



OIL ANALYSIS REPORT

| | |
|-----------------|--------|
| WEAR | NORMAL |
| CONTAMINATION | NORMAL |
| FLUID CONDITION | NORMAL |

Area
KEMP QUARRIES / PRYOR STONE [70227]

Machine Id
WP049

Component
Diesel Engine

Fluid
PETRO CANADA DURON SHP 15W40 (--- GAL)

RECOMMENDATION

Resample at the next service interval to monitor. (Customer Sample Comment: PM performed. Engine oil sample taken. Engine oil, and all filters changed.)

| Test | UOM | Method | Limit/Abn | Current | History1 | History2 |
|----------------|-----|-------------|-----------|--------------------|-------------|-------------|
| Sample Number | | Client Info | | PCA0086646 | PCA0086288 | PCA0086271 |
| Sample Date | | Client Info | | 04 Apr 2024 | 15 Feb 2024 | 26 Jan 2024 |
| Machine Age | hrs | Client Info | | 13103 | 12777 | 12494 |
| Oil Age | hrs | Client Info | | 366 | 283 | 322 |
| Filter Age | hrs | Client Info | | 366 | 283 | 322 |
| Oil Changed | | Client Info | | Changed | Changed | Changed |
| Filter Changed | | Client Info | | Changed | Changed | Changed |
| Sample Status | | | | NORMAL | NORMAL | NORMAL |

WEAR

All component wear rates are normal.

| | | | | | | |
|--------------|--------|-------------|------|--------------|------|------|
| Iron | ppm | ASTM D5185m | >51 | 7 | 8 | 4 |
| Chromium | ppm | ASTM D5185m | >11 | <1 | <1 | 0 |
| Nickel | ppm | ASTM D5185m | >5 | 0 | <1 | <1 |
| Titanium | ppm | ASTM D5185m | | 0 | 0 | 0 |
| Silver | ppm | ASTM D5185m | >3 | 0 | 0 | 0 |
| Aluminum | ppm | ASTM D5185m | >31 | <1 | 3 | 1 |
| Lead | ppm | ASTM D5185m | >26 | <1 | 1 | <1 |
| Copper | ppm | ASTM D5185m | >26 | 0 | 0 | 0 |
| Tin | ppm | ASTM D5185m | >4 | 0 | <1 | <1 |
| Vanadium | ppm | ASTM D5185m | | 0 | 0 | 0 |
| White Metal | scalar | *Visual | NONE | NONE | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | NONE | NONE | NONE |

CONTAMINATION

There is no indication of any contamination in the oil.

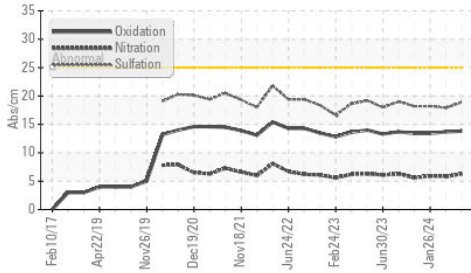
| | | | | | | |
|------------------|----------|-------------|-------|----------------|-------|-------|
| Silicon | ppm | ASTM D5185m | >22 | 2 | 5 | 3 |
| Potassium | ppm | ASTM D5185m | >20 | <1 | <1 | <1 |
| Fuel | | WC Method | >2.1 | <1.0 | <1.0 | <1.0 |
| Water | | WC Method | >0.21 | NEG | NEG | NEG |
| Glycol | | WC Method | | NEG | NEG | NEG |
| Soot % | % | *ASTM D7844 | >3 | 0.9 | 0.5 | 0.5 |
| Nitration | Abs/cm | *ASTM D7624 | >20 | 6.3 | 5.8 | 5.9 |
| Sulfation | Abs/.1mm | *ASTM D7415 | >30 | 18.9 | 17.9 | 18.2 |
| 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 | >0.21 | NEG | NEG | NEG |

FLUID CONDITION

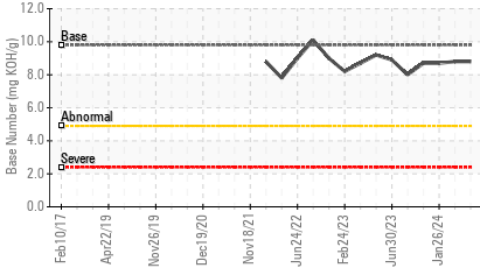
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

| | | | | | | |
|------------------|----------|-------------|------|--------------|------|------|
| Sodium | ppm | ASTM D5185m | >31 | <1 | 3 | <1 |
| Boron | ppm | ASTM D5185m | 0 | 2 | 2 | 3 |
| Barium | ppm | ASTM D5185m | 0 | 0 | 0 | 0 |
| Molybdenum | ppm | ASTM D5185m | 60 | 62 | 85 | 60 |
| Manganese | ppm | ASTM D5185m | 0 | <1 | 0 | <1 |
| Magnesium | ppm | ASTM D5185m | 1010 | 1050 | 1433 | 964 |
| Calcium | ppm | ASTM D5185m | 1070 | 1136 | 1504 | 1032 |
| Phosphorus | ppm | ASTM D5185m | 1150 | 1139 | 1527 | 1093 |
| Zinc | ppm | ASTM D5185m | 1270 | 1350 | 1814 | 1298 |
| Sulfur | ppm | ASTM D5185m | 2060 | 3840 | 5147 | 3251 |
| Oxidation | Abs/.1mm | *ASTM D7414 | >25 | 13.8 | 13.7 | 13.4 |
| Base Number (BN) | mg KOH/g | ASTM D2896 | 9.8 | 8.8 | 8.8 | 8.7 |
| Visc @ 100°C | cSt | ASTM D445 | 15.4 | 14.8 | 14.6 | 14.6 |

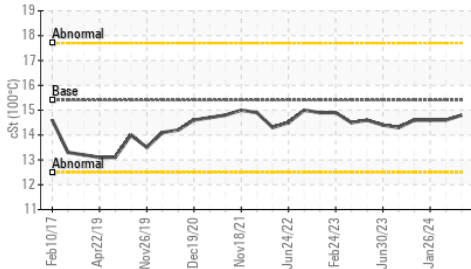
FT-IR (Direct Trend)



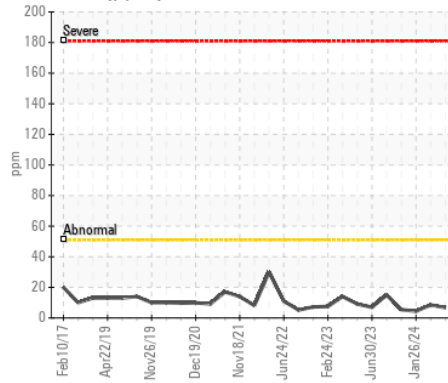
Base Number



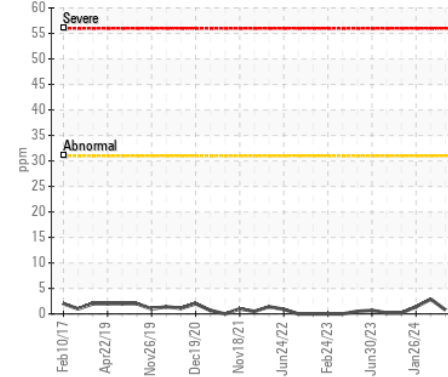
Viscosity @ 100°C



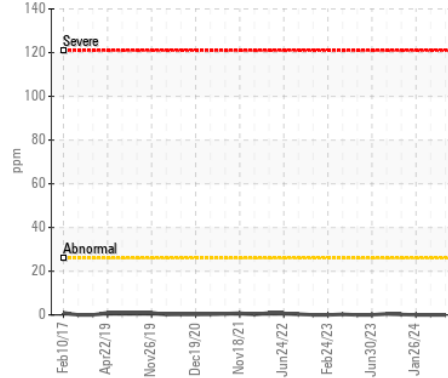
Iron (ppm)



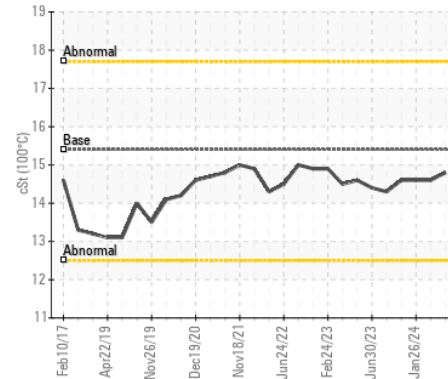
Aluminum (ppm)



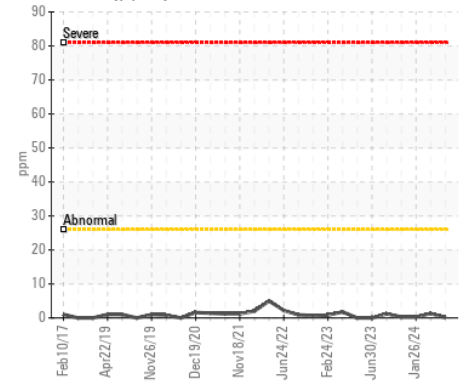
Copper (ppm)



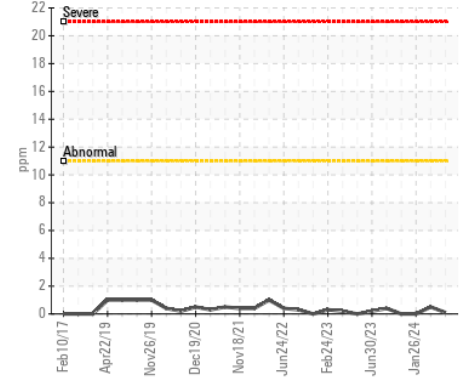
Viscosity @ 100°C



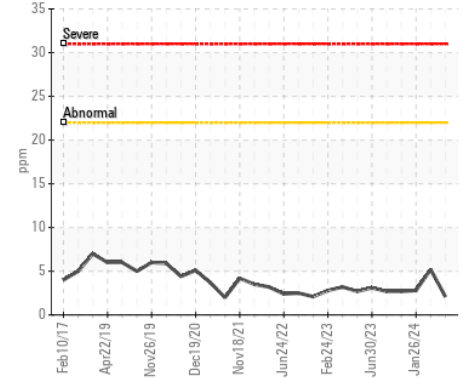
Lead (ppm)



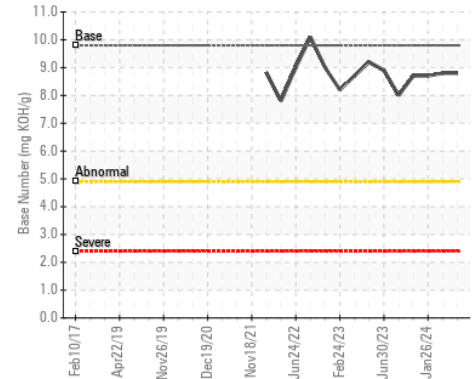
Chromium (ppm)



Silicon (ppm)



Base Number



Certificate L2367

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

Sample No. : PCA0086646

Lab Number : 06149298

Unique Number : 10979376

Test Package : MOB 1 (Additional Tests: TBN)

Received : 15 Apr 2024

Tested : 16 Apr 2024

Diagnosed : 17 Apr 2024 - Don Baldrige

Kemp Quarries - Pryor Stone - Pryor

1050 E 520 Rd

Pryor, OK

US 74361

Contact:

pryor@pryorstone.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)