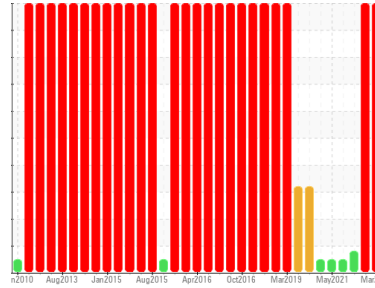


OIL ANALYSIS REPORT



Area
KEMP QUARRIES / HULBERT
Machine Id
WL043
Component
Rear Differential
Fluid
MOBIL MOBILTRANS HD 50 (--- GAL)

Sample Rating Trend



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 advise that you inspect for the source(s) of wear. We recommend an early resample to monitor this condition.

Wear
Bearing and/or gear wear is indicated.

Contamination
Elemental levels of silicon (Si) and aluminum (Al) indicate alumina-silicate (coarse dirt) ingress. There is a light concentration of water present in the oil.

Fluid Condition
The oil is no longer serviceable as a result of the abnormal and/or severe wear.

SAMPLE INFORMATION

| method | limit/base | current | history1 | history2 |
|---------------|-------------|--------------------|-------------|-------------|
| Sample Number | Client Info | PCA0085897 | PCA0086173 | PCA0048858 |
| Sample Date | Client Info | 08 Mar 2024 | 07 Jan 2023 | 12 Mar 2022 |
| Machine Age | hrs | 27117 | 46167 | 45671 |
| Oil Age | hrs | 0 | 0 | 0 |
| Oil Changed | Client Info | Changed | Not Changd | Not Changd |
| Sample Status | | SEVERE | SEVERE | ABNORMAL |

WEAR METALS

| method | limit/base | current | history1 | history2 | |
|----------|------------|------------------|---------------|----------|-------|
| Iron | ppm | ASTM D5185m >500 | ▲ 1835 | ▲ 1593 | ▲ 746 |
| Chromium | ppm | ASTM D5185m >3 | ▲ 4 | ▲ 4 | 1 |
| Nickel | ppm | ASTM D5185m >3 | 2 | <1 | <1 |
| Titanium | ppm | ASTM D5185m >2 | ▲ 4 | 2 | 1 |
| Silver | ppm | ASTM D5185m >2 | 0 | <1 | 0 |
| Aluminum | ppm | ASTM D5185m >30 | ● 29 | ● 13 | 6 |
| Lead | ppm | ASTM D5185m >13 | 12 | 7 | 3 |
| Copper | ppm | ASTM D5185m >103 | ▲ 117 | 53 | 21 |
| Tin | ppm | ASTM D5185m >5 | ▲ 10 | 4 | 2 |
| Antimony | ppm | ASTM D5185m >5 | --- | --- | --- |
| Vanadium | ppm | ASTM D5185m | <1 | 0 | 0 |
| Cadmium | ppm | ASTM D5185m | <1 | <1 | 0 |

ADDITIVES

| method | limit/base | current | history1 | history2 | |
|------------|------------|-------------|----------|----------|------|
| Boron | ppm | ASTM D5185m | 4 | 3 | 3 |
| Barium | ppm | ASTM D5185m | 1 | 0 | 0 |
| Molybdenum | ppm | ASTM D5185m | 6 | 3 | 3 |
| Manganese | ppm | ASTM D5185m | 15 | 13 | 5 |
| Magnesium | ppm | ASTM D5185m | 87 | 37 | 0 |
| Calcium | ppm | ASTM D5185m | 2897 | 2841 | 3114 |
| Phosphorus | ppm | ASTM D5185m | 1159 | 1050 | 976 |
| Zinc | ppm | ASTM D5185m | 1320 | 1214 | 1293 |
| Sulfur | ppm | ASTM D5185m | 6395 | 6714 | 4078 |

CONTAMINANTS

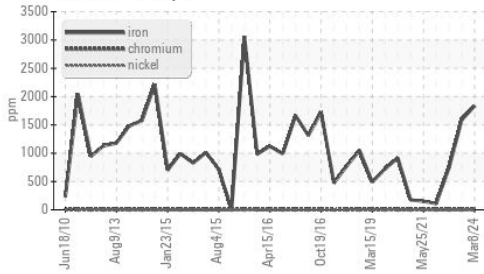
| method | limit/base | current | history1 | history2 | |
|-----------|------------|------------------|----------|----------|-----|
| Silicon | ppm | ASTM D5185m >100 | ▲ 331 | ▲ 111 | 52 |
| Sodium | ppm | ASTM D5185m | 12 | 11 | 5 |
| Potassium | ppm | ASTM D5185m >20 | 6 | 3 | 0 |
| Water | % | ASTM D6304 >.2 | ▲ 0.346 | ▲ 0.357 | --- |
| ppm Water | ppm | ASTM D6304 >2000 | ▲ 3460 | ▲ 3570 | --- |

VISUAL

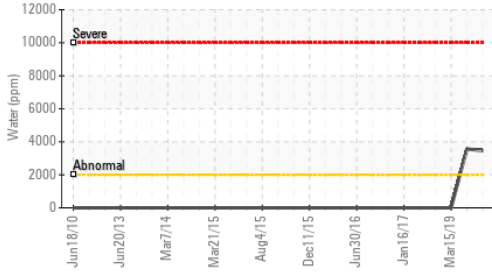
| method | limit/base | current | history1 | history2 | |
|------------------|------------|---------------|--------------|----------|-------|
| White Metal | scalar | *Visual NONE | NONE | NONE | LIGHT |
| Yellow Metal | scalar | *Visual NONE | NONE | NONE | NONE |
| Precipitate | scalar | *Visual NONE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

OIL ANALYSIS REPORT

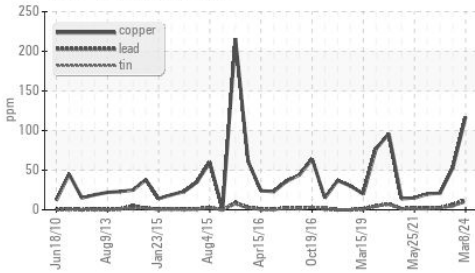
▲ Ferrous Alloys



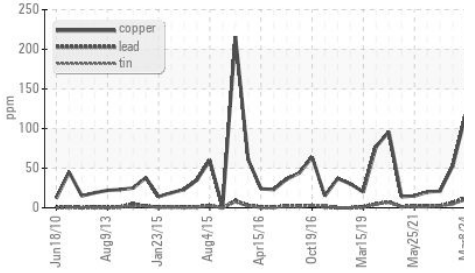
▲ Water (KF)



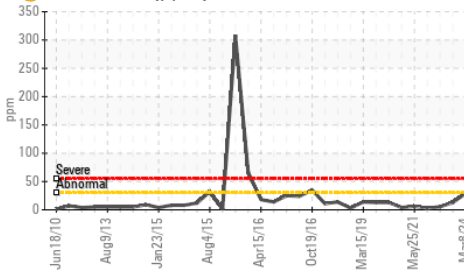
▲ Non-ferrous Metals



▲ Non-ferrous Metals



● Aluminum (ppm)



FLUID PROPERTIES

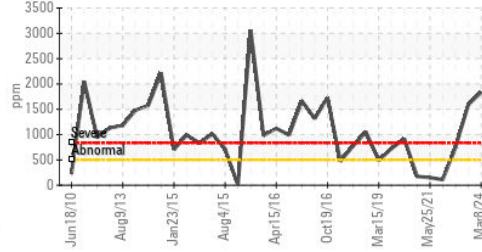
| method | limit/base | current | history1 | history2 |
|-------------|---------------|---------|----------|----------|
| Visc @ 40°C | cSt ASTM D445 | 195 | 172 | 179 |

SAMPLE IMAGES

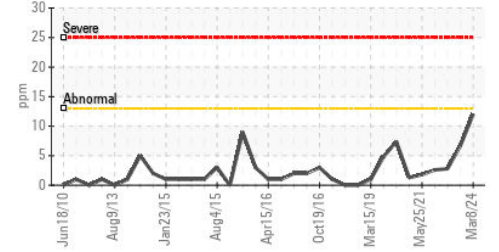
| method | limit/base | current | history1 | history2 |
|--------|------------|---------|----------|----------|
| Color | | | no image | no image |
| Bottom | | | no image | no image |

GRAPHS

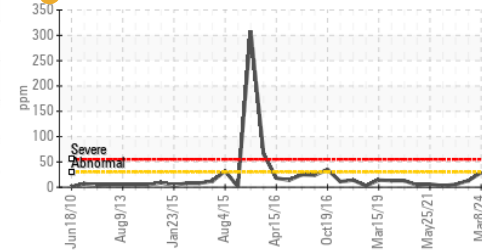
▲ Iron (ppm)



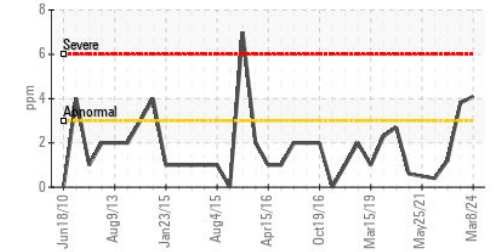
▲ Lead (ppm)



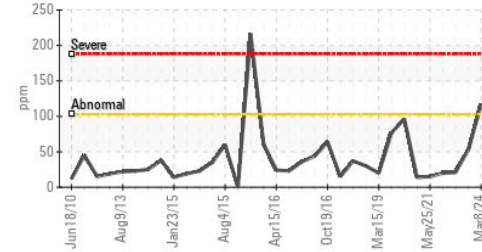
● Aluminum (ppm)



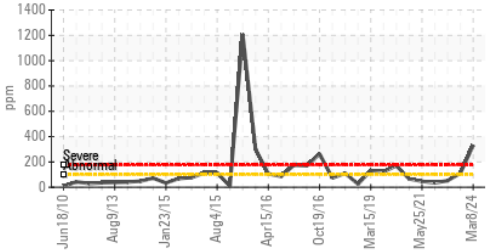
▲ Chromium (ppm)



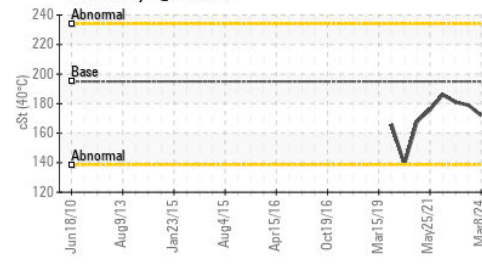
▲ Copper (ppm)



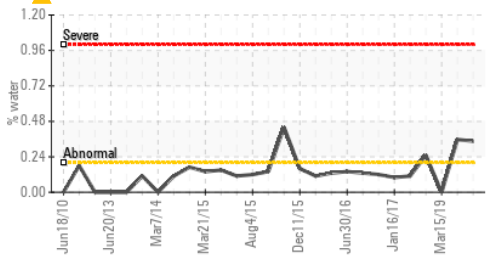
▲ Silicon (ppm)



Viscosity @ 40°C



▲ Water



Certificate L2367

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

Sample No. : PCA0085897

Lab Number : 06128213

Unique Number : 10942364

Test Package : MOB 1 (Additional Tests: KF)

Received : 25 Mar 2024

Tested : 28 Mar 2024

Diagnosed : 28 Mar 2024 - Jonathan Hester

Kemp Quarries - Kemp Stone - Hulbert

17801 Hwy 80

Hulbert, OK

US 74441

Contact:

hulbert@kempstone.com

T:

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)