

# **OIL ANALYSIS REPORT**

Sample Rating Trend



# KENWORTH V222

Component

**Diesel Engine** 

PETRO CANADA DURON HP 15W40 (--- GA

### DIAGNOSIS

### Recommendation

Resample at the next service interval to monitor.

All component wear rates are normal.

### Contamination

There is no indication of any contamination in the

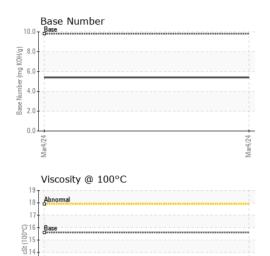
### **Fluid Condition**

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

| Sample Number  |                  |          |             |            |             |          |          |
|--|------------------|----------|-------------|------------|-------------|----------|----------|
| Sample Number   Client Info   Q4 Mar 2024  | L)               |          |             |            | Mar2024     |          |          |
| Sample Date   Client Info   Q4 Mar 2024  | SAMPLE INFOR     | MATION   | method      | limit/base | current     | history1 | history2 |
| Client Info  | Sample Number    |          | Client Info |            | PCA0112122  |          |          |
| Machine Age         mls         Client Info         124549             Oil Age         mls         Client Info         17731             Oil Age         mls         Client Info         17731             Sample Status         NORMAL             CONTAMINATION         method         Immit/base         current         history1         history           Fuel         WC Method         >5         <1.0  |                  |          | Client Info |            | 04 Mar 2024 |          |          |
| Oil Changed  | •                | mls      | Client Info |            | 124549      |          |          |
| NORMAL   |                  | mls      | Client Info |            | 17731       |          |          |
| CONTAMINATION  | Oil Changed      |          | Client Info |            | Changed     |          |          |
| Fuel   | Sample Status    |          |             |            | NORMAL      |          |          |
| Water  | CONTAMINAT       | ION      | method      | limit/base | current     | history1 | history2 |
| WEAR METALS  | Fuel             |          | WC Method   | >5         | <1.0        |          |          |
| WEAR METALS  | Water            |          | WC Method   | >0.2       | NEG         |          |          |
| Comparison   | Glycol           |          | WC Method   |            | NEG         |          |          |
| Chromium   | WEAR METAL       | S        | method      | limit/base | current     | history1 | history2 |
| Nickel   | ron              | ppm      | ASTM D5185m | >100       | 20          |          |          |
| Silver   | Chromium         | ppm      | ASTM D5185m | >20        | <1          |          |          |
| Silver   | Nickel           | ppm      | ASTM D5185m | >4         | <1          |          |          |
| Aluminum   | Titanium         | ppm      | ASTM D5185m |            | 3           |          |          |
| Lead   | Silver           | ppm      | ASTM D5185m | >3         | <1          |          |          |
| Copper   | Aluminum         | ppm      | ASTM D5185m | >20        | 2           |          |          |
| ASTM D5185m   STM D5185m   ST | Lead             | ppm      | ASTM D5185m | >40        | <1          |          |          |
| Vanadium         ppm         ASTM D5185m         <1             Cadmium         ppm         ASTM D5185m         <1             ADDITIVES         method         limit/base         current         history1         history           Boron         ppm         ASTM D5185m         7             Barium         ppm         ASTM D5185m         56             Molybdenum         ppm         ASTM D5185m         56             Manganese         ppm         ASTM D5185m         41             Magnesium         ppm         ASTM D5185m         1261             Phosphorus         ppm         ASTM D5185m         1261             Phosphorus         ppm         ASTM D5185m         1219             Zinc         ppm         ASTM D5185m         3196             CONTAMINANTS         method         limit/base         current         history1         history1           Solicon         ppm         ASTM D5185m         >20   | Copper           | ppm      | ASTM D5185m | >330       | 2           |          |          |
| ADDITIVES  | Tin              | ppm      | ASTM D5185m | >15        | 1           |          |          |
| ADDITIVES  | Vanadium         | ppm      | ASTM D5185m |            | <1          |          |          |
| Barium   | Cadmium          | ppm      | ASTM D5185m |            | <1          |          |          |
| Sarium   | ADDITIVES        |          | method      | limit/base | current     | history1 | history2 |
| Molybdenum         ppm         ASTM D5185m         56             Manganese         ppm         ASTM D5185m         <1   | Boron            | ppm      | ASTM D5185m |            | 7           |          |          |
| Manganese         ppm         ASTM D5185m         <1             Calcium         ppm         ASTM D5185m         1261             Phosphorus         ppm         ASTM D5185m         1135             Zinc         ppm         ASTM D5185m         1219             Sulfur         ppm         ASTM D5185m         3196             CONTAMINANTS         method         limit/base         current         history1         history           Silicon         ppm         ASTM D5185m         >25         10             Sodium         ppm         ASTM D5185m         17             Potassium         ppm         ASTM D5185m         >20         5             INFRA-RED         method         limit/base         current         history1         history           Soot %         %         *ASTM D7844         >3         0.5             Sulfation         Abs/.1mm         *ASTM D7415         >30         22.7             FLUID DEGRADA  | Barium           | ppm      | ASTM D5185m |            | <1          |          |          |
| Magnesium         ppm         ASTM D5185m         841             Calcium         ppm         ASTM D5185m         1261             Phosphorus         ppm         ASTM D5185m         1135             Zinc         ppm         ASTM D5185m         1219             Sulfur         ppm         ASTM D5185m         3196             CONTAMINANTS         method         limit/base         current         history1         history1           Silicon         ppm         ASTM D5185m         >25         10             Sodium         ppm         ASTM D5185m         >20         5             Potassium         ppm         ASTM D5185m         >20         5             INFRA-RED         method         limit/base         current         history1         history           Soot %         %         *ASTM D7844         >3         0.5             Sulfation         Abs/.1mm         *ASTM D7415         >30         22.7   | Molybdenum       | ppm      | ASTM D5185m |            | 56          |          |          |
| Calcium         ppm         ASTM D5185m         1261             Phosphorus         ppm         ASTM D5185m         1135             Zinc         ppm         ASTM D5185m         1219             Sulfur         ppm         ASTM D5185m         3196             CONTAMINANTS         method         limit/base         current         history1         history           Silicon         ppm         ASTM D5185m         >25         10             Sodium         ppm         ASTM D5185m         >20         5             Potassium         ppm         ASTM D5185m         >20         5             INFRA-RED         method         limit/base         current         history1         history           Soot %         %         *ASTM D7844         >3         0.5             Sulfation         Abs/.1mm         *ASTM D7415         >30         22.7             FLUID DEGRADATION         method         limit/base         current         history1         history1  | Manganese        | ppm      | ASTM D5185m |            | <1          |          |          |
| Phosphorus         ppm         ASTM D5185m         1135             Sulfur         ppm         ASTM D5185m         1219             Sulfur         ppm         ASTM D5185m         3196             CONTAMINANTS         method         limit/base         current         history1         history           Silicon         ppm         ASTM D5185m         >25         10             Sodium         ppm         ASTM D5185m         17             Potassium         ppm         ASTM D5185m         >20         5             INFRA-RED         method         limit/base         current         history1         history           Soot %         %         *ASTM D7844         >3         0.5             Sulfation         Abs/cm         *ASTM D7624         >20         9.9             FLUID DEGRADATION         method         limit/base         current         history1         history           Oxidation         Abs/.1mm         *ASTM D7414         >25         18.1  | Magnesium        | ppm      | ASTM D5185m |            | 841         |          |          |
| Table   Tabl | Calcium          | ppm      | ASTM D5185m |            | 1261        |          |          |
| Sulfur         ppm         ASTM D5185m         3196             CONTAMINANTS         method         limit/base         current         history1         history           Silicon         ppm         ASTM D5185m         >25         10             Sodium         ppm         ASTM D5185m         17             Potassium         ppm         ASTM D5185m         >20         5             INFRA-RED         method         limit/base         current         history1         history           Soot %         %         *ASTM D7844         >3         0.5             Nitration         Abs/cm         *ASTM D7624         >20         9.9             Sulfation         Abs/.1mm         *ASTM D7415         >30         22.7             FLUID DEGRADATION         method         limit/base         current         history1         history           Oxidation         Abs/.1mm         *ASTM D7414         >25         18.1  | Phosphorus       | ppm      | ASTM D5185m |            | 1135        |          |          |
| CONTAMINANTS         method         limit/base         current         history1         history           Silicon         ppm         ASTM D5185m         >25         10             Sodium         ppm         ASTM D5185m         17             Potassium         ppm         ASTM D5185m         >20         5             INFRA-RED         method         limit/base         current         history1         history           Soot %         %         *ASTM D7844         >3         0.5             Nitration         Abs/cm         *ASTM D7624         >20         9.9             Sulfation         Abs/.1mm         *ASTM D7415         >30         22.7             FLUID DEGRADATION         method         limit/base         current         history1         history           Oxidation         Abs/.1mm         *ASTM D7414         >25         18.1  | Zinc             | ppm      |             |            | 1219        |          |          |
| Silicon   ppm   ASTM D5185m   >25   10   | Sulfur           | ppm      | ASTM D5185m |            | 3196        |          |          |
| Sodium   | CONTAMINAN       | ITS      | method      | limit/base | current     | history1 | history2 |
| Potassium         ppm         ASTM D5185m         >20         5             INFRA-RED         method         limit/base         current         history1         history           Soot %         %         *ASTM D7844         >3         0.5             Nitration         Abs/cm         *ASTM D7624         >20         9.9             Sulfation         Abs/.1mm         *ASTM D7415         >30         22.7             FLUID DEGRADATION         method         limit/base         current         history1         history           Oxidation         Abs/.1mm         *ASTM D7414         >25         18.1   | Silicon          | ppm      | ASTM D5185m | >25        | 10          |          |          |
| INFRA-RED  | Sodium           | ppm      | ASTM D5185m |            | 17          |          |          |
| Soot %         %         *ASTM D7844         >3         0.5             Nitration         Abs/cm         *ASTM D7624         >20         9.9             Sulfation         Abs/.1mm         *ASTM D7415         >30         22.7             FLUID DEGRADATION         method         limit/base         current         history1         history           Oxidation         Abs/.1mm         *ASTM D7414         >25         18.1  | Potassium        | ppm      | ASTM D5185m | >20        | 5           |          |          |
| Nitration         Abs/cm         *ASTM D7624         >20         9.9             Sulfation         Abs/.1mm         *ASTM D7415         >30         22.7             FLUID DEGRADATION         method         limit/base         current         history1         history           Oxidation         Abs/.1mm         *ASTM D7414         >25         18.1  | INFRA-RED        |          | method      | limit/base | current     | history1 | history2 |
| Sulfation         Abs/.1mm         *ASTM D7415         >30         22.7             FLUID DEGRADATION         method         limit/base         current         history1         history           Oxidation         Abs/.1mm         *ASTM D7414         >25         18.1   | Soot %           | %        | *ASTM D7844 | >3         | 0.5         |          |          |
| FLUID DEGRADATION method limit/base current history1 history  Oxidation Abs/.1mm *ASTM D7414 >25 18.1  | Nitration        | Abs/cm   | *ASTM D7624 | >20        | 9.9         |          |          |
| Oxidation  | Sulfation        | Abs/.1mm | *ASTM D7415 | >30        | 22.7        |          |          |
|  | FLUID DEGRA      | DATION   | method      | limit/base | current     | history1 | history2 |
| Base Number (BN) mg KOH/g ASTM D2896 9.8 5.4   | Oxidation        | Abs/.1mm | *ASTM D7414 | >25        | 18.1        |          |          |
|  | Base Number (BN) | mg KOH/g | ASTM D2896  | 9.8        | 5.4         |          |          |



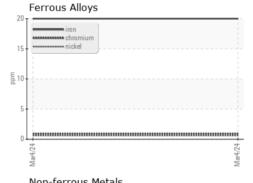
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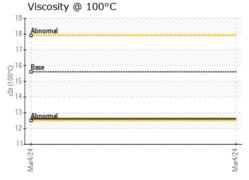
| VISUAL                  |        | method  | limit/base | current | history1 | history2 |
|-------------------------|--------|---------|------------|---------|----------|----------|
| White Metal             | scalar | *Visual | NONE       | NONE    |          |          |
| Yellow Metal            | 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   |          |          |
| <b>Emulsified Water</b> | scalar | *Visual | >0.2       | NEG     |          |          |
| Free Water              | scalar | *Visual |            | NEG     |          |          |
|                         |        |         |            |         |          |          |

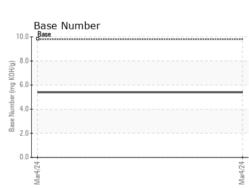
| FLUID PROP   | ERITES | method    | ilmit/base |      | nistory i | nistory2 |
|--------------|--------|-----------|------------|------|-----------|----------|
| Visc @ 100°C | cSt    | ASTM D445 | 15.6       | 12.6 |           |          |

### **GRAPHS**



|     | copper         |  |
|-----|----------------|--|
| 8-  | secondana lead |  |
|     |                |  |
| 6-  |                |  |
| 4 - |                |  |
| 2   |                |  |
|     |                |  |
|     |                |  |









Certificate L2367

Laboratory Sample No.

Test Package : FLEET

: PCA0112122 Lab Number : 06130407 Unique Number : 10949872

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

Received **Tested** Diagnosed

: 27 Mar 2024 : 28 Mar 2024 : 28 Mar 2024 - Wes Davis

**VOYAGER TRUCKING CORP** 451 FRELINGHUYSEN AVENUE

NEWARK, NJ US 07114

Contact: TYLER SEVERINO tyler@newarktruckcenter.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)

T:

F: