



OIL ANALYSIS REPORT

Sample Rating Trend



VISCOSITY



Area

WATKINS BLOCK TRUCK SHOP OMAHA

Machine Id

63 Mule [WATKINS BLOCK TRUCK SHOP OMAHA]

Component

Rear Diesel Engine

Fluid

PETRO CANADA DURON SHP 10W30 (8 QTS)

DIAGNOSIS

Recommendation

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

Wear

All component wear rates are normal.

Contamination

Elemental level of silicon (Si) above normal indicating ingress of seal material.

Fluid Condition

The oil viscosity is higher than normal. The BN result indicates that there is suitable alkalinity remaining in the oil. Confirm oil type.

SAMPLE INFORMATION

| | method | limit/base | current | history1 | history2 |
|---------------|-------------|-------------|--------------------|----------|----------|
| Sample Number | Client Info | | SBP0007089 | --- | --- |
| Sample Date | Client Info | | 10 May 2024 | --- | --- |
| Machine Age | hrs | Client Info | 1932 | --- | --- |
| Oil Age | hrs | Client Info | 196 | --- | --- |
| Oil Changed | Client Info | | Changed | --- | --- |
| Sample Status | | | ATTENTION | --- | --- |

CONTAMINATION

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

WEAR METALS

| | method | limit/base | current | history1 | history2 |
|----------|--------|------------------|--------------|----------|----------|
| Iron | ppm | ASTM D5185m >100 | 15 | --- | --- |
| Chromium | ppm | ASTM D5185m >20 | 4 | --- | --- |
| Nickel | ppm | ASTM D5185m >4 | 0 | --- | --- |
| Titanium | ppm | ASTM D5185m | <1 | --- | --- |
| Silver | ppm | ASTM D5185m >3 | 0 | --- | --- |
| Aluminum | ppm | ASTM D5185m >20 | 5 | --- | --- |
| Lead | ppm | ASTM D5185m >40 | 0 | --- | --- |
| 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 | history1 | history2 |
|------------|--------|------------------|-------------|----------|----------|
| Boron | ppm | ASTM D5185m 2 | 180 | --- | --- |
| Barium | ppm | ASTM D5185m 0 | 0 | --- | --- |
| Molybdenum | ppm | ASTM D5185m 50 | 4 | --- | --- |
| Manganese | ppm | ASTM D5185m 0 | 1 | --- | --- |
| Magnesium | ppm | ASTM D5185m 950 | 120 | --- | --- |
| Calcium | ppm | ASTM D5185m 1050 | 2024 | --- | --- |
| Phosphorus | ppm | ASTM D5185m 995 | 1032 | --- | --- |
| Zinc | ppm | ASTM D5185m 1180 | 1147 | --- | --- |
| Sulfur | ppm | ASTM D5185m 2600 | 3686 | --- | --- |

CONTAMINANTS

| | method | limit/base | current | history1 | history2 |
|-----------|--------|-----------------|-----------|----------|----------|
| Silicon | ppm | ASTM D5185m >25 | 6 | --- | --- |
| Sodium | ppm | ASTM D5185m | 36 | --- | --- |
| Potassium | ppm | ASTM D5185m >20 | 26 | --- | --- |

INFRA-RED

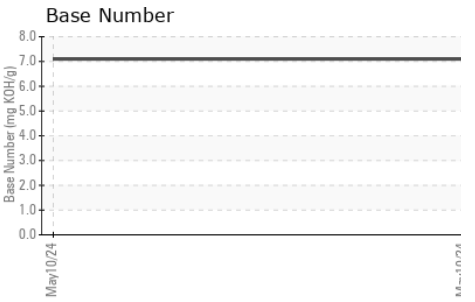
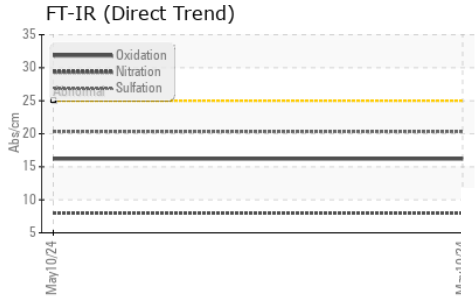
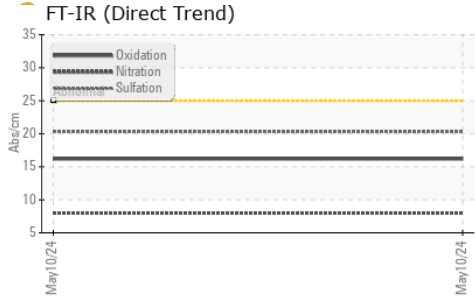
| | method | limit/base | current | history1 | history2 |
|-----------|----------|-----------------|-------------|----------|----------|
| Soot % | % | *ASTM D7844 >3 | 0.1 | --- | --- |
| Nitration | Abs/cm | *ASTM D7624 >20 | 8.0 | --- | --- |
| Sulfation | Abs/.1mm | *ASTM D7415 >30 | 20.3 | --- | --- |

FLUID DEGRADATION

| | method | limit/base | current | history1 | history2 |
|------------------|----------|-----------------|-------------|----------|----------|
| Oxidation | Abs/.1mm | *ASTM D7414 >25 | 16.2 | --- | --- |
| Base Number (BN) | mg KOH/g | ASTM D2896 | 7.1 | --- | --- |



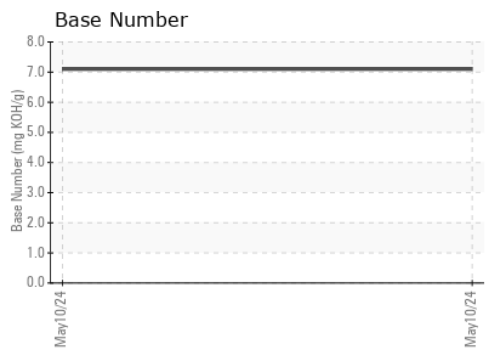
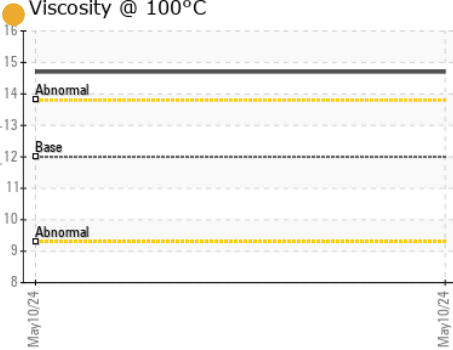
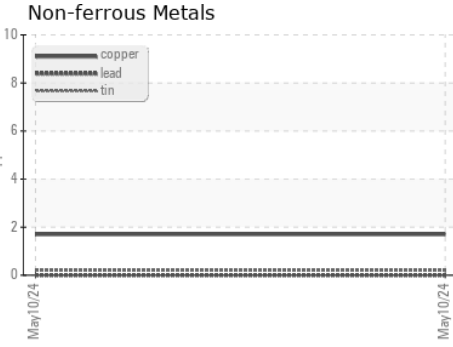
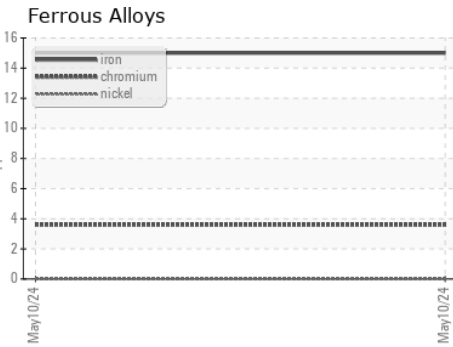
OIL ANALYSIS REPORT



| VISUAL | method | limit/base | current | history1 | history2 |
|------------------|--------|------------|---------|--------------|----------|
| 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 | history1 | history2 |
|------------------|--------|------------|---------|-------------|----------|
| Visc @ 100°C | cSt | ASTM D445 | 12.00 | 14.7 | --- |

GRAPHS



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : SBP0007089 **Received** : 16 May 2024
Lab Number : **06182262** **Tested** : 18 May 2024
Unique Number : 11033588 **Diagnosed** : 20 May 2024 - Sean Felton
Test Package : FLEET

Watkins Block Truck Shop Omaha - 602227
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 Omaha, NE
 US 68138

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)