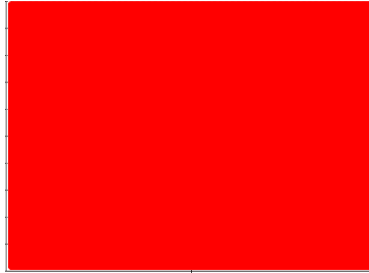




Machine Id
880
 Component
Diesel Engine
 Fluid
NOT GIVEN (--- Oz)



DIAGNOSIS

Recommendation

We advise that you check for the source of the coolant leak. Check for low coolant level. We advise that you check the fuel injection system. Oil and filter change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

Wear

All component wear rates are normal.

Contamination

Sodium and/or potassium levels are high. Test for glycol is positive. There is a high amount of fuel present in the oil.

Fluid Condition

Fuel is present in the oil and is lowering the viscosity. The BN result indicates that there is suitable alkalinity remaining in the oil. The oil is no longer serviceable due to the presence of contaminants.

SAMPLE INFORMATION

| | method | limit/base | current | history 1 | history 2 |
|---------------|-------------|-------------|--------------------|-----------|-----------|
| Sample Number | Client Info | | PCA0083477 | --- | --- |
| Sample Date | Client Info | | 29 Apr 2023 | --- | --- |
| Machine Age | mls | Client Info | 0 | --- | --- |
| Oil Age | mls | Client Info | 0 | --- | --- |
| Oil Changed | Client Info | | Changed | --- | --- |
| Sample Status | | | SEVERE | --- | --- |

WEAR METALS

| | method | limit/base | current | history 1 | history 2 |
|----------|--------|------------------|--------------|-----------|-----------|
| Iron | ppm | ASTM D5185m >100 | 88 | --- | --- |
| Chromium | ppm | ASTM D5185m >20 | 13 | --- | --- |
| Nickel | ppm | ASTM D5185m >4 | <1 | --- | --- |
| Titanium | ppm | ASTM D5185m | <1 | --- | --- |
| Silver | ppm | ASTM D5185m >3 | 0 | --- | --- |
| Aluminum | ppm | ASTM D5185m >20 | 5 | --- | --- |
| Lead | ppm | ASTM D5185m >40 | <1 | --- | --- |
| Copper | ppm | ASTM D5185m >330 | 2 | --- | --- |
| Tin | ppm | ASTM D5185m >15 | <1 | --- | --- |
| Vanadium | ppm | ASTM D5185m | 0 | --- | --- |
| Cadmium | ppm | ASTM D5185m | 0 | --- | --- |

ADDITIVES

| | method | limit/base | current | history 1 | history 2 |
|------------|--------|-------------|--------------|-----------|-----------|
| Boron | ppm | ASTM D5185m | 23 | --- | --- |
| Barium | ppm | ASTM D5185m | 0 | --- | --- |
| Molybdenum | ppm | ASTM D5185m | 27 | --- | --- |
| Manganese | ppm | ASTM D5185m | <1 | --- | --- |
| Magnesium | ppm | ASTM D5185m | 264 | --- | --- |
| Calcium | ppm | ASTM D5185m | 893 | --- | --- |
| Phosphorus | ppm | ASTM D5185m | 439 | --- | --- |
| Zinc | ppm | ASTM D5185m | 484 | --- | --- |
| Sulfur | ppm | ASTM D5185m | 1587 | --- | --- |

CONTAMINANTS

| | method | limit/base | current | history 1 | history 2 |
|-----------|--------|-----------------|---------------|-----------|-----------|
| Silicon | ppm | ASTM D5185m >25 | 5 | --- | --- |
| Sodium | ppm | ASTM D5185m | ▲ 40 | --- | --- |
| Potassium | ppm | ASTM D5185m >20 | ▲ 276 | --- | --- |
| Fuel | % | ASTM D3524 >5 | ● 32.6 | --- | --- |
| Glycol | % | *ASTM D2982 | ● 0.10 | --- | --- |

INFRA-RED

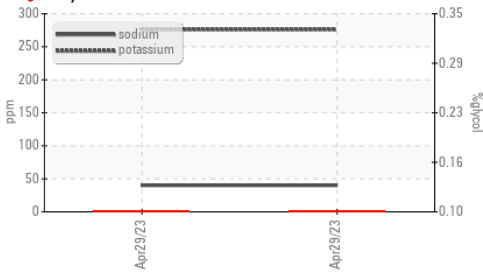
| | method | limit/base | current | history 1 | history 2 |
|-----------|----------|-----------------|-------------|-----------|-----------|
| Soot % | % | *ASTM D7844 >3 | 0.4 | --- | --- |
| Nitration | Abs/cm | *ASTM D7624 >20 | 14.0 | --- | --- |
| Sulfation | Abs/.1mm | *ASTM D7415 >30 | 33.8 | --- | --- |

FLUID DEGRADATION

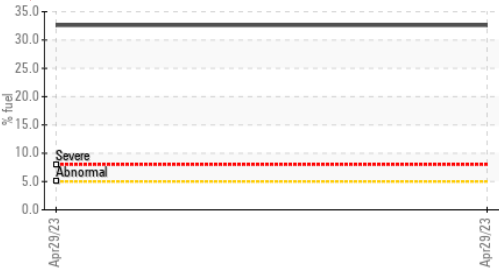
| | method | limit/base | current | history 1 | history 2 |
|------------------|----------|-----------------|--------------|-----------|-----------|
| Oxidation | Abs/.1mm | *ASTM D7414 >25 | 56.5 | --- | --- |
| Base Number (BN) | mg KOH/g | ASTM D2896 | ▲ 0.0 | --- | --- |

OIL ANALYSIS REPORT

Glycol Contamination



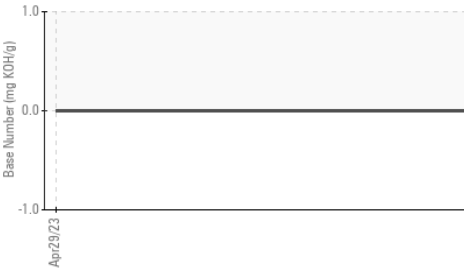
Fuel Dilution



Viscosity @ 100°C



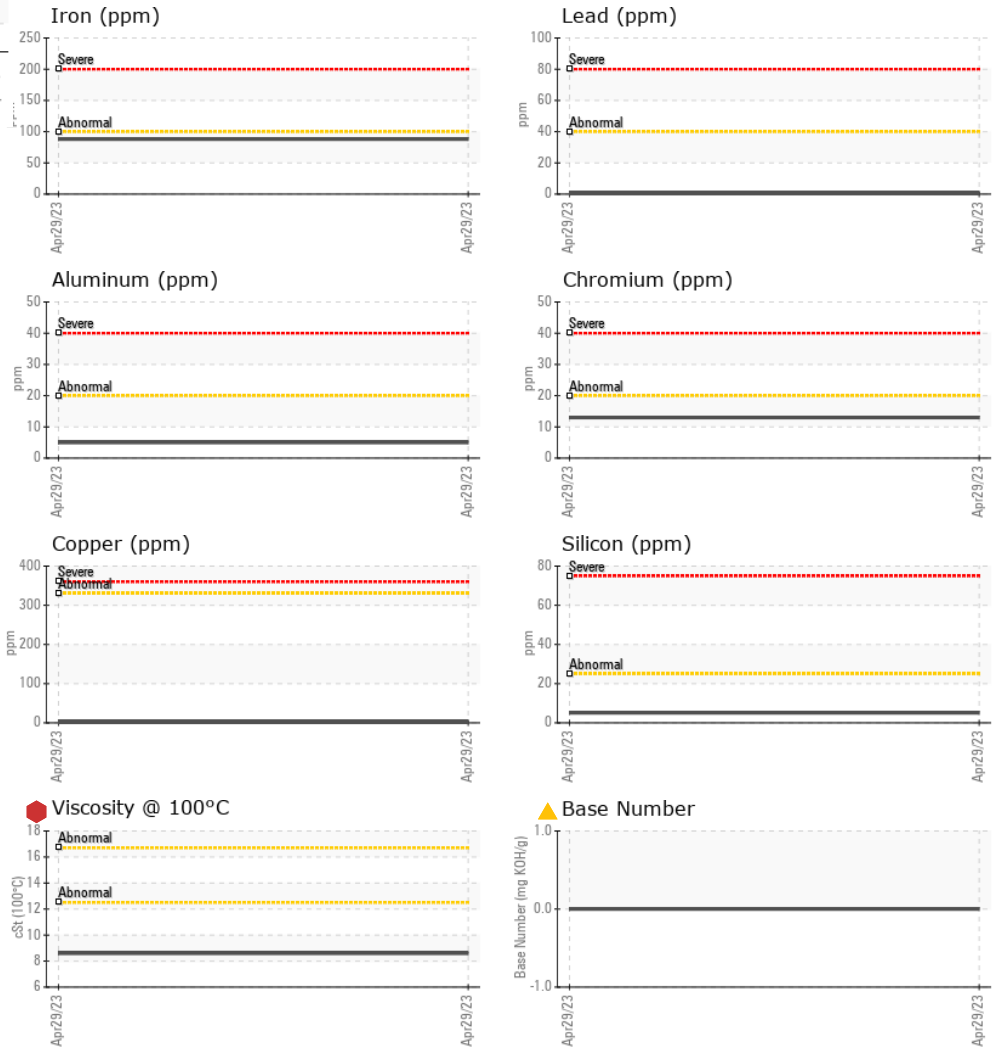
Base Number



| VISUAL | method | limit/base | current | history 1 | history 2 |
|------------------|--------|------------|---------|-----------|-----------|
| White Metal | scalar | *Visual | NONE | NONE | --- |
| Yellow Metal | scalar | *Visual | NONE | NONE | --- |
| Precipitate | scalar | *Visual | NONE | NONE | --- |
| Silt | scalar | *Visual | NONE | NONE | --- |
| Debris | scalar | *Visual | NONE | NONE | --- |
| Sand/Dirt | scalar | *Visual | NONE | NONE | --- |
| Appearance | scalar | *Visual | NORML | NORML | --- |
| Odor | scalar | *Visual | NORML | NORML | --- |
| Emulsified Water | scalar | *Visual | >0.2 | NEG | --- |
| Free Water | scalar | *Visual | | NEG | --- |

| FLUID PROPERTIES | method | limit/base | current | history 1 | history 2 |
|------------------|--------|------------|------------|-----------|-----------|
| Visc @ 100°C | cSt | ASTM D445 | 8.6 | --- | --- |

GRAPHS



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : PCA0083477 **Received** : 05 May 2023
Lab Number : 05839719 **Diagnosed** : 10 May 2023
Unique Number : 10458522 **Diagnostician** : Jonathan Hester
Test Package : MOB 1 (Additional Tests: FuelDilution, Glycol, PercentFuel, TBN)

ALBERT HOGOBOOM OILFIELD TRUCKING INC
 767 OIL HILL ROAD
 EL DORADO, KS
 US 67042
 Contact: LOREN JACK
 loren@hogoboom.net

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)

T:
F: (316)321-1396