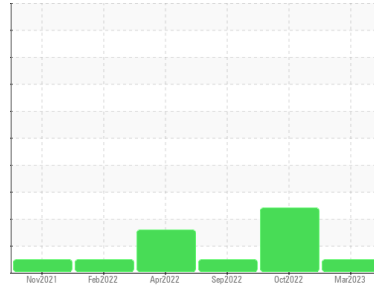




OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



Machine Id
PETERBILT 22

Component
Diesel Engine

Fluid
MOBIL DELVAC 1300 SUPER15W40 (--- QTS)

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

Wear

Metal levels are typical for a new component breaking in.

Contamination

The system cleanliness is acceptable for your target ISO 4406 cleanliness code. The system and fluid cleanliness is acceptable.

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 | | KL0006547 | KL0006543 | KL0006541 |
| Sample Date | Client Info | | 09 Mar 2023 | 26 Oct 2022 | 08 Sep 2022 |
| Machine Age | mls | Client Info | 70093 | 60055 | 49916 |
| Oil Age | mls | Client Info | 31000 | 10000 | 10000 |
| Oil Changed | Client Info | | Not Changed | Not Changd | Not Changed |
| Sample Status | | | NORMAL | ABNORMAL | 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 >110 | 61 | 31 | 18 |
| Chromium | ppm | ASTM D5185m >4 | 0 | 0 | 0 |
| Nickel | ppm | ASTM D5185m >2 | 0 | 0 | 0 |
| Titanium | ppm | ASTM D5185m | 0 | 0 | 0 |
| Silver | ppm | ASTM D5185m >2 | 0 | 0 | 0 |
| Aluminum | ppm | ASTM D5185m >25 | 22 | 15 | 11 |
| Lead | ppm | ASTM D5185m >45 | <1 | 1 | <1 |
| Copper | ppm | ASTM D5185m >85 | 6 | 6 | 4 |
| Tin | ppm | ASTM D5185m >4 | <1 | 1 | <1 |
| Vanadium | ppm | ASTM D5185m | 0 | 0 | 0 |
| Cadmium | ppm | ASTM D5185m | 0 | 0 | 0 |

ADDITIVES

| | method | limit/base | current | history1 | history2 |
|------------|--------|---------------|--------------|----------|----------|
| Boron | ppm | ASTM D5185m 0 | 9 | 6 | 2 |
| Barium | ppm | ASTM D5185m 0 | 0 | 0 | 0 |
| Molybdenum | ppm | ASTM D5185m 0 | 59 | 58 | 56 |
| Manganese | ppm | ASTM D5185m | <1 | <1 | <1 |
| Magnesium | ppm | ASTM D5185m 0 | 1021 | 917 | 826 |
| Calcium | ppm | ASTM D5185m | 1598 | 1248 | 1173 |
| Phosphorus | ppm | ASTM D5185m | 1079 | 1000 | 939 |
| Zinc | ppm | ASTM D5185m | 1371 | 1233 | 1110 |
| Sulfur | ppm | ASTM D5185m | 4217 | 4081 | 3972 |

CONTAMINANTS

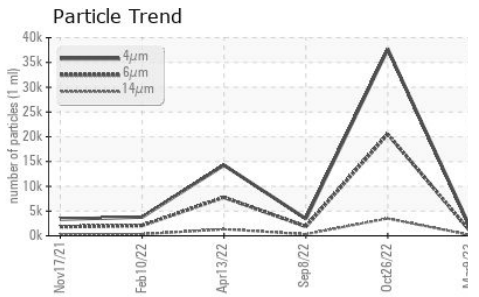
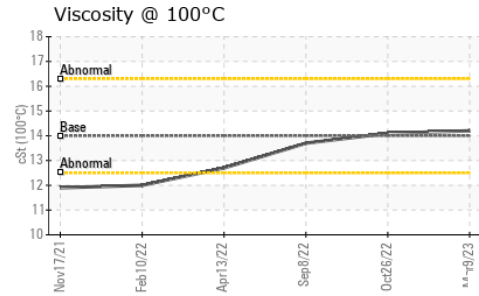
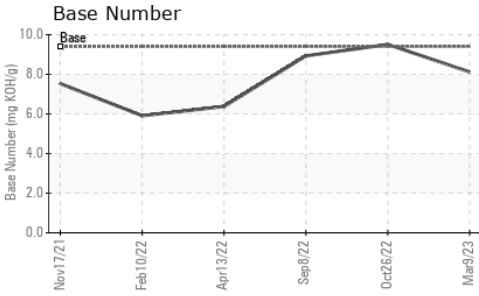
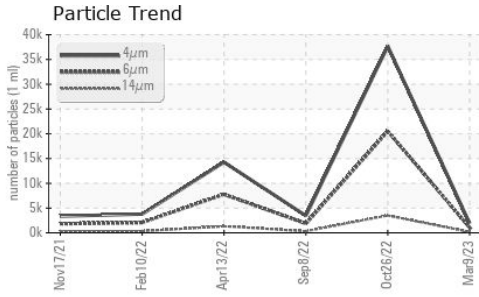
| | method | limit/base | current | history1 | history2 |
|-----------|--------|-----------------|--------------|----------|----------|
| Silicon | ppm | ASTM D5185m >30 | 11 | 6 | 8 |
| Sodium | ppm | ASTM D5185m | <1 | 0 | 0 |
| Potassium | ppm | ASTM D5185m >20 | 57 | 48 | 29 |

INFRA-RED

| | method | limit/base | current | history1 | history2 |
|-----------|----------|-----------------|-------------|----------|----------|
| Soot % | % | *ASTM D7844 >3 | 0.6 | 0.5 | 0.3 |
| Nitration | Abs/cm | *ASTM D7624 >20 | 10.9 | 11.1 | 8.6 |
| Sulfation | Abs/.1mm | *ASTM D7415 >30 | 23.5 | 23.5 | 21.6 |



OIL ANALYSIS REPORT



| FLUID CLEANLINESS | method | limit/base | current | history1 | history2 |
|-------------------|--------------|------------|--------------|----------|----------|
| Particles >4µm | ASTM D7647 | | 1940 | 37676 | 3452 |
| Particles >6µm | ASTM D7647 | >5000 | 1057 | ▲ 20524 | 1880 |
| Particles >14µm | ASTM D7647 | >640 | 180 | ▲ 3493 | 320 |
| Particles >21µm | ASTM D7647 | >160 | 61 | ▲ 1177 | 108 |
| Particles >38µm | ASTM D7647 | >40 | 9 | ▲ 182 | 17 |
| Particles >71µm | ASTM D7647 | >10 | 1 | ● 19 | 2 |
| Oil Cleanliness | ISO 4406 (c) | >19/16 | 17/15 | ▲ 22/19 | 18/15 |

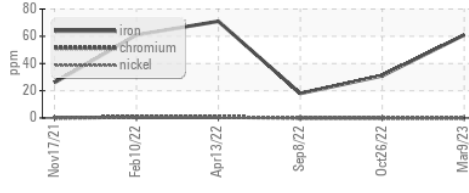
| FLUID DEGRADATION | method | limit/base | current | history1 | history2 | |
|-------------------|----------|-------------|---------|-------------|----------|------|
| Oxidation | Abs./1mm | *ASTM D7414 | >25 | 20.9 | 20.8 | 17.4 |
| Base Number (BN) | mg KOH/g | ASTM D2896 | 9.4 | 8.12 | 9.51 | 8.93 |

| VISUAL | method | limit/base | current | history1 | history2 | |
|------------------|--------|------------|---------|------------|----------|-----|
| White Metal | scalar | *Visual | NONE | NONE | NONE | |
| Yellow Metal | scalar | *Visual | NONE | NONE | NONE | |
| Precipitate | scalar | *Visual | NONE | NONE | NONE | |
| Silt | scalar | *Visual | NONE | NONE | NONE | |
| Debris | scalar | *Visual | NONE | NONE | NONE | |
| Sand/Dirt | scalar | *Visual | NONE | NONE | NONE | |
| Appearance | scalar | *Visual | NORML | NORML | NORML | |
| Odor | scalar | *Visual | NORML | NORML | NORML | |
| Emulsified Water | scalar | *Visual | >0.2 | NEG | NEG | NEG |
| Free Water | scalar | *Visual | | NEG | NEG | NEG |

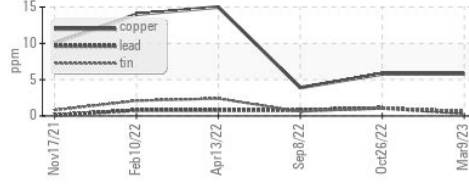
| FLUID PROPERTIES | method | limit/base | current | history1 | history2 | |
|------------------|--------|------------|---------|-------------|----------|------|
| Visc @ 100°C | cSt | ASTM D445 | 14 | 14.2 | 14.1 | 13.7 |

GRAPHS

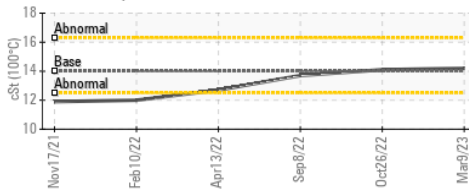
Ferrous Alloys



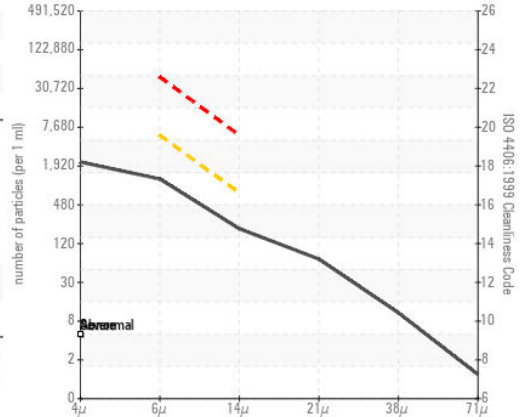
Non-ferrous Metals



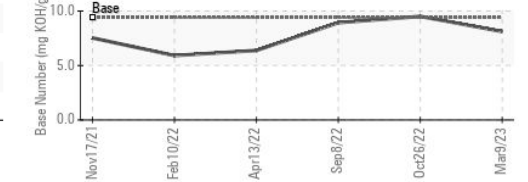
Viscosity @ 100°C



Particle Count



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
 Sample No. : KL0006547
 Lab Number : **05807806**
 Unique Number : 10405335
 Test Package : MOB 2 (Additional Tests: PrtCount)

BERRINGTON CUSTOM HAY
 PO BOX 540
 WELLINGTON, NV
 US 89444

Contact: REBECCA BERRINGTON
 berringtoncustomhay@gmail.com

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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F: