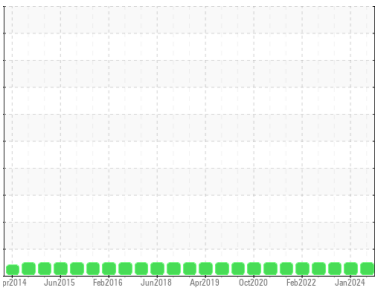
OIL DIAGNOSTICS

# OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL

Area
## KEMP QUARRIES / RIVER VALLEY OZARK
Machine Id
## TTH017
Component
**Diesel Engine**
Fluid
**MOBIL DELVAC 1300 SUPER15W40 (--- GAL)**

## 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 | | **PCA0108997** | PCA0084493 | PCA0037184 |
| Sample Date | | Client Info | | **19 Jun 2024** | 12 Jan 2024 | 13 Jan 2023 |
| Machine Age | hrs | Client Info | | **5494** | 5255 | 18563 |
| Oil Age | hrs | Client Info | | **5494** | 5255 | 300 |
| Oil Changed | | Client Info | | **N/A** | 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 | >31 | **9** | 10 | 23 |
| Chromium | ppm | ASTM D5185m | >3 | **1** | <1 | <1 |
| Nickel | ppm | ASTM D5185m | >4 | **<1** | 0 | 0 |
| Titanium | ppm | ASTM D5185m | | **<1** | <1 | 1 |
| Silver | ppm | ASTM D5185m | >3 | **<1** | 0 | 0 |
| Aluminum | ppm | ASTM D5185m | >4 | **3** | 2 | 2 |
| Lead | ppm | ASTM D5185m | >9 | **1** | 1 | 2 |
| Copper | ppm | ASTM D5185m | >20 | **2** | 2 | 15 |
| Tin | ppm | ASTM D5185m | >9 | **0** | <1 | <1 |
| Vanadium | ppm | ASTM D5185m | | **<1** | 0 | 0 |
| Cadmium | ppm | ASTM D5185m | | **0** | 0 | 0 |

| ADDITIVES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Boron | ppm | ASTM D5185m | 0 | **5** | 0 | 1 |
| Barium | ppm | ASTM D5185m | 0 | **0** | 0 | 0 |
| Molybdenum | ppm | ASTM D5185m | 0 | **60** | 56 | 54 |
| Manganese | ppm | ASTM D5185m | | **<1** | 0 | <1 |
| Magnesium | ppm | ASTM D5185m | 0 | **1011** | 866 | 791 |
| Calcium | ppm | ASTM D5185m | | **1215** | 1047 | 1245 |
| Phosphorus | ppm | ASTM D5185m | | **1061** | 888 | 1000 |
| Zinc | ppm | ASTM D5185m | | **1367** | 1117 | 1182 |
| Sulfur | ppm | ASTM D5185m | | **3708** | 3748 | 2867 |

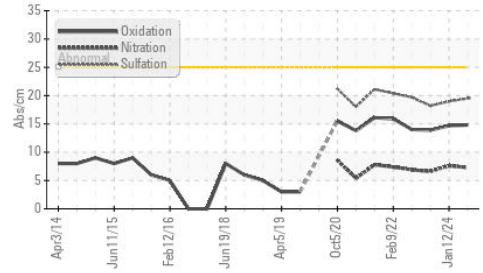
| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Silicon | ppm | ASTM D5185m | >26 | **4** | 3 | 7 |
| Sodium | ppm | ASTM D5185m | | **2** | 0 | 3 |
| Potassium | ppm | ASTM D5185m | >20 | **3** | 2 | 2 |

| INFRA-RED | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Soot % | % | *ASTM D7844 | >3 | **0.6** | 0.5 | 0.3 |
| Nitration | Abs/cm | *ASTM D7624 | >20 | **7.3** | 7.6 | 6.6 |
| Sulfation | Abs/.1mm | *ASTM D7415 | >30 | **19.5** | 19.0 | 18.2 |

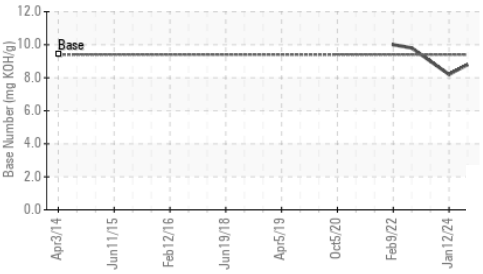
| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Oxidation | Abs/.1mm | *ASTM D7414 | >25 | **14.8** | 14.7 | 13.9 |
| Base Number (BN) | mg KOH/g | ASTM D2896 | 9.4 | **8.8** | 8.2 | 9.0 |

# OIL ANALYSIS REPORT

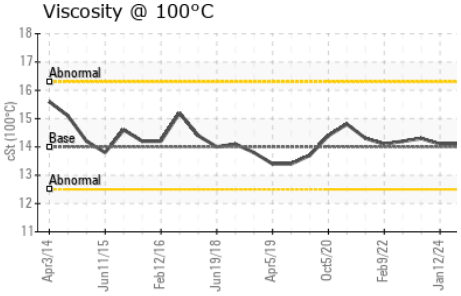
FT-IR (Direct Trend)




Base Number




Viscosity @ 100°C

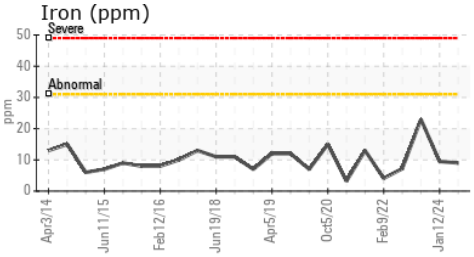



| VISUAL | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| White Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Precipitate | scalar | *Visual | NONE | **NONE** | NONE | NONE |
|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

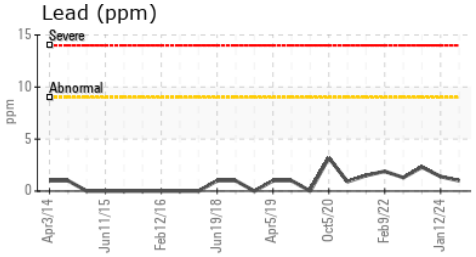
| FLUID PROPERTIES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Visc @ 100°C | cSt | ASTM D445 | 14 | **14.1** | 14.1 | 14.3 |

## GRAPHS

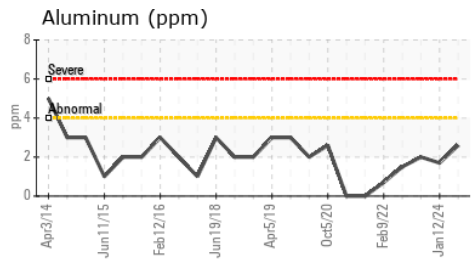
Iron (ppm)



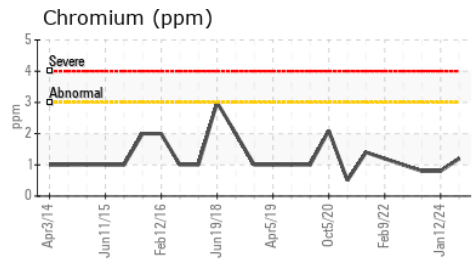

Lead (ppm)



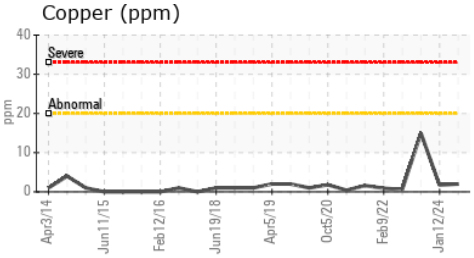

Aluminum (ppm)



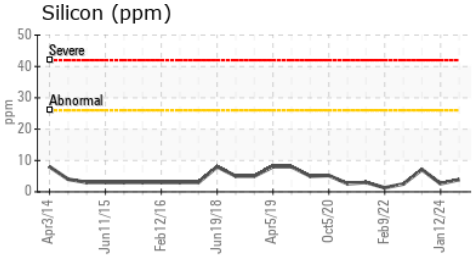

Chromium (ppm)



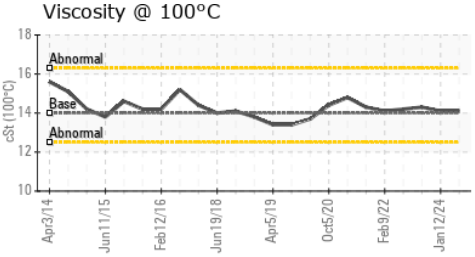

Copper (ppm)



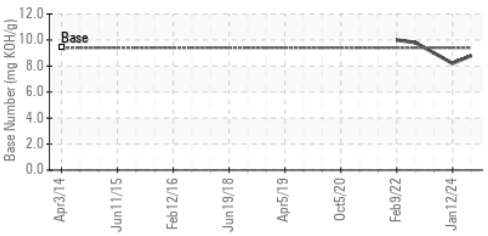

Silicon (ppm)




Viscosity @ 100°C




Base Number




Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513
**Sample No.** : PCA0108997
**Lab Number** : 06223021
**Unique Number** : 11101218
**Test Package** : MOB 1 ( Additional Tests: TBN )

**Received** : 27 Jun 2024
**Tested** : 28 Jun 2024
**Diagnosed** : 30 Jun 2024 - Don Baldridge

*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)*

**Kemp Quarries - River Valley - Ozark**
9446 N Hwy 309
Ozark, AR
US 72949
Contact:
ozark@rivervalleyquarries.com
T:
F:

Report Id: KEMOZA [WUSCAR] 06223021 (Generated: 06/30/2024 13:16:34) Rev: 1

Submitted By: