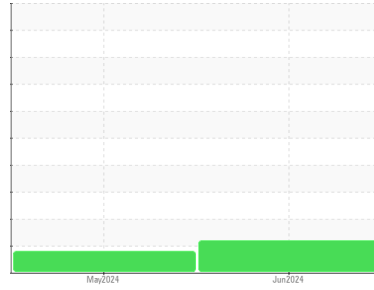


OIL ANALYSIS REPORT

Sample Rating Trend



VISUAL METAL



Machine Id
MH-97
 Component
Diesel Engine
 Fluid
 DIESEL ENGINE OIL SAE 40 (--- LTR)

DIAGNOSIS

Recommendation

No corrective action is recommended at this time. Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

Wear

Moderate concentration of visible metal present. 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 acceptable for the time in service.

SAMPLE INFORMATION

| method | limit/base | current | history1 | history2 |
|---------------|-------------|--------------------|-------------|----------|
| Sample Number | Client Info | PCA0113905 | PCA0124472 | --- |
| Sample Date | Client Info | 13 Jun 2024 | 03 May 2024 | --- |
| Machine Age | hrs | 3052 | 2297 | --- |
| Oil Age | hrs | 500 | 500 | --- |
| Oil Changed | Client Info | Changed | N/A | --- |
| Sample Status | | ABNORMAL | ABNORMAL | --- |

CONTAMINATION

| method | limit/base | current | history1 | history2 |
|--------|----------------|----------------|----------|----------|
| Fuel | WC Method >5 | <1.0 | <1.0 | --- |
| Water | WC Method >0.2 | NEG | NEG | --- |
| Glycol | WC Method | NEG | NEG | --- |

WEAR METALS

| method | limit/base | current | history1 | history2 |
|----------|----------------------|--------------|----------|----------|
| Iron | ppm ASTM D5185m >100 | 24 | ▲ 149 | --- |
| Chromium | ppm ASTM D5185m >20 | <1 | 4 | --- |
| Nickel | ppm ASTM D5185m >4 | 0 | 1 | --- |
| Titanium | ppm ASTM D5185m | <1 | <1 | --- |
| Silver | ppm ASTM D5185m >3 | 0 | <1 | --- |
| Aluminum | ppm ASTM D5185m >20 | 7 | 22 | --- |
| Lead | ppm ASTM D5185m >40 | 0 | 1 | --- |
| Copper | ppm ASTM D5185m >330 | 2 | 18 | --- |
| Tin | ppm ASTM D5185m >15 | 0 | 2 | --- |
| Vanadium | ppm ASTM D5185m | <1 | <1 | --- |
| Cadmium | ppm ASTM D5185m | 0 | <1 | --- |

ADDITIVES

| method | limit/base | current | history1 | history2 |
|------------|----------------------|--------------|----------|----------|
| Boron | ppm ASTM D5185m 250 | 7 | 23 | --- |
| Barium | ppm ASTM D5185m 10 | 0 | 5 | --- |
| Molybdenum | ppm ASTM D5185m 100 | 61 | 83 | --- |
| Manganese | ppm ASTM D5185m | <1 | 5 | --- |
| Magnesium | ppm ASTM D5185m 450 | 966 | 564 | --- |
| Calcium | ppm ASTM D5185m 3000 | 1229 | 1847 | --- |
| Phosphorus | ppm ASTM D5185m 1150 | 1007 | 1088 | --- |
| Zinc | ppm ASTM D5185m 1350 | 1280 | 1358 | --- |
| Sulfur | ppm ASTM D5185m 4250 | 3281 | 3425 | --- |

CONTAMINANTS

| method | limit/base | current | history1 | history2 |
|-----------|----------------------|-----------|----------|----------|
| Silicon | ppm ASTM D5185m >25 | 4 | 12 | --- |
| Sodium | ppm ASTM D5185m >216 | 4 | 4 | --- |
| Potassium | ppm ASTM D5185m >20 | 21 | 60 | --- |

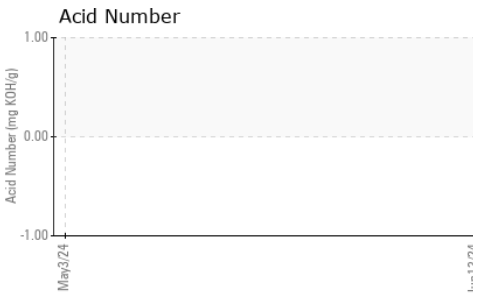
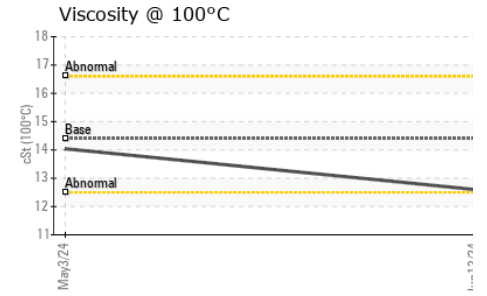
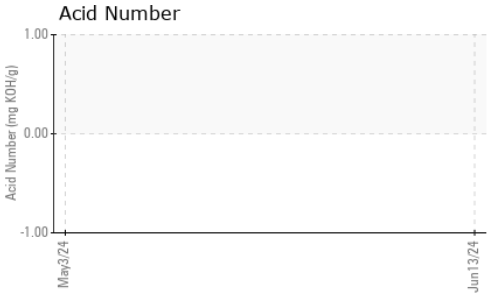
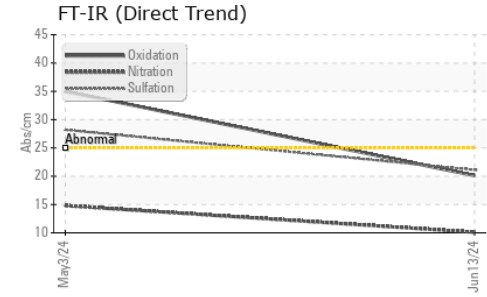
INFRA-RED

| method | limit/base | current | history1 | history2 |
|-----------|--------------------------|-------------|----------|----------|
| Soot % | % *ASTM D7844 >3 | 0.2 | 0.4 | --- |
| Nitration | Abs/cm *ASTM D7624 >20 | 10.1 | 14.8 | --- |
| Sulfation | Abs/.1mm *ASTM D7415 >30 | 21.1 | 28.2 | --- |

FLUID DEGRADATION

| method | limit/base | current | history1 | history2 |
|------------------|--------------------------|-------------|----------|----------|
| Oxidation | Abs/.1mm *ASTM D7414 >25 | 20.1 | 35.0 | --- |
| Base Number (BN) | mg KOH/g ASTM D2896 8.5 | 8.54 | 6.41 | --- |

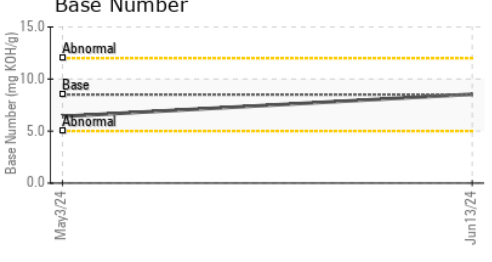
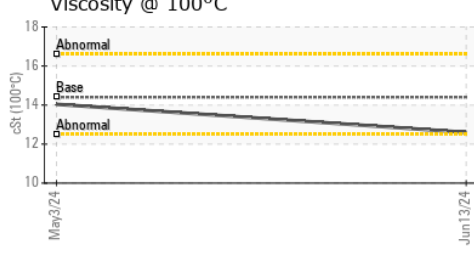
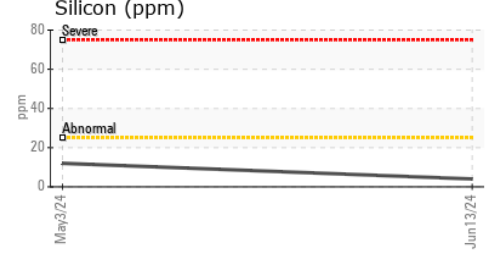
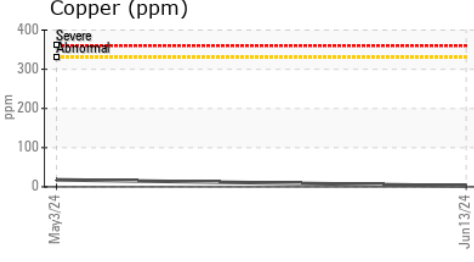
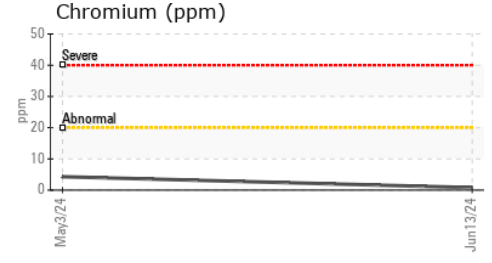
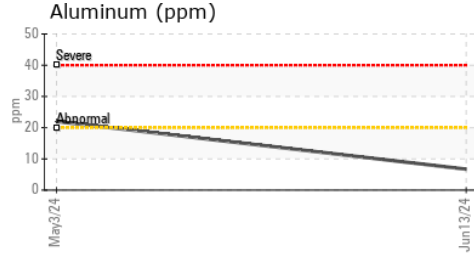
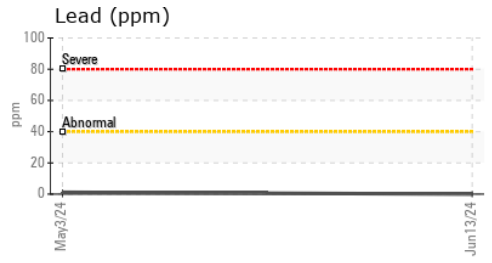
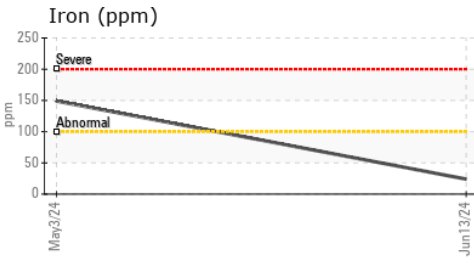
OIL ANALYSIS REPORT



| VISUAL | method | limit/base | current | history1 | history2 |
|------------------|--------|------------|---------|----------|----------|
| White Metal | scalar | *Visual | NONE | ▲ MODER | LIGHT |
| 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 |
| Free Water | scalar | *Visual | | NEG | NEG |

| FLUID PROPERTIES | method | limit/base | current | history1 | history2 |
|------------------|--------|------------|---------|----------|----------|
| Visc @ 100°C | cSt | ASTM D445 | 14.4 | 12.6 | 14.04 |

GRAPHS



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : PCA0113905 **Received** : 19 Jun 2024
Lab Number : 06214926 **Tested** : 21 Jun 2024
Unique Number : 11087790 **Diagnosed** : 21 Jun 2024 - Sean Felton
Test Package : MOB 2 (Additional Tests: TAN Man)

SCRAP METAL SERVICES (SMS Mill Services LLC)
 250 WEST U.S. HWY 12
 CHESTERTON, IN
 US 46304
 Contact: DOMINIC WHITE
 dwhite@scrapmetalservices.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)