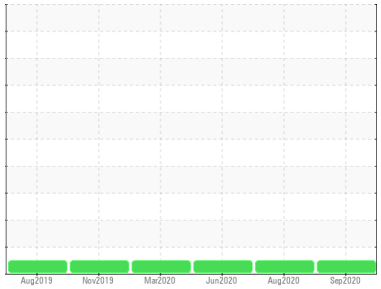
# OIL ANALYSIS REPORT

Area
**OKLAHOMA/102/EG - DOZER**
Machine Id
**35.99L [OKLAHOMA^102^EG - DOZER]**
Component
**Diesel Engine**
Fluid
**{not provided} (--- GAL)**

**Sample Rating Trend**




**NORMAL**

## DIAGNOSIS

**Recommendation**
Resample at the next service interval to monitor. Please specify the brand, type, and viscosity of the oil on your next sample.

**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 | | **WC0478574** | WC0451247 | WC0465333 |
| Sample Date | | Client Info | | **30 Sep 2020** | 05 Aug 2020 | 09 Jun 2020 |
| Machine Age | hrs | Client Info | | **6486** | 6156 | 5845 |
| Oil Age | hrs | Client Info | | **500** | 311 | 250 |
| 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 | **45** | 26 | 12 |
| Chromium | ppm | ASTM D5185m | >20 | **<1** | <1 | <1 |
| Nickel | ppm | ASTM D5185m | >2 | **<1** | <1 | 0 |
| Titanium | ppm | ASTM D5185m | >2 | **<1** | <1 | <1 |
| Silver | ppm | ASTM D5185m | >2 | **0** | 0 | 0 |
| Aluminum | ppm | ASTM D5185m | >25 | **4** | 5 | 5 |
| Lead | ppm | ASTM D5185m | >40 | **<1** | 2 | 0 |
| Copper | ppm | ASTM D5185m | >330 | **2** | 2 | 2 |
| Tin | ppm | ASTM D5185m | >15 | **<1** | 0 | 0 |
| Antimony | ppm | ASTM D5185m | | **0** | 0 | 2 |
| Vanadium | ppm | ASTM D5185m | | **0** | 0 | 0 |
| Cadmium | ppm | ASTM D5185m | | **0** | 0 | <1 |

| ADDITIVES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Boron | ppm | ASTM D5185m | | **33** | 19 | 29 |
| Barium | ppm | ASTM D5185m | | **0** | 0 | 0 |
| Molybdenum | ppm | ASTM D5185m | | **17** | 38 | 30 |
| Manganese | ppm | ASTM D5185m | | **<1** | <1 | <1 |
| Magnesium | ppm | ASTM D5185m | | **622** | 532 | 544 |
| Calcium | ppm | ASTM D5185m | | **1504** | 1729 | 1562 |
| Phosphorus | ppm | ASTM D5185m | | **732** | 782 | 706 |
| Zinc | ppm | ASTM D5185m | | **853** | 854 | 807 |
| Sulfur | ppm | ASTM D5185m | | **2410** | 1932 | 2008 |

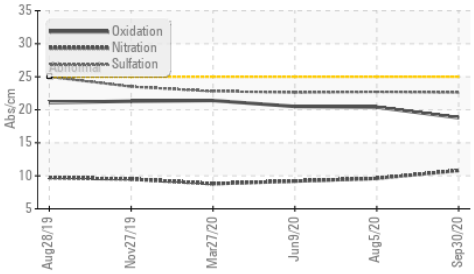
| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Silicon | ppm | ASTM D5185m | >25 | **7** | 6 | 6 |
| Sodium | ppm | ASTM D5185m | | **5** | 6 | 4 |
| Potassium | ppm | ASTM D5185m | >20 | **2** | 9 | 0 |

| INFRA-RED | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Soot % | % | *ASTM D7844 | >3 | **0.9** | 0.8 | 0.7 |
| Nitration | Abs/cm | *ASTM D7624 | >20 | **10.8** | 9.6 | 9.2 |
| Sulfation | Abs/.1mm | *ASTM D7415 | >30 | **22.6** | 22.7 | 22.6 |

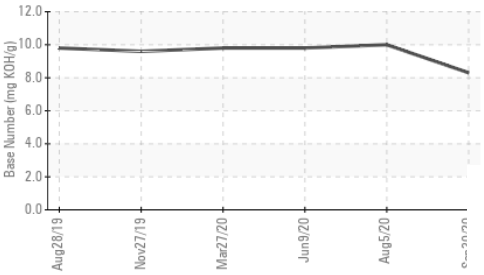
| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Oxidation | Abs/.1mm | *ASTM D7414 | >25 | **18.8** | 20.4 | 20.5 |
| Base Number (BN) | mg KOH/g | ASTM D2896 | | **8.3** | 10 | 9.8 |

# OIL ANALYSIS REPORT

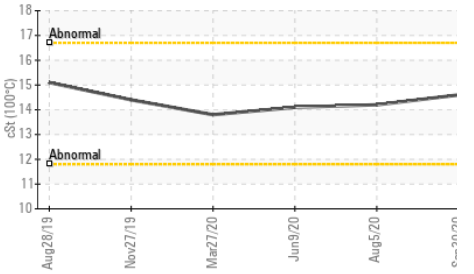
FT-IR (Direct Trend)




Base Number




Viscosity @ 100°C

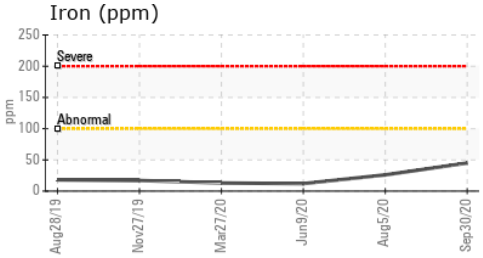



| VISUAL | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| White Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Precipitate | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| 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 |

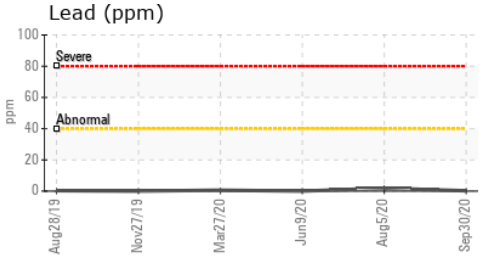
| FLUID PROPERTIES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Visc @ 100°C | cSt | ASTM D445 | | **14.6** | 14.2 | 14.1 |

## GRAPHS

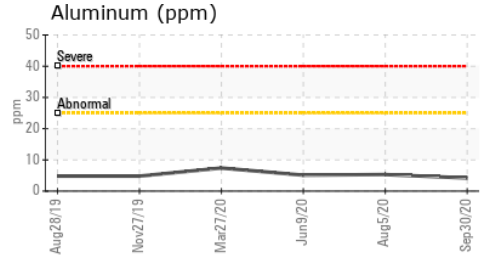
Iron (ppm)



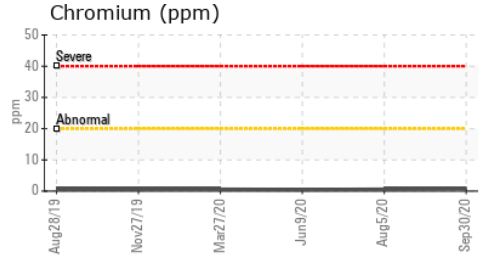

Lead (ppm)



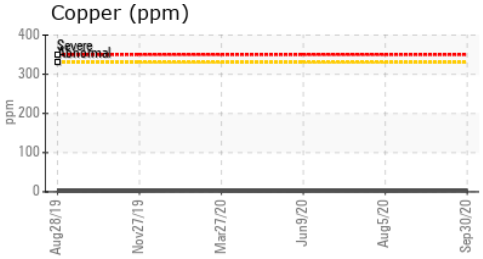

Aluminum (ppm)



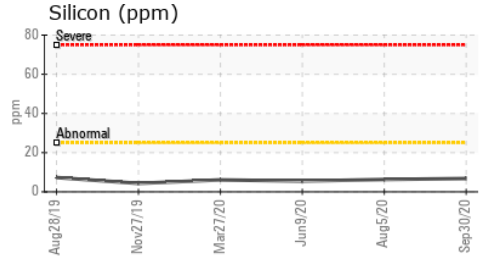

Chromium (ppm)



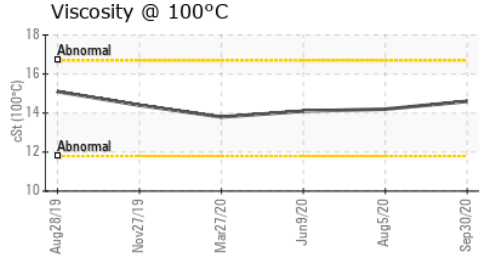

Copper (ppm)



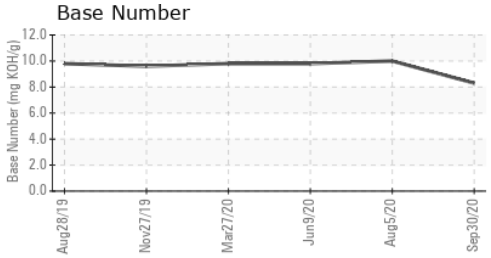

Silicon (ppm)




Viscosity @ 100°C




Base Number




Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513
**Sample No.** : WC0478574
**Lab Number** : 05083243
**Unique Number** : 9203479
**Test Package** : MOBCE ( Additional Tests: TBN )

**Received** : 06 Oct 2020
**Tested** : 08 Oct 2020
**Diagnosed** : 08 Oct 2020 - Wes Davis

*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: SHEWIC [WUSCAR] 05083243 (Generated: 04/16/2024 09:52:29) Rev: 1

Submitted By: SKYLAR BOATMAN