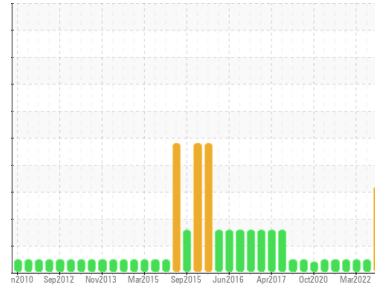


OIL ANALYSIS REPORT



Area
KEMP QUARRIES / HULBERT
Machine Id
WL043
Component
Hydraulic System
Fluid
MOBIL DELVAC 1300 SUPER15W40 (--- GAL)

Sample Rating Trend



DIAGNOSIS

- Recommendation**
We advise that you check all areas where dirt can enter the system. Oil and filter change at the time of sampling has been noted. We recommend an early resample to monitor this condition.
- Wear**
The iron level is abnormal. All other component wear rates are normal.
- Contamination**
Elemental levels of silicon (Si) and aluminum (Al) indicate alumina-silicate (coarse dirt) ingress.
- Fluid Condition**
The condition of the oil is acceptable for the time in service.

SAMPLE INFORMATION

| method | limit/base | current | history1 | history2 |
|---------------|-------------|--------------------|-------------|-------------|
| Sample Number | Client Info | PCA0085898 | PCA0086172 | PCA0048860 |
| 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 | | ABNORMAL | NORMAL | NORMAL |

CONTAMINATION

| method | limit/base | current | history1 | history2 |
|--------|----------------|------------|----------|----------|
| Water | WC Method >0.1 | NEG | NEG | NEG |

WEAR METALS

| method | limit/base | current | history1 | history2 |
|----------|---------------------|--------------|----------|----------|
| Iron | ppm ASTM D5185m >20 | ▲ 42 | 16 | 12 |
| Chromium | ppm ASTM D5185m >10 | 2 | <1 | <1 |
| Nickel | ppm ASTM D5185m >10 | <1 | 0 | 0 |
| Titanium | ppm ASTM D5185m | 2 | <1 | <1 |
| Silver | ppm ASTM D5185m | 0 | 0 | 0 |
| Aluminum | ppm ASTM D5185m >10 | ● 25 | 9 | 7 |
| Lead | ppm ASTM D5185m >10 | 2 | 0 | 0 |
| Copper | ppm ASTM D5185m >75 | 11 | 5 | 4 |
| Tin | ppm ASTM D5185m >10 | 2 | <1 | 0 |
| Antimony | ppm ASTM D5185m | --- | --- | --- |
| 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 | <1 | <1 | 4 |
| Barium | ppm ASTM D5185m 0 | 1 | 0 | 0 |
| Molybdenum | ppm ASTM D5185m 0 | 10 | 7 | 6 |
| Manganese | ppm ASTM D5185m | 1 | <1 | <1 |
| Magnesium | ppm ASTM D5185m 0 | 147 | 93 | 92 |
| Calcium | ppm ASTM D5185m | 669 | 324 | 298 |
| Phosphorus | ppm ASTM D5185m | 632 | 422 | 419 |
| Zinc | ppm ASTM D5185m | 747 | 490 | 496 |
| Sulfur | ppm ASTM D5185m | 1861 | 1320 | 958 |

CONTAMINANTS

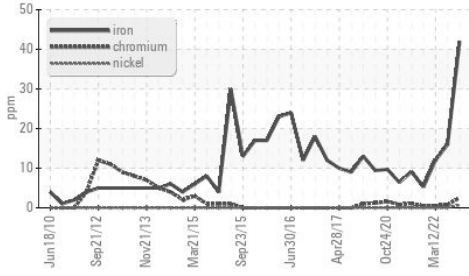
| method | limit/base | current | history1 | history2 |
|-----------|---------------------|-------------|----------|----------|
| Silicon | ppm ASTM D5185m >20 | ▲ 44 | 16 | 12 |
| Sodium | ppm ASTM D5185m | 0 | 1 | <1 |
| Potassium | ppm ASTM D5185m >20 | 8 | 2 | 0 |

VISUAL

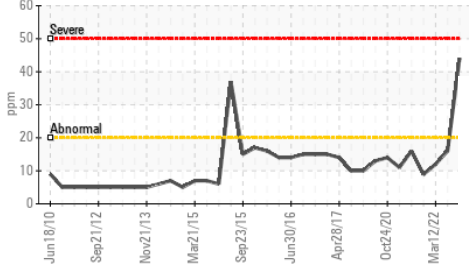
| method | limit/base | current | history1 | history2 |
|------------------|----------------------|--------------|----------|----------|
| White Metal | scalar *Visual NONE | NONE | NONE | VLITE |
| Yellow Metal | scalar *Visual NONE | NONE | NONE | NONE |
| Precipitate | scalar *Visual NONE | NONE | 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 >0.1 | NEG | NEG | NEG |
| Free Water | scalar *Visual | NEG | NEG | NEG |

OIL ANALYSIS REPORT

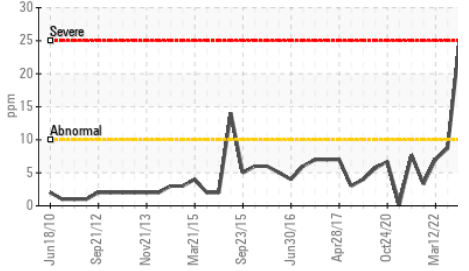
▲ Ferrous Alloys



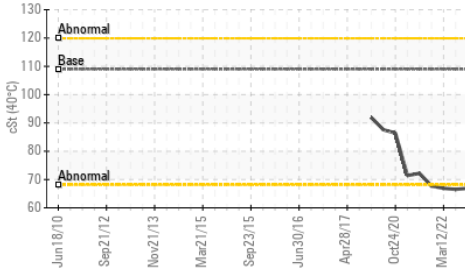
▲ Silicon (ppm)



● Aluminum (ppm)



Viscosity @ 40°C



FLUID PROPERTIES

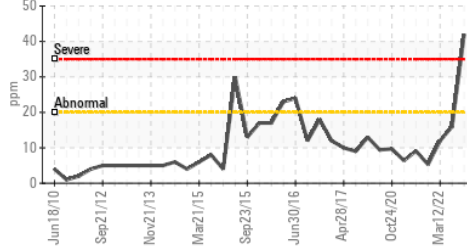
| method | limit/base | current | history1 | history2 |
|-------------|---------------|---------|----------|----------|
| Visc @ 40°C | cSt ASTM D445 | 109 | 66.5 | 66.9 |

SAMPLE IMAGES

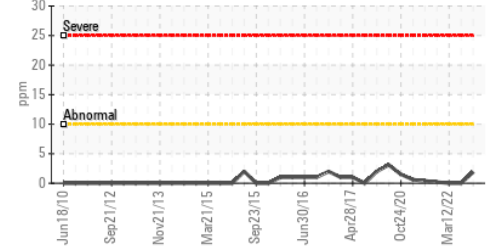
| method | limit/base | current | history1 | history2 |
|--------|------------|---------|----------|----------|
| Color | | | no image | no image |
| Bottom | | | no image | no image |

GRAPHS

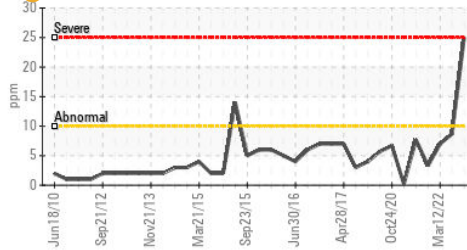
▲ Iron (ppm)



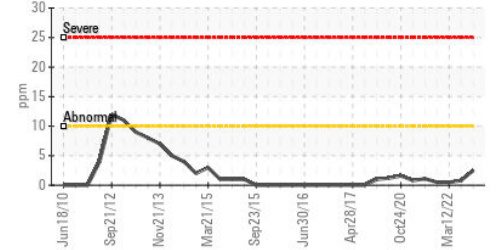
▲ Lead (ppm)



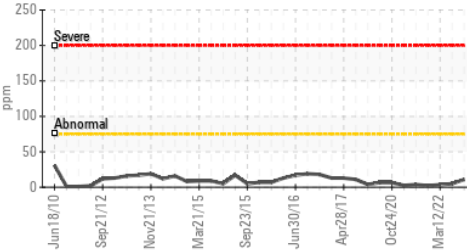
● Aluminum (ppm)



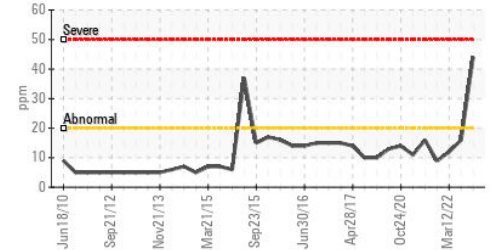
▲ Chromium (ppm)



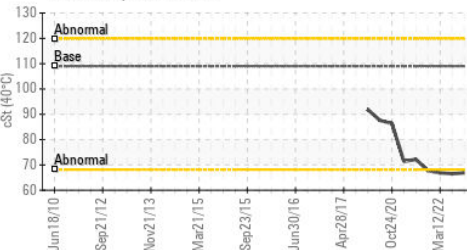
▲ Copper (ppm)



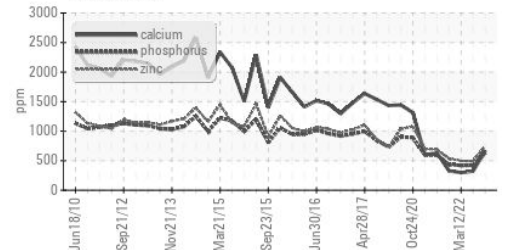
▲ Silicon (ppm)



Viscosity @ 40°C



Additives



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : PCA0085898
Lab Number : 06128309
Unique Number : 10942460
Test Package : MOB 1

Received : 25 Mar 2024
Tested : 26 Mar 2024
Diagnosed : 28 Mar 2024 - Jonathan Hester

Kemp Quarries - Kemp Stone - Hulbert
 17801 Hwy 80
 Hulbert, OK
 US 74441

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)

Contact: hulbert@kempstone.com

T:
F: