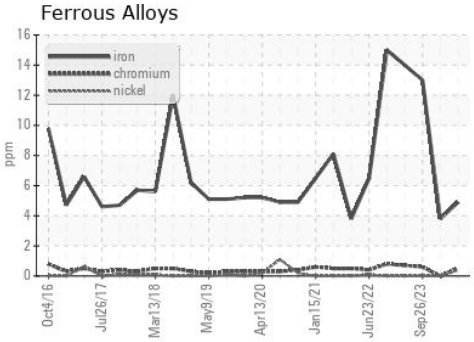



| VISUAL | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| White Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Precipitate | scalar | *Visual | NONE | **NONE** | NONE | NONE |
|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

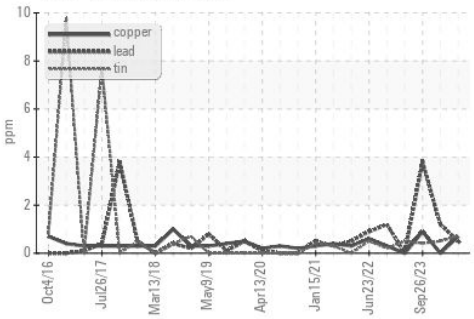
| FLUID PROPERTIES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Visc @ 100°C | cSt | ASTM D445 | 14 | **12.6** | 12.7 | 13.2 |

## GRAPHS

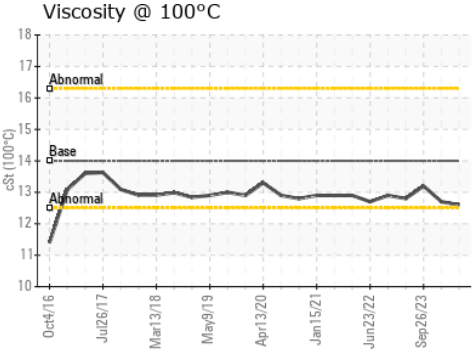
Ferrous Alloys



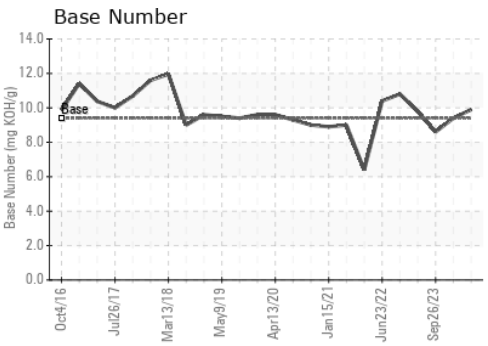

Non-ferrous Metals




Viscosity @ 100°C




Base Number




Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513
**Sample No.** : WC0908845 **Received** : 22 Apr 2024
**Lab Number** : 06156657 **Tested** : 23 Apr 2024
**Unique Number** : 10992080 **Diagnosed** : 23 Apr 2024 - Wes Davis
**Test Package** : CONST ( Additional Tests: TBN )

*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)*

**SHERWOOD CONSTRUCTION CO INC**
3219 WEST MAY ST
WICHITA, KS
US 67213
Contact: DOUG KING
doug.king@sherwood.net
T: (316)617-3161
F: x:

Report Id: SHEWIC [WUSCAR] 06156657 (Generated: 04/23/2024 18:08:36) Rev: 1

Submitted By: BOBBY JONES