

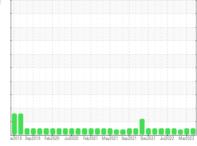
PETRO CANADA DURON SHP 15W40 (11 GAL)

Machine Id Component Diesel Engine

OIL ANALYSIS REPORT

Sample Rating Trend



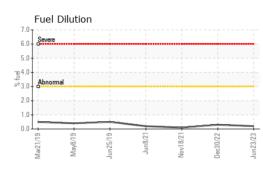


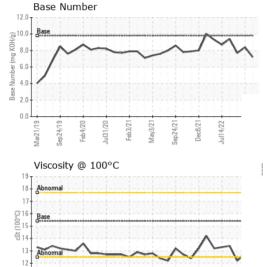


| No. corrective action is recommended at this inter- Resample at the next service interval to monitor. Sample Data Cleant Info 123 un 2023 29 Mar 2023 30 Daec 2022 Machine Age fras Client Info 14321 13883 13025 All component wear rates are normal. Contamination NorMAL NorMAL <t< th=""><th>DIAGNOSIS</th><th>SAMPLE INFOR</th><th>MATION</th><th>method</th><th>limit/base</th><th>current</th><th>history 1</th><th>history 2</th></t<> | DIAGNOSIS | SAMPLE INFOR | MATION | method | limit/base | current | history 1 | history 2 |
|--|--|---------------|----------|-------------|------------|-------------|-------------|-------------|
| No corrective action is recommended at this inter- Resample at the next service interval to monitor. Simple Date Citent Info 13.021 13.883 13.025 Machine Age hrs Citent Info 13.021 13.883 13.025 Contamination Free is no indicator of sanithy remaining in the oil. NoRMAL </th <th>Recommendation</th> <th>Sample Number</th> <th></th> <th>Client Info</th> <th></th> <th>GFL0083632</th> <th>GFL0074567</th> <th>GFL0066909</th> | Recommendation | Sample Number | | Client Info | | GFL0083632 | GFL0074567 | GFL0066909 |
| Resample at the next service interval to monitor. Year All component wear rates are normal. Cilent Info 13983 13025 Contamination Cinent info S99 9169 9189 010 Peril content negligible. There is no indicator of any contamination in the oil. Cinent info NORMAL ATTENTION Full Condition The ordination of the oil. Cinent info Indivase Current Natory All Component wear rates are normal. CONTAMINATION method Indivase Current Natory Natory Full Condition Contractine opp ASTM 05186 > 6 7 7 Chromium ppm ASTM 05186 > 6 7 7 Chromium ppm ASTM 05186 > 6 1 1 1 Interval to invitor ppm ASTM 05186 > 1 1 1 Corpore ppm ASTM 05186 > 1 1 1 1 Corpore ppm ASTM 05186 0 | No corrective action is recommended at this time. | Sample Date | | Client Info | | 23 Jun 2023 | 23 Mar 2023 | 30 Dec 2022 |
| All component wear rates are normal. Coli Changed Client Info Changed Changed NA Contamination Sample Status Imstass NORMAL ATTENTION Evel content negligible. There is no indication of any contamination in the oil. CONTAMINATION Imstass Current History 1 Nistory 2 Fuel Condition The Bh result indicates that there is suitable for further service. NC Method Imstass current History 1 Inistory 2 For prom ppm ASIM DSISSin >4 <1 | Resample at the next service interval to monitor. | Machine Age | hrs | Client Info | | 14321 | 13583 | 13025 |
| Contamination Fuel continition in the oil. Sample Status NORMAL NORMAL ATTENTION Fuel condition in the oil. Contraction in the oil. Contraction Need NEG NEG Fuel condition in the oil. The or souldable alkalinity remaining in the oil. The condition of the oil is suitable for further service. NEG NEG NEG NEG Find Contraction of the oil. The or motion of the oil is suitable for further service. NER NEG NEG NEG NEG NEG Find Sitts Sample Status method finitions Current history 1 history 2 In on ppm ASTM 05158m >1 <1 | Wear | Oil Age | hrs | Client Info | | 599 | 9189 | 9189 |
| Contamization Sample Status NORMAL NORMAL ATTENTION Fuel content negligible. There is no indication at yoontamination in the oil. CONTAMINATION method imm(base current history 1 history 2 Fuel Containion The Dr sculi indicates that there is suitable alkalinity remaining in the oil. The condition of the alkalinity remaining in the oil. The condition of the alkalinity remaining in the oil. The condition of the alkalinity remaining in the oil. The condition of the alkalinity remaining in the oil. The condition of the condition of the alkalinity remaining in the oil. The condition of the conditin of the condition of the condition of the co | All component wear rates are normal. | Oil Changed | | Client Info | | Changed | Changed | N/A |
| any contraination in the oil. CONTRAMINATION Instruct of indicases Current Instruct of indicases Fluid Condition Fluid Condition of the oil insuitable for further service. WEAR METALS NEG NEG Iron ppm ASTM D5186n >165 6 7 7 Chromium ppm ASTM D5186n >165 6 7 7 Chromium ppm ASTM D5186n >2 1 0 0 Nickel ppm ASTM D5186n >2 1 0 0 1 Nickel ppm ASTM D5186n >2 0 1 1 1 Lead ppm ASTM D5186n >20 0 1 -1 1 Copper ppm ASTM D5186n >50 1 -1 -1 -1 Vanadium ppm ASTM D5186n 5 1 0 0 0 0 0 0 0 0 0 0 0 0 0 <th>Contamination</th> <td>Sample Status</td> <td></td> <td></td> <td></td> <td>-</td> <td>NORMAL</td> <td>ATTENTION</td> | Contamination | Sample Status | | | | - | NORMAL | ATTENTION |
| Fund Condition Gigcol WC Method NEG NEG NEG The BN result indicates that there is suitable dialinity remaining in the oil. The condition of the adialinity remaining in the oil. The condition of the conditis of the condition of the condition of the condition of the condi | Fuel content negligible. There is no indication of any contamination in the oil. | CONTAMINAT | ION | method | limit/base | current | history 1 | history 2 |
| UNEAR METALS method initiabase current History 1 History 2 from ppm ASTM 25185m >16.5 6 7 7 Chromium ppm ASTM 25185m >16.5 6 7 7 Chromium ppm ASTM 25185m >4.1 <1 | • | Glycol | | WC Method | | NEG | NEG | NEG |
| iron ppm ASTN 05186m >6 7 7 Chrominum ppm ASTN 05186m >5 <1 | The BN result indicates that there is suitable | WEAR METAL | S | method | limit/base | current | history 1 | history 2 |
| Nickel ppm ASTM D5185m >4 <1 0 0 Tittanium ppm ASTM D5185m >2 <1 | oil is suitable for further service. | Iron | ppm | ASTM D5185m | >165 | 6 | 7 | 7 |
| Titanium ppm ASTM D518m >2 <1 0 0 Silver ppm ASTM D518m >20 0 1 1 Aluminum ppm ASTM D518m >20 0 1 1 Lead ppm ASTM D518m >10 <1 | | Chromium | ppm | ASTM D5185m | >5 | <1 | <1 | <1 |
| Silver ppm ASTM D5185m >2 0 0 1 Aluminum ppm ASTM D5185m >20 0 1 1 Lead ppm ASTM D5185m >20 1 <1 1 Copper ppm ASTM D5185m >20 1 <1 <1 1 Tin ppm ASTM D5185m >5 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 | | Nickel | ppm | ASTM D5185m | >4 | <1 | 0 | 0 |
| Aluminum ppm ASTM D5185m >20 0 1 1 Lead ppm ASTM D5185m >150 1 <1 | | Titanium | ppm | ASTM D5185m | >2 | <1 | 0 | 0 |
| Lead ppm ASTM D5185m >10 <1 | | Silver | ppm | ASTM D5185m | >2 | 0 | 0 | 1 |
| Copper ppm ASTM D5185m >90 1 <1 <1 Tin ppm ASTM D5185m >5 <1 | | Aluminum | ppm | ASTM D5185m | >20 | 0 | 1 | 1 |
| Tin ppm ASTM D5185m >5 <1 | | Lead | ppm | ASTM D5185m | >150 | 1 | <1 | 1 |
| Vanadium ppm ASTM D5185m 0 0 0 Cadmium ppm ASTM D5185m <1 | | Copper | ppm | ASTM D5185m | >90 | 1 | <1 | <1 |
| Cadmium ppm ASTM D5185m <1 0 0 ADDITIVES method limit/base current history 1 history 2 Boron ppm ASTM D5185m 0 11 3 7 Barium ppm ASTM D5185m 0 <1 0 0 Molybdenum ppm ASTM D5185m 0 <1 1 3 7 Manganese ppm ASTM D5185m 0 <1 1 0 0 Calcium ppm ASTM D5185m 1010 733 868 820 Calcium ppm ASTM D5185m 1070 1091 1101 1137 Phosphorus ppm ASTM D5185m 1150 911 984 906 Zinc ppm ASTM D5185m 1270 1140 1189 1136 Sulfur ppm ASTM D5185m 120 21 21 4 Potassium ppm ASTM D5185m 55 5 4 5 Sodium ppm ASTM D5185m | | Tin | ppm | ASTM D5185m | >5 | <1 | <1 | <1 |
| ADDITIVES method limit/base current history 1 history 2 Boron ppm ASTM D5185m 0 11 3 7 Barium ppm ASTM D5185m 0 <1 | | Vanadium | ppm | ASTM D5185m | | 0 | 0 | 0 |
| Boron ppm ASTM D5185m 0 11 3 7 Barium ppm ASTM D5185m 0 -1 0 0 Molybdenum ppm ASTM D5185m 60 60 60 57 Manganese ppm ASTM D5185m 0 -1 -1 -1 Magnesium ppm ASTM D5185m 1010 793 868 820 Calcium ppm ASTM D5185m 1010 793 868 820 Calcium ppm ASTM D5185m 1070 1091 1101 1137 Phosphorus ppm ASTM D5185m 1270 1140 1189 1136 Sulfur ppm ASTM D5185m 122 114 4 Potassium ppm ASTM D5185m 2060 3207 3135 3108 INFRA-RED method limit/base current History 1 History 2 Sodium ppm ASTM D5185m 20 2 2 -1 Fuel % ASTM D5185m 2.0 | | Cadmium | ppm | ASTM D5185m | | <1 | 0 | 0 |
| Barium ppm ASTM D5185m 0 <1 | | ADDITIVES | | method | limit/base | current | history 1 | history 2 |
| Molybdenum ppm ASTM D5185m 60 60 57 Manganese ppm ASTM D5185m 0 <1 <1 <1 Magnesium ppm ASTM D5185m 1010 793 868 820 Calcium ppm ASTM D5185m 1010 793 8668 820 Calcium ppm ASTM D5185m 1070 1091 1101 1137 Phosphorus ppm ASTM D5185m 1070 1091 1104 1189 Zinc ppm ASTM D5185m 1270 1140 1189 1136 Sulfur ppm ASTM D5185m 2060 3207 3135 3108 CONTAMINANTS method imit/base current history 1 history 2 Silicon ppm ASTM D5185m >35 5 4 5 Sodium ppm ASTM D5185m >20 2 2 <1 Potassium ppm ASTM D5185m >20 2 <10 0.3 Inrel % ASTM D5185m | | Boron | ppm | ASTM D5185m | 0 | 11 | 3 | 7 |
| Marganesse ppm ASTM D5185m 0 <1 <1 <1 Magnesium ppm ASTM D5185m 1010 793 868 820 Calcium ppm ASTM D5185m 1070 1091 1101 1137 Phosphorus ppm ASTM D5185m 1150 911 984 906 Zinc ppm ASTM D5185m 1270 1140 1189 1136 Sulfur ppm ASTM D5185m 2060 3207 3135 3108 CONTAMINANTS method limit/base current history 1 history 2 Silicon ppm ASTM D5185m >35 5 4 5 Sodium ppm ASTM D5185m >20 2 2 <1 | | Barium | ppm | ASTM D5185m | 0 | <1 | 0 | 0 |
| Magnesium ppm ASTM D5185m 1010 793 868 820 Calcium ppm ASTM D5185m 1070 1091 1101 1137 Phosphorus ppm ASTM D5185m 1150 911 984 906 Zinc ppm ASTM D5185m 1270 1140 1189 1136 Sulfur ppm ASTM D5185m 2060 3207 3135 3108 CONTAMINANTS method limit/base current history 1 history 2 Silicon ppm ASTM D5185m >35 5 4 5 Sodium ppm ASTM D5185m >20 2 2 <1 | | Molybdenum | ppm | ASTM D5185m | 60 | 60 | 60 | 57 |
| Calcium ppm ASTM D5185m 1070 1091 1101 1137 Phosphorus ppm ASTM D5185m 1150 911 984 906 Zinc ppm ASTM D5185m 1270 1140 1189 1136 Sulfur ppm ASTM D5185m 2060 3207 3135 3108 CONTAMINANTS method limit/base current history 1 history 2 Silicon ppm ASTM D5185m >35 5 4 5 Sodium ppm ASTM D5185m >20 2 2 <1 | | Manganese | ppm | ASTM D5185m | 0 | <1 | <1 | <1 |
| Phosphorus ppm ASTM D5185m 1150 911 984 906 Zinc ppm ASTM D5185m 1270 1140 1189 1136 Sulfur ppm ASTM D5185m 2060 3207 3135 3108 CONTAMINANTS method limit/base current history 1 history 2 Silicon ppm ASTM D5185m >35 5 4 5 Sodium ppm ASTM D5185m >35 5 4 5 Sodium ppm ASTM D5185m >20 2 2 <1 Potassium ppm ASTM D5185m >20 2 2 <1 Fuel % ASTM D5185m >20 2 2 <1 Fuel % ASTM D324 >3.0 0.2 <1.0 0.3 INFRA-RED method limit/base current history 1 history 2 Soot % % 'ASTM D7844 >7.5 0.3 0.3 0.3 INFRA-RED Abs/cm 'ASTM D7624 <th< td=""><th></th><td>Magnesium</td><td>ppm</td><td>ASTM D5185m</td><td>1010</td><td>793</td><td>868</td><td>820</td></th<> | | Magnesium | ppm | ASTM D5185m | 1010 | 793 | 868 | 820 |
| Zinc ppm ASTM D5185m 1270 1140 1189 1136 Sulfur ppm ASTM D5185m 2060 3207 3135 3108 CONTAMINANTS method limit/base current history 1 history 2 Silicon ppm ASTM D5185m >35 5 4 5 Sodium ppm ASTM D5185m >35 5 4 5 Sodium ppm ASTM D5185m >30 12 <11 4 Potassium ppm ASTM D5185m >20 2 <1 4 Potassium ppm ASTM D5185m >20 2 <1 4 Potassium ppm ASTM D5185m >20 2 <1.0 0.3 INFRA-RED method limit/base current history 1 history 2 Soot % % 'ASTM D7844 >7.5 0.3 0.3 0.3 Nitration Abs/tmm< "ASTM D7624 >20 7.5 7.1 6.9 Sulfation Abs/tmm< "ASTM D7415 >30 | | Calcium | ppm | ASTM D5185m | 1070 | 1091 | 1101 | 1137 |
| Sulfur ppm ASTM D5185m 2060 3207 3135 3108 CONTAMINANTS method limit/base current history 1 history 2 Silicon ppm ASTM D5185m >35 5 4 5 Sodium ppm ASTM D5185m >30 12 <1 4 Potassium ppm ASTM D5185m >20 2 2 <1 Fuel % ASTM D5185m >20 2 2 <1 Fuel % ASTM D5185m >20 2 2 <1 Fuel % ASTM D3524 >3.0 0.2 <1.0 0.3 INFRA-RED method limit/base current history 1 history 2 Soot % % *ASTM D7844 >7.5 0.3 0.3 0.3 Nitration Abs/.tmm *ASTM D7644 >20 7.5 7.1 6.9 Sulfation Abs/.tmm *ASTM D7645 >30 18.6 18.6 17.9 FLUID DEGRADATION method limit/b | | Phosphorus | ppm | ASTM D5185m | 1150 | 911 | 984 | 906 |
| CONTAMINANTSmethodlimit/basecurrenthistory 1history 2SiliconppmASTM D5185m>35545SodiumppmASTM D5185m>35545PotassiumppmASTM D5185m>2022<1 | | Zinc | ppm | ASTM D5185m | 1270 | 1140 | 1189 | 1136 |
| Silicon ppm ASTM D5185m >35 5 4 5 Sodium ppm ASTM D5185m >35 12 <1 4 Potassium ppm ASTM D5185m >20 2 2 <1 Fuel % ASTM D3524 >3.0 0.2 <1.0 0.3 INFRA-RED method limit/base current history 1 history 2 Soot % % *ASTM D7844 >7.5 0.3 0.3 0.3 Nitration Abs/m *ASTM D7844 >2.0 7.5 7.1 6.9 Sulfation Abs/1mm *ASTM D7415 >30 18.6 18.6 17.9 FLUID DEGRADATION method limit/base current history 1 history 2 Oxidation Abs/.1mm *ASTM D7414 >25 13.7 14.0 12.9 | | Sulfur | ppm | ASTM D5185m | 2060 | 3207 | 3135 | 3108 |
| Sodium ppm ASTM D5185m 12 <1 | | CONTAMINAN | ITS | method | limit/base | current | history 1 | history 2 |
| Potassium ppm ASTM D5185m >20 2 2 <1 | | | ppm | | >35 | | 4 | 5 |
| Fuel % ASTM D3524 >3.0 0.2 <1.0 | | Sodium | ppm | ASTM D5185m | | 12 | <1 | 4 |
| INFRA-RED method limit/base current history 1 history 2 Soot % % *ASTM D7844 >7.5 0.3 0.3 0.3 Nitration Abs/cm *ASTM D7624 >20 7.5 7.1 6.9 Sulfation Abs/lm *ASTM D7415 >30 18.6 18.6 17.9 FLUID DEGRADATION method limit/base current history 1 history 2 Oxidation Abs/Imm *ASTM D7414 >25 13.7 14.0 12.9 | | Potassium | | | | | | |
| Soot % % *ASTM D7844 >7.5 0.3 0.3 0.3 Nitration Abs/cm *ASTM D7624 >20 7.5 7.1 6.9 Sulfation Abs/.1mm *ASTM D7415 >30 18.6 18.6 17.9 FLUID DEGRADATION method limit/base current history 1 history 2 Oxidation Abs/.1mm *ASTM D7414 >25 13.7 14.0 12.9 | | Fuel | % | ASTM D3524 | >3.0 | 0.2 | <1.0 | 0.3 |
| Nitration Abs/cm *ASTM D7624 >20 7.5 7.1 6.9 Sulfation Abs/.1mm *ASTM D7415 >30 18.6 18.6 17.9 FLUID DEGRADATION method limit/base current history 1 history 2 Oxidation Abs/.1mm *ASTM D7414 >25 13.7 14.0 12.9 | | INFRA-RED | | method | limit/base | current | history 1 | history 2 |
| SulfationAbs/.1mm*ASTM D7415>3018.618.617.9FLUID DEGRADATIONmethodlimit/basecurrenthistory 1history 2OxidationAbs/.1mm*ASTM D7414>2513.714.012.9 | | Soot % | % | *ASTM D7844 | >7.5 | 0.3 | 0.3 | 0.3 |
| FLUID DEGRADATIONmethodlimit/basecurrenthistory 1history 2OxidationAbs/.1mm*ASTM D7414>2513.714.012.9 | | Nitration | Abs/cm | *ASTM D7624 | >20 | 7.5 | 7.1 | 6.9 |
| Oxidation Abs/.1mm *ASTM D7414 >25 13.7 14.0 12.9 | | Sulfation | Abs/.1mm | *ASTM D7415 | >30 | 18.6 | 18.6 | 17.9 |
| | | FLUID DEGRA | | method | limit/base | current | history 1 | history 2 |
| | | Oxidation | Abs/.1mm | *ASTM D7414 | >25 | 13.7 | 14.0 | 12.9 |
| | | | | | | 7.2 | 8.4 | 7.7 |



OIL ANALYSIS REPORT





eb3/21

Vlav3/21

Jul14/22

Dec8/21

20

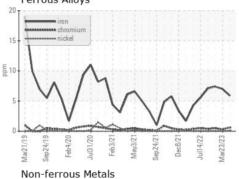
150

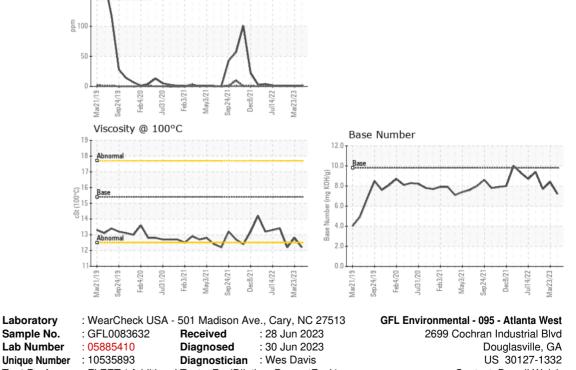
Sep24/21

| VISUAL | | method | limit/base | current | history 1 | history 2 |
|------------------|--------|-----------|------------|---------|-----------|--------------|
| 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 |
| FLUID PROPE | RTIES | method | limit/base | current | history 1 | history 2 |
| Visc @ 100°C | cSt | ASTM D445 | 15.4 | 12.2 | 12.8 | 1 2.2 |
| GRAPHS | | | | | | |

Ferrous Alloys

lead





Test Package : FLEET (Additional Tests: FuelDilution, PercentFuel) Certificate L2367 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)





Mar21/19

an 24/19 eh4/20