

OIL ANALYSIS REPORT

Sample Rating Trend

NORMAL



Machine Id **238270**

Component **Diesel Engine**

PETRO CANADA DURON SHP 10W30 (--- 0

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor. Please specify the component make and model with your next sample.

Metal levels are typical for a new component breaking in.

Contamination

Elevated aluminum (Al) and/or lead (Pb) and potassium (K) levels in your metals analysis are likely a result of solder flux release into the lubricant and is common on new equipment/components. There is no indication of any contamination in the oil.

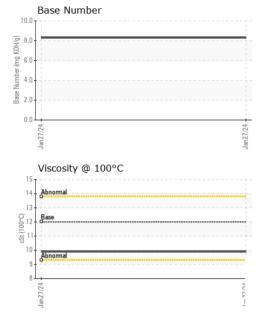
Fluid Condition

The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

| SAMPLE INFORMATION method limit/base current history2 history2 sample Number Client Info 27 Jan 2024 | | | | | | | • |
|--|------------------|----------|-------------|------------|-------------|----------|----------|
| Continue | AL) | | | | Jan 2024 | | |
| Compage Comp | SAMPLE INFOR | RMATION | method | limit/base | current | history1 | history2 |
| Company Comp | Sample Number | | Client Info | | PCA0105585 | | |
| Dit Age | | | Client Info | | 27 Jan 2024 | | |
| Client Info N/A | • | mls | Client Info | | 22337 | | |
| CONTAMINATION method militibase current history1 history2 | | mls | Client Info | | 0 | | |
| CONTAMINATION method militibase current history1 history2 | Oil Changed | | Client Info | | N/A | | |
| Victor V | | | | | NORMAL | | |
| WEAR METALS | CONTAMINAT | ΓΙΟΝ | method | limit/base | current | history1 | history2 |
| Water | uel | | WC Method | >5 | <1.0 | | |
| WEAR METALS | Vater | | WC Method | >0.2 | | | |
| WEAR METALS method limit/base current history1 history2 fon ppm ASTM D5185m >100 82 chromium ppm ASTM D5185m >20 2 clickel ppm ASTM D5185m >4 2 distrainum ppm ASTM D5185m >3 0 duminum ppm ASTM D5185m >20 31 dead ppm ASTM D5185m >40 <1 | | | | | - | | |
| Con | <u> </u> | 0 | | 12 24 // | | 11. | 1: |
| ASTM D5185m Page | | _S | | | | nistory1 | history2 |
| Sickel ppm | | | | | | | |
| ASTM D5185m STM D5185m ST | | | | | | | |
| STM D5185m STM | | | | >4 | _ | | |
| ASTM D5185m >20 31 | | | | | | | |
| Part | Silver | ppm | ASTM D5185m | >3 | | | |
| April | lluminum | ppm | ASTM D5185m | >20 | 31 | | |
| Asymptotic Asy | ead | ppm | ASTM D5185m | >40 | <1 | | |
| Anadium | Copper | ppm | ASTM D5185m | >330 | 34 | | |
| ADDITIVES | ïn | ppm | ASTM D5185m | >15 | 4 | | |
| ADDITIVES | /anadium | ppm | ASTM D5185m | | 0 | | |
| Soron ppm ASTM D5185m 2 29 | Cadmium | ppm | ASTM D5185m | | 0 | | |
| Description | ADDITIVES | | method | limit/base | current | history1 | history2 |
| Molybdenum ppm ASTM D5185m 50 43 Manganese ppm ASTM D5185m 0 10 Magnesium ppm ASTM D5185m 950 531 Calcium ppm ASTM D5185m 1050 1515 Phosphorus ppm ASTM D5185m 1180 952 Vinc ppm ASTM D5185m 2600 2534 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 12 Codassium ppm ASTM D5185m >20 72 Potassium ppm ASTM D5185m >20 72 Potassium ppm ASTM D5185m >20 72 Potassium ppm ASTM D78 | Boron | ppm | ASTM D5185m | 2 | 29 | | |
| Manganese ppm ASTM D5185m 0 10 Magnesium ppm ASTM D5185m 950 531 Calcium ppm ASTM D5185m 1050 1515 Phosphorus ppm ASTM D5185m 995 797 Vinc ppm ASTM D5185m 2600 2534 Sulfur ppm ASTM D5185m 2600 2534 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 12 Godium ppm ASTM D5185m >20 72 Potassium ppm ASTM D5185m >20 72 INFRA-RED method limit/base current history1 history2 Soot % *ASTM D7844 >3 | Barium | ppm | ASTM D5185m | 0 | 0 | | |
| Magnesium ppm ASTM D5185m 950 531 Calcium ppm ASTM D5185m 1050 1515 Phosphorus ppm ASTM D5185m 995 797 Cinc ppm ASTM D5185m 1180 952 Sulfur ppm ASTM D5185m 2600 2534 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 12 Potassium ppm ASTM D5185m >20 72 Potassium ppm ASTM D5185m >20 72 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7624 >20 10.0 Goto % *ASTM D77415 >30 | Nolybdenum | ppm | ASTM D5185m | 50 | 43 | | |
| Calcium ppm ASTM D5185m 1050 1515 Phosphorus ppm ASTM D5185m 995 797 Cinc ppm ASTM D5185m 1180 952 Sulfur ppm ASTM D5185m 2600 2534 CONTAMINANTS method limit/base current history1 history2 Solicon ppm ASTM D5185m >25 12 Soldium ppm ASTM D5185m 6 Potassium ppm ASTM D5185m >20 72 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.4 Soot % % *ASTM D7624 >20 10.0 Solfation Abs/.1mm *ASTM D7415 >30 22.9 | /langanese | ppm | ASTM D5185m | 0 | 10 | | |
| Phosphorus | /lagnesium | ppm | ASTM D5185m | 950 | 531 | | |
| Sinc ppm ASTM D5185m 1180 952 | Calcium | ppm | ASTM D5185m | 1050 | 1515 | | |
| Contamination | hosphorus | ppm | ASTM D5185m | 995 | 797 | | |
| CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 12 Sodium ppm ASTM D5185m 6 Potassium ppm ASTM D5185m >20 72 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.4 Silitration Abs/cm *ASTM D7624 >20 10.0 Sulfation Abs/.1mm *ASTM D7415 >30 22.9 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 22.1 | | | ASTM D5185m | 1180 | 952 | | |
| Solition ppm ASTM D5185m >25 12 | ulfur | | ASTM D5185m | 2600 | 2534 | | |
| Indicated and state of the color o | CONTAMINAN | NTS _ | method | limit/base | current | history1 | history2 |
| Sodium ppm ASTM D5185m 6 Potassium ppm ASTM D5185m >20 72 INFRA-RED method limit/base current history1 history2 Goot % *ASTM D7844 >3 0.4 Bitration Abs/cm *ASTM D7624 >20 10.0 Gulfation Abs/.1mm *ASTM D7415 >30 22.9 FLUID DEGRADATION method limit/base current history1 history2 exidation Abs/.1mm *ASTM D7414 >25 22.1 | Silicon | ppm | ASTM D5185m | >25 | 12 | | |
| Potassium ppm ASTM D5185m >20 72 INFRA-RED method limit/base current history1 history2 Goot % *ASTM D7844 >3 0.4 Bilitration Abs/cm *ASTM D7624 >20 10.0 Gulfation Abs/.1mm *ASTM D7415 >30 22.9 FLUID DEGRADATION method limit/base current history1 history2 Dividation Abs/.1mm *ASTM D7414 >25 22.1 | odium | | ASTM D5185m | | 6 | | |
| Soot % % *ASTM D7844 >3 0.4 Sulfration Abs/cm *ASTM D7624 >20 10.0 Sulfation Abs/.1mm *ASTM D7415 >30 22.9 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 22.1 | otassium | | ASTM D5185m | >20 | | | |
| Abs/cm *ASTM D7624 >20 10.0 Sulfation Abs/.1mm *ASTM D7415 >30 22.9 | INFRA-RED | | method | limit/base | current | history1 | history2 |
| Sulfation Abs/.1mm *ASTM D7415 >30 22.9 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 22.1 | Soot % | % | *ASTM D7844 | >3 | 0.4 | | |
| Sulfation Abs/.1mm *ASTM D7415 >30 22.9 FLUID DEGRADATION method limit/base current history1 history2 oxidation Abs/.1mm *ASTM D7414 >25 22.1 | litration | | | | | | |
| Oxidation | | | | | | | |
| | FLUID DEGRA | DATION | method | limit/base | current | history1 | history2 |
| |)xidation | Ahs/1mm | *ASTM D7414 | >25 | 22.1 | | |
| | Base Number (BN) | mg KOH/g | ASTM D2896 | 0 | 8.3 | | |



OIL ANALYSIS REPORT





| Visc @ 100°C | cSt | ASTM D445 | 12.00 | 9.9 | | |
|-------------------|-----|-----------|----------|---|---|--|
| GRAPHS | | | | | | |
| Iron (ppm) | | | | Lead (ppr | m) | |
| Severe | | | | Severe 80 | | |
| 1 | | | | 00 | | |
| Abnormal | | | | Abnormal | *************************************** | |
| 1 | | | | 20 | | |
| 724 | | | 1/24 | 0 1.74 | | |
| Jan27/24 | | | Jan27/24 | Jan27/24 | | |
| Aluminum (ppm) | | | | Chromiun | n (ppm) | |
| Severe | | | | Severe | | |
| | | | | | | |
| Abnormal | | | | Abnormal | *************************************** | |
| 1 | | | | 10 | | |
| 74-7 | | | 1/24 | 0 + 47 | | |
| Jan27/24 | | | Jan27/24 | Jan27/24 | | |
| Copper (ppm) | | | | Silicon (p | pm) | |
| Abnormal | | | | 80 - Severe | | |
|)+ | | | | 60 | | |
| | | | | Abnormal | | |
|)+ | | | | 20 | | |
| 724 | | | 1/24 | 0 14 47/ | | |
| Jan27/24 | | | Jan27/24 | Jan27/24 | | |
| Viscosity @ 100°C | | | | Base Num | nber | |
| Abnormal | | | | 0.0 NH 8.0 | | |
| Base | | | | 8.0 - 6.0 - 4.0 - 2.0 - 2.0 - 4.0 - 2.0 - 4.0 - 2.0 - 4.0 - 2.0 - 4.0 - 2.0 - | | |
| Base | | | | 4.0 | | |
| Abnormal | | | | 2.0 | | |
| Jan 27/24 | | | Jan27/24 | 0.0 Jan27/24 | | |
| 27 | | | 127 | 27. | | |





Certificate L2367

Laboratory Sample No.

Lab Number : 06107185 Unique Number : 10910682 Test Package : MOB 1 (Additional Tests: TBN)

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 : PCA0105585

Received **Tested** Diagnosed

: 04 Mar 2024 : 05 Mar 2024

: 05 Mar 2024 - Wes Davis

US 08360 Contact: JOHN KEEN jkeen@millertransgroup.com

1197 NORTH MAIN ROAD

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)

F: (856)696-5629

T:

VINELAND, NJ