

## **OIL ANALYSIS REPORT**



Machine Id

#### 211 Component Diesel Engine Fluid PETRO CANADA DURON SHP 10W30 (--- QTS)

### DIAGNOSIS

#### Recommendation

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

#### Wear

All component wear rates are normal.

#### Contamination

There is no indication of any contamination in the oil.

#### Fluid Condition

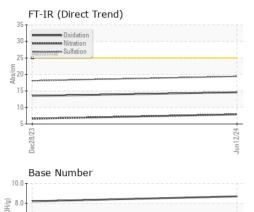
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

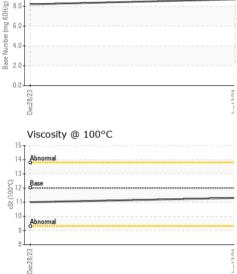
| SAMPLE INFORI  | MATION  | method   | limit/base   | current   | history1   | history2  |
|--|---|--|--|---|--|---|
| Sample Number  |   | Client Info  |  | PCA0124635  | PCA0114442   |   |
| Sample Date  |   | Client Info  |  | 12 Jun 2024   | 28 Dec 2023  |   |
| Machine Age  | mls   | Client Info  |  | 78450   | 41413  |   |
| Oil Age  | mls   | Client Info  |  | 12000   | 10350  |   |
| Oil Changed  |   | Client Info  |  | Changed   | Changed  |   |
| Sample Status  |   |  |  | NORMAL  | NORMAL   |   |
| CONTAMINAT   | ION   | method   | limit/base   | current   | history1   | history2  |
| Fuel   |   | WC Method  | >5   | <1.0  | <1.0   |   |
| Water  |   | WC Method  | >0.2   | NEG   | NEG  |   |
| Glycol   |   | WC Method  |  | NEG   | NEG  |   |
| WEAR METAL   | S   | method   | limit/base   | current   | history1   | history2  |
| Iron   | ppm   | ASTM D5185m  | >100   | 18  | 20   |   |
| Chromium   | ppm   | ASTM D5185m  | >20  | <1  | 2  |   |
| Nickel   | ppm   | ASTM D5185m  | >4   | 0   | <1   |   |
| Titanium   | ppm   | ASTM D5185m  |  | 0   | <1   |   |
| Silver   | ppm   | ASTM D5185m  | >3   | <1  | 0  |   |
| Aluminum   | ppm   | ASTM D5185m  | >20  | 8   | 14   |   |
| Lead   | ppm   | ASTM D5185m  | >40  | 1   | 1  |   |
| Copper   | ppm   | ASTM D5185m  | >330   | 2   | 2  |   |
| Tin  | ppm   | ASTM D5185m  | >15  | <1  | 1  |   |
| Vanadium   | ppm   | ASTM D5185m  |  | 0   | 0  |   |
| Cadmium  | ppm   | ASTM D5185m  |  | ^   | -  |   |
| oddinidini   | ррпі  | ASTIVI DOTODITI  |  | 0   | <1   |   |
| ADDITIVES  | ppm   | method   | limit/base   | current   | <1<br>history1   | history2  |
|  | ppm   |  | limit/base   | -   |  |   |
| ADDITIVES  |   | method   |  | current   | history1   | history2  |
| ADDITIVES<br>Boron   | ppm   | method<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m  | 2<br>0<br>50   | current<br>2  | history1<br>4<br>0<br>63   | history2  |
| ADDITIVES<br>Boron<br>Barium<br>Molybdenum<br>Manganese  | ppm<br>ppm  | method<br>ASTM D5185m<br>ASTM D5185m   | 2<br>0<br>50<br>0  | current<br>2<br>0   | history1<br>4<br>0   | history2<br>  |
| ADDITIVES<br>Boron<br>Barium<br>Molybdenum   | ppm<br>ppm<br>ppm   | method<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m  | 2<br>0<br>50   | current<br>2<br>0<br>60<br><1<br>940  | history1<br>4<br>0<br>63   | history2<br><br>                                      |
| ADDITIVES<br>Boron<br>Barium<br>Molybdenum<br>Manganese<br>Magnesium<br>Calcium  | ppm<br>ppm<br>ppm<br>ppm  | method<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m   | 2<br>0<br>50<br>0  | current           2           0           60           <1           940           1065  | history1<br>4<br>0<br>63<br><1   | history2<br><br><br>                                  |
| ADDITIVES<br>Boron<br>Barium<br>Molybdenum<br>Manganese<br>Magnesium<br>Calcium<br>Phosphorus  | ppm<br>ppm<br>ppm<br>ppm<br>ppm   | method<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m   | 2<br>0<br>50<br>9<br>950<br>1050<br>995  | Current<br>2<br>0<br>60<br><1<br>940<br>1065<br>1065  | history1           4           0           63           <1           1005           1063           973   | history2<br><br><br>                                  |
| ADDITIVES<br>Boron<br>Barium<br>Molybdenum<br>Manganese<br>Magnesium<br>Calcium<br>Phosphorus<br>Zinc  | ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm  | method<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m  | 2<br>0<br>50<br>0<br>950<br>1050<br>995<br>1180  | current           2           0           60           <1           940           1065           1065           1243  | history1           4           0           63           <1           1005           1063           973           1283  | history2<br><br><br><br>                              |
| ADDITIVES<br>Boron<br>Barium<br>Molybdenum<br>Manganese<br>Magnesium<br>Calcium<br>Phosphorus<br>Zinc<br>Sulfur  | ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm                                   | method<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m   | 2<br>0<br>50<br>9<br>950<br>1050<br>995  | Current<br>2<br>0<br>60<br><1<br>940<br>1065<br>1065  | history1           4           0           63           <1           1005           1063           973   | history2  |
| ADDITIVES<br>Boron<br>Barium<br>Molybdenum<br>Manganese<br>Magnesium<br>Calcium<br>Phosphorus<br>Zinc<br>Sulfur<br>CONTAMINAN  | ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm                                   | method<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m  | 2<br>0<br>50<br>0<br>950<br>1050<br>995<br>1180  | current           2           0           60           <1           940           1065           1065           1243  | history1           4           0           63           <1           1005           1063           973           1283  | history2  |
| ADDITIVES<br>Boron<br>Barium<br>Molybdenum<br>Manganese<br>Magnesium<br>Calcium<br>Phosphorus<br>Zinc<br>Sulfur<br>CONTAMINAN<br>Silicon   | ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm                                   | method<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m  | 2<br>0<br>50<br>950<br>1050<br>995<br>1180<br>2600   | current           2           0           60           <1           940           1065           1065           1243           3541           current           7   | history1<br>4<br>0<br>63<br><1<br>1005<br>1063<br>973<br>1283<br>2992  | history2  |
| ADDITIVES<br>Boron<br>Barium<br>Molybdenum<br>Manganese<br>Magnesium<br>Calcium<br>Phosphorus<br>Zinc<br>Sulfur<br>CONTAMINAN<br>Silicon<br>Sodium   | ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm                                   | method<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m  | 2<br>0<br>50<br>950<br>1050<br>995<br>1180<br>2600   | current           2           0           60           <1           940           1065           1065           1243           3541           current           7           4   | history1         4         0         63         <1         1005         1063         973         1283         2992         history1         6         0  | history2  |
| ADDITIVES<br>Boron<br>Barium<br>Molybdenum<br>Manganese<br>Magnesium<br>Calcium<br>Phosphorus<br>Zinc<br>Sulfur<br>CONTAMINAN<br>Silicon   | ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm                            | method<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m  | 2<br>0<br>50<br>950<br>1050<br>995<br>1180<br>2600<br><b>limit/base</b><br>>25   | current           2           0           60           <1           940           1065           1065           1243           3541           current           7   | history1         4         0         63         <1         1005         1063         973         1283         2992         history1         6  | history2  |
| ADDITIVES<br>Boron<br>Barium<br>Molybdenum<br>Manganese<br>Magnesium<br>Calcium<br>Phosphorus<br>Zinc<br>Sulfur<br>CONTAMINAN<br>Silicon<br>Sodium   | ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm                            | method           ASTM D5185m   | 2<br>0<br>50<br>950<br>1050<br>995<br>1180<br>2600<br><b>limit/base</b><br>>25   | current           2           0           60           <1           940           1065           1065           1243           3541           current           7           4           19           current  | history1         4         0         63         <1         1005         1063         973         1283         2992         history1         6         0  | history2  |
| ADDITIVES<br>Boron<br>Barium<br>Molybdenum<br>Manganese<br>Magnesium<br>Calcium<br>Phosphorus<br>Zinc<br>Sulfur<br>CONTAMINAN<br>Silicon<br>Sodium<br>Potassium<br>INFRA-RED<br>Soot %                           | ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm                            | method           ASTM D5185m   | 2<br>0<br>50<br>0<br>950<br>1050<br>995<br>1180<br>2600<br><b>Imit/base</b><br>>25<br>>20<br><b>Imit/base</b><br>>3        | current           2           0           60           <1           940           1065           1065           1243           3541           current           7           4           19           current           0.7                              | history1         4         0         63         <1         1005         1063         973         1283         2992         history1         6         0         30         history1         0.4                          | history2 history2 history2                            |
| ADDITIVES<br>Boron<br>Barium<br>Molybdenum<br>Manganese<br>Magnesium<br>Calcium<br>Phosphorus<br>Zinc<br>Sulfur<br>CONTAMINAN<br>Silicon<br>Sodium<br>Potassium<br>INFRA-RED<br>Soot %<br>Nitration              | ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm                            | method           ASTM D5185m   | 2<br>0<br>50<br>0<br>950<br>1050<br>995<br>1180<br>2600<br><i>imit/base</i><br>>25<br>>20<br><i>imit/base</i><br>>3<br>>20 | current           2           0           60           <1           940           1065           1065           1243           3541           current           7           4           19           current           0.7           7.9                | history1         4         0         63         <1         1005         1063         973         1283         2992         history1         6         0         30         history1         0.4         6.6              | history2 history2 history2 history2                   |
| ADDITIVES<br>Boron<br>Barium<br>Molybdenum<br>Manganese<br>Magnesium<br>Calcium<br>Phosphorus<br>Zinc<br>Sulfur<br>CONTAMINAN<br>Silicon<br>Sodium<br>Potassium<br>INFRA-RED<br>Soot %                           | ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm                            | method           ASTM D5185m   | 2<br>0<br>50<br>0<br>950<br>1050<br>995<br>1180<br>2600<br><b>Imit/base</b><br>>25<br>>20<br><b>Imit/base</b><br>>3        | current           2           0           60           <1           940           1065           1065           1243           3541           current           7           4           19           current           0.7                              | history1         4         0         63         <1         1005         1063         973         1283         2992         history1         6         0         30         history1         0.4                          | history2 history2 history2 history2                   |
| ADDITIVES<br>Boron<br>Barium<br>Molybdenum<br>Manganese<br>Magnesium<br>Calcium<br>Phosphorus<br>Zinc<br>Sulfur<br>CONTAMINAN<br>Silicon<br>Sodium<br>Potassium<br>INFRA-RED<br>Soot %<br>Nitration              | ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>t<br>t<br>t<br>t               | method           ASTM D5185m           ASTM D5185m | 2<br>0<br>50<br>0<br>950<br>1050<br>995<br>1180<br>2600<br><i>imit/base</i><br>>25<br>>20<br><i>imit/base</i><br>>3<br>>20 | current           2           0           60           <1           940           1065           1065           1243           3541           current           7           4           19           current           0.7           7.9                | history1         4         0         63         <1         1005         1063         973         1283         2992         history1         6         0         30         history1         0.4         6.6              | history2 history2 history2 history2 history2 history2 |
| ADDITIVES<br>Boron<br>Barium<br>Molybdenum<br>Manganese<br>Magnesium<br>Calcium<br>Phosphorus<br>Zinc<br>Sulfur<br>CONTAMINAN<br>Silicon<br>Sodium<br>Potassium<br>INFRA-RED<br>Soot %<br>Nitration<br>Sulfation | ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br><b>TS</b><br>ppm<br>ppm<br>ppm | method           ASTM D5185m           ASTM D5185m | 2<br>0<br>50<br>0<br>950<br>1050<br>995<br>1180<br>2600<br><b>imit/base</b><br>>25<br><b>imit/base</b><br>>3<br>>20        | current           2           0           60           <1           940           1065           1065           1243           3541           current           7           4           19           current           0.7           7.9           19.4 | history1         4         0         63         <1         1005         1063         973         1283         2992         history1         6         0         30         history1         0.4         6.6         18.1 | history2  |



# **OIL ANALYSIS REPORT**

VISUAL





| VISUAL              |               | method      | limit/base  | current   | history1    | history2    |
|---------------------|---------------|-------------|---|-----------|-------------|-------------|
| White Metal         | scalar        | *Visual     | NONE  | NONE      | NONE        |             |
| Yellow Metal        | scalar        | *Visual     | NONE  | NONE      | NONE        |             |
| Precipitate         | scalar        | *Visual     | NONE  | NONE      | NONE        |             |
| Silt                | scalar        | *Visual     | NONE  | NONE      | NONE        |             |
| Debris              | scalar        | *Visual     | NONE  | NONE      | NONE        |             |
| Sand/Dirt           | scalar        | *Visual     | NONE  | NONE      | NONE        |             |
| Appearance          | scalar        | *Visual     | NORML   | NORML     | NORML       |             |
| Odor                | scalar        | *Visual     | NORML   | NORML     | NORML       |             |
| Emulsified Wate     |               | *Visual     | >0.2  | NEG       | NEG         |             |
| Free Water          |               | *Visual     |   | NEG       | NEG         |             |
| FLUID PRO           |               | method      | limit/base  | current   | history1    | history2    |
| Visc @ 100°C        | cSt           | ASTM D445   | 12.00   | 11.3      | 11.0        |             |
| GRAPHS              |               |             |   |           |             |             |
| Ferrous Alloys      |               |             |   |           |             |             |
| iron                |               |             |   |           |             |             |
| 15 - nickel         |               |             |   |           |             |             |
|                     |               |             |   |           |             |             |
| <u>톱</u> 10 -       |               |             |   |           |             |             |
|                     |               |             |   |           |             |             |
| 5-                  |               |             |   |           |             |             |
|                     |               |             |   |           |             |             |
| 2/53                |               |             | 2/24  |           |             |             |
| Dec28/23            |               |             | Jun12/24  |           |             |             |
| Non-ferrous M       | letals        |             |   |           |             |             |
| 10 copper ]         |               |             |   |           |             |             |
| 8 -                 |               |             |   |           |             |             |
|                     |               |             |   |           |             |             |
| 6                   |               |             |   |           |             |             |
| 4-                  |               |             |   |           |             |             |
| 2                   |               |             |   |           |             |             |
|                     |               |             |   |           |             |             |
| 0                   |               |             |   |           |             |             |
| Dec28/23            |               |             | Jun 12/24   |           |             |             |
| ă<br>Viscosity @ 10 | 00°C          |             | ٦٢  |           |             |             |
| <sup>15</sup> T     |               | Base Number |   |           |             |             |
| 14 - Abnormal       |               |             |   |           |             |             |
| 13-                 |               |             |   |           |             |             |
|                     |               |             | (6,74<br>888 Number<br>888 States<br>888 States<br>84<br>85<br>84<br>85<br>84<br>85<br>85<br>84<br>85<br>85<br>85<br>85<br>85<br>85<br>85<br>85<br>85<br>85<br>85<br>85<br>85 | .0-       |             |             |
| (100                |               |             | 5<br>ja   | .0        |             |             |
|                     |               |             | 44<br>N   |           |             |             |
| Abnormal            |               |             | ase<br>B 2  |           |             |             |
| 9-                  |               |             |   | .0-       |             |             |
| 84                  |               |             |   |           |             |             |
| Dec28/23            |               |             | Jun12/24  | Dec28/23  |             |             |
| e<br>D              |               |             | μĻ  | De        |             |             |
| : WearCheck USA     | - 501 Madisor | Ave Car     | / NC 27513  |           | GAS FIFL    | ) SPECIALIS |
| : PCA0124635        | Receiv        |             | 5 Jul 2024  |           |             | 114 PA-6    |
| r : 06235353        | Tested        |             | 5 Jul 2024  |           | Ν           | ANSFIELD,   |
| er : 11124187       | Diagn         | osed : 1    | 5 Jul 2024 - V  | Ves Davis |             | US 169      |
| : FLEET             |               |             |   |           | Contact: TA | RA MUIRHEA  |



\* - 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) Report Id: GASMAN [WUSCAR] 06235353 (Generated: 07/15/2024 14:47:05) Rev: 1

To discuss this sample report, contact Customer Service at 1-800-237-1369.

Test Package : FLEET

Certificate 12367

Contact/Location: TARA MUIRHEAD - GASMAN

T:

F:

tara.muirhead@gfsinc.net