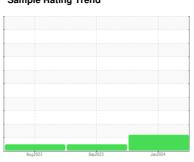


OIL ANALYSIS REPORT

Sample Rating Trend







731571 Component

Diesel Engine

PETRO CANADA DURON SHP 10W30 (--- GAL)

DIAGNOSIS

Recommendation

Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

Contamination

There is no indication of any contamination in the oil.

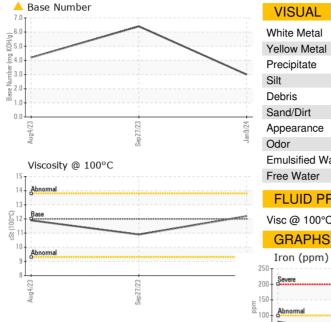
Fluid Condition

The BN level is low. The condition of the oil is acceptable for the time in service.

| Sample Date Client Info 09 Jan 2024 27 Sep 2023 04 Aug 2023 Machine Age mls Client Info 122163 290157 272304 Oil Age mls Client Info 122163 290157 272304 Oil Age mls Client Info Changed Changed Changed Changed Changed Changed Changed Changed Changed NORMAL NORMAL NORMAL NORMAL NORMAL NORMAL NORMAL NORMAL CONTAMINATION method limit/base current history1 history2 Mater WC Method So <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 < | AL) | | Aug | 2023 | Sep2023 Jan202 | 4 | |
|--|------------------|----------|-------------|------------|----------------|-------------|-------------|
| Client Info 09 Jan 2024 27 Sep 2023 04 Aug 2025 | SAMPLE INFORM | MATION | method | limit/base | current | history1 | history2 |
| Machine Age mls Client Info 122163 290157 272304 | Sample Number | | Client Info | | PCA0114545 | PCA0105326 | PCA0102909 |
| Oil Age | Sample Date | | Client Info | | 09 Jan 2024 | 27 Sep 2023 | 04 Aug 2023 |
| Contained Client Info Changed ABNORMAL NORMAL NORMAL NORMAL | Machine Age | mls | Client Info | | 122163 | 290157 | 272304 |
| ABNORMAL NORMAL NORMAL NORMAL | Oil Age | mls | Client Info | | 122163 | 290157 | 272304 |
| CONTAMINATION | Oil Changed | | Client Info | | Changed | Changed | Changed |
| Fuel | Sample Status | | | | ABNORMAL | NORMAL | NORMAL |
| Water Glycol WC Method >0.2 NEG NEG NEG NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >100 83 27 80 Chromium ppm ASTM D5185m >20 3 1 3 Nickel ppm ASTM D5185m >4 <1 <1 <1 Silver ppm ASTM D5185m >4 <1 0 2 Silver ppm ASTM D5185m >4 0 0 0 Aluminum ppm ASTM D5185m >40 0 0 0 Copper ppm ASTM D5185m >40 0 0 0 Copper ppm ASTM D5185m >15 <1 <1 1 Vanadium ppm ASTM D5185m >15 <1 <1 1 Vanadium ppm ASTM D5185m 0 0 <t< td=""><td>CONTAMINATI</td><td>ON</td><td>method</td><td>limit/base</td><td>current</td><td>history1</td><td>history2</td></t<> | CONTAMINATI | ON | method | limit/base | current | history1 | history2 |
| WEAR METALS | Fuel | | WC Method | >5 | <1.0 | <1.0 | <1.0 |
| WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >100 83 27 80 Chromium ppm ASTM D5185m >20 3 1 3 Nickel ppm ASTM D5185m >20 1 <1 | Water | | WC Method | >0.2 | NEG | NEG | NEG |
| | Glycol | | WC Method | | NEG | NEG | NEG |
| Chromium | WEAR METALS | 3 | method | limit/base | current | history1 | history2 |
| Nickel | Iron | ppm | ASTM D5185m | >100 | | | |
| Titanium | | ppm | | | _ | | |
| Silver | | • • | | >4 | | | |
| Aluminum ppm ASTM D5185m >20 12 6 17 Lead ppm ASTM D5185m >40 0 0 0 Copper ppm ASTM D5185m >330 7 6 16 Tin ppm ASTM D5185m >15 <1 | | | | | | | |
| Lead | | • • | | | | | |
| Copper ppm ASTM D5185m >330 7 6 16 Tin ppm ASTM D5185m >15 <1 | | | | | | | |
| Tin | | • • | | | | | |
| Vanadium ppm ASTM D5185m 0 <1 0 Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 2 2 <1 0 Barium ppm ASTM D5185m 0 0 0 1 Molybdenum ppm ASTM D5185m 50 65 66 63 Manganese ppm ASTM D5185m 0 1 <1 1 Magnesium ppm ASTM D5185m 950 1002 1080 946 Calcium ppm ASTM D5185m 950 1002 1080 946 Calcium ppm ASTM D5185m 995 1136 1117 1058 Zinc ppm ASTM D5185m 995 1136 1117 1058 Zinc ppm ASTM D5185m 2600 2447 2775 < | | | | | | | |
| Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 2 2 <1 | | • • | | >15 | | | |
| ADDITIVES | | | | | - | | |
| Boron | | ppm | | | | | |
| Barium ppm ASTM D5185m 0 0 0 1 Molybdenum ppm ASTM D5185m 50 65 66 63 Manganese ppm ASTM D5185m 0 1 <1 | | | | | | | |
| Molybdenum ppm ASTM D5185m 50 65 66 63 Manganese ppm ASTM D5185m 0 1 <1 1 Magnesium ppm ASTM D5185m 950 1002 1080 946 Calcium ppm ASTM D5185m 950 1002 1080 946 Calcium ppm ASTM D5185m 1050 1258 1375 1281 Phosphorus ppm ASTM D5185m 995 1136 1117 1058 Zinc ppm ASTM D5185m 1180 1397 1433 1310 Sulfur ppm ASTM D5185m 2600 2447 2775 2462 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 13 5 7 Sodium ppm ASTM D5185m 1 3 <1 3 <1 Potassium ppm | | | | | | | |
| Manganese ppm ASTM D5185m 0 1 <1 1 Magnesium ppm ASTM D5185m 950 1002 1080 946 Calcium ppm ASTM D5185m 1050 1258 1375 1281 Phosphorus ppm ASTM D5185m 995 1136 1117 1058 Zinc ppm ASTM D5185m 180 1397 1433 1310 Sulfur ppm ASTM D5185m 2600 2447 2775 2462 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 13 5 7 Sodium ppm ASTM D5185m >20 18 10 30 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 2.3 0.9 1.6 Nitration Abs/:1mm *ASTM D7415 | | | | | | | |
| Magnesium ppm ASTM D5185m 950 1002 1080 946 Calcium ppm ASTM D5185m 1050 1258 1375 1281 Phosphorus ppm ASTM D5185m 1050 1136 1117 1058 Zinc ppm ASTM D5185m 1180 1397 1433 1310 Sulfur ppm ASTM D5185m 2600 2447 2775 2462 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 13 5 7 Sodium ppm ASTM D5185m >20 18 10 30 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 2.3 0.9 1.6 Nitration Abs/.1mm *ASTM D7624 >20 16.6 9.6 14.1 Sulfation Abs/.1mm | • | | | | | | |
| Calcium ppm ASTM D5185m 1050 1258 1375 1281 Phosphorus ppm ASTM D5185m 995 1136 1117 1058 Zinc ppm ASTM D5185m 1180 1397 1433 1310 Sulfur ppm ASTM D5185m 2600 2447 2775 2462 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 13 5 7 Sodium ppm ASTM D5185m >20 18 10 30 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 2.3 0.9 1.6 Nitration Abs/cm *ASTM D7624 >20 16.6 9.6 14.1 Sulfation Abs/.1mm *ASTM D7415 >30 31.4 22.3 27.2 FLUID DEGRADATION | • | | | | | | |
| Phosphorus ppm ASTM D5185m 995 1136 1117 1058 Zinc ppm ASTM D5185m 1180 1397 1433 1310 Sulfur ppm ASTM D5185m 2600 2447 2775 2462 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 13 5 7 Sodium ppm ASTM D5185m >20 18 10 30 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 2.3 0.9 1.6 Nitration Abs/cm *ASTM D7624 >20 16.6 9.6 14.1 Sulfation Abs/.1mm *ASTM D7415 >30 31.4 22.3 27.2 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm </td <td>-</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> | - | | | | | | |
| Zinc ppm ASTM D5185m 1180 1397 1433 1310 Sulfur ppm ASTM D5185m 2600 2447 2775 2462 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 13 5 7 Sodium ppm ASTM D5185m >20 18 10 30 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 2.3 0.9 1.6 Nitration Abs/cm *ASTM D7624 >20 16.6 9.6 14.1 Sulfation Abs/.1mm *ASTM D7415 >30 31.4 22.3 27.2 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 32.9 18.9 26.6 | | | | | | | |
| Sulfur ppm ASTM D5185m 2600 2447 2775 2462 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 13 5 7 Sodium ppm ASTM D5185m 20 18 10 30 Potassium ppm ASTM D5185m >20 18 10 30 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 2.3 0.9 1.6 Nitration Abs/cm *ASTM D7624 >20 16.6 9.6 14.1 Sulfation Abs/.1mm *ASTM D7415 >30 31.4 22.3 27.2 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 32.9 18.9 26.6 | | • • | | | | | |
| Silicon ppm ASTM D5185m >25 13 5 7 Sodium ppm ASTM D5185m 1 3 <1 Potassium ppm ASTM D5185m >20 18 10 30 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 2.3 0.9 1.6 Nitration Abs/cm *ASTM D7624 >20 16.6 9.6 14.1 Sulfation Abs/.1mm *ASTM D7415 >30 31.4 22.3 27.2 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 32.9 18.9 26.6 | Sulfur | | | | | | |
| Sodium ppm ASTM D5185m 1 3 <1 Potassium ppm ASTM D5185m >20 18 10 30 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 2.3 0.9 1.6 Nitration Abs/cm *ASTM D7624 >20 16.6 9.6 14.1 Sulfation Abs/.1mm *ASTM D7415 >30 31.4 22.3 27.2 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 32.9 18.9 26.6 | CONTAMINAN | TS | method | limit/base | current | history1 | history2 |
| Potassium ppm ASTM D5185m >20 18 10 30 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 2.3 0.9 1.6 Nitration Abs/cm *ASTM D7624 >20 16.6 9.6 14.1 Sulfation Abs/.1mm *ASTM D7415 >30 31.4 22.3 27.2 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 32.9 18.9 26.6 | Silicon | ppm | ASTM D5185m | >25 | 13 | 5 | 7 |
| INFRA-RED | Sodium | ppm | ASTM D5185m | | 1 | 3 | <1 |
| Soot % *ASTM D7844 >3 2.3 0.9 1.6 Nitration Abs/cm *ASTM D7624 >20 16.6 9.6 14.1 Sulfation Abs/.1mm *ASTM D7415 >30 31.4 22.3 27.2 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 32.9 18.9 26.6 | Potassium | ppm | ASTM D5185m | >20 | 18 | 10 | 30 |
| Nitration Abs/cm *ASTM D7624 >20 16.6 9.6 14.1 Sulfation Abs/.1mm *ASTM D7415 >30 31.4 22.3 27.2 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 32.9 18.9 26.6 | INFRA-RED | | method | limit/base | current | history1 | history2 |
| Sulfation Abs/.1mm *ASTM D7415 >30 31.4 22.3 27.2 FLUID DEGRADATION method limit/base current history1 history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 32.9 18.9 26.6 | Soot % | % | *ASTM D7844 | >3 | 2.3 | 0.9 | 1.6 |
| FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 32.9 18.9 26.6 | Nitration | Abs/cm | *ASTM D7624 | >20 | 16.6 | 9.6 | 14.1 |
| Oxidation Abs/.1mm *ASTM D7414 >25 32.9 18.9 26.6 | Sulfation | Abs/.1mm | *ASTM D7415 | >30 | 31.4 | 22.3 | 27.2 |
| | FLUID DEGRAD | ATION | method | limit/base | current | history1 | history2 |
| Base Number (BN) mg KOH/g ASTM D2896 | Oxidation | Abs/.1mm | *ASTM D7414 | >25 | 32.9 | 18.9 | 26.6 |
| | Base Number (BN) | mg KOH/g | ASTM D2896 | | △ 3.0 | 6.4 | 4.2 |



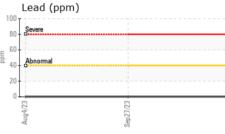
OIL ANALYSIS REPORT

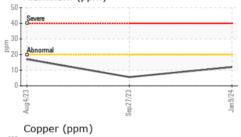


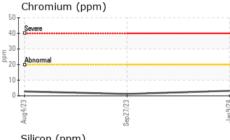
| VISUAL | | method | limit/base | current | history1 | history2 |
|-------------------------|--------|---------|------------|---------|----------|----------|
| White Metal | scalar | *Visual | NONE | NONE | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | NONE | NONE | NONE |
| Precipitate | scalar | *Visual | NONE | NONE | NONE | NONE |
| 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 | >0.2 | NEG | NEG | NEG |
| Free Water | scalar | *Visual | | NEG | NEG | NEG |
| FILIID PROPE | RTIES | method | limit/hase | current | history1 | history2 |
| FLUID PROPE | RTIES | method | limit/base | current | history1 | history2 |

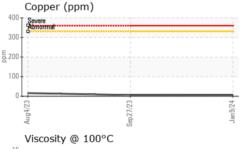
| I LOID I HOI L | ITTIEO | mounoa | mme bacc | oarront | Thotoly I | motory |
|----------------|--------|-----------|----------|---------|-----------|--------|
| Visc @ 100°C | cSt | ASTM D445 | 12.00 | 12.2 | 10.9 | 11.9 |

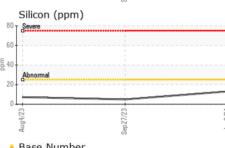
| 1 | - |
|-------|-----------|
| | |
| | |
| 27/23 | Jan 9/24 |
| Sep2 | Jar |
| | |
| | Sep.27/23 |

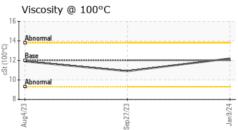


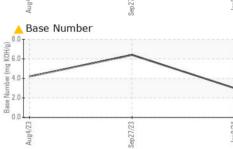














Laboratory Sample No.

Lab Number **Unique Number**

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

: PCA0114545 : 06060902 : 10832284

Recieved : 16 Jan 2024 Diagnosed : 17 Jan 2024 Diagnostician : Jonathan Hester

Test Package : MOB 1 (Additional Tests: TBN) 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)

MILLER TRUCK LEASING #118

2196 BENNETT ROAD PHILADELPHIA, PA US 19116

Contact: ROSTY VITER rviter@millertransgroup.com

T: (215)552-9832 F: (215)552-9892

Report Id: MILPHINE [WUSCAR] 06060902 (Generated: 01/17/2024 10:49:00) Rev: 1

Contact/Location: ROSTY VITER - MILPHINE