

OIL ANALYSIS REPORT

Sample Rating Trend



Machine Id 713050

Component Diesel Engine

Fluid PETRO CANADA DURON SHP 15W40 (--- GAL)

DIAGNOSIS

Recommendation

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.

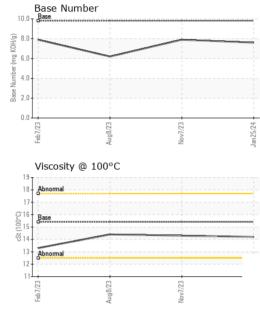
Fluid Condition

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

SAMPLE INFORMATIONmethodlimit/basecurrenthistory1history2Sample NumberClient InfoGFL0108425GFL0098416GFL0089496Sample DateClient Info25 Jan 202407 Nov 202308 Aug 2023Machine AgehrsClient Info280122691773Oil AgehrsClient Info280122690Oil ChangedClient InfoChangedChangedChangedSample StatusImit/basecurrenthistory1history2FuelWC Method>5<1.0<1.0<1.0WaterWC Method>0.2NEGNEGNEGGlycolWC Method>0.2NEGNEGNEGVEAR METALSmethodlimit/basecurrenthistory1history2IronppmASTM D5185m>11061240ChromiumppmASTM D5185m>20<1<1NickelppmASTM D5185m>20<1<1SilverppmASTM D5185m>25233LeadppmASTM D5185m>4<10<1VanadiumppmASTM D5185m>4<10<1VanadiumppmASTM D5185m>4<10<1VeradiumppmASTM D5185m>4<10<1VanadiumppmASTM D5185m<4<10<1Vanadiumppm </th
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WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >110 6 12 40 Chromium ppm ASTM D5185m >4 <1 1 1 Nickel ppm ASTM D5185m >2 0 <1 <1 Titanium ppm ASTM D5185m >2 0 <1 <1 Silver ppm ASTM D5185m >2 0 0 0 Aluminum ppm ASTM D5185m >2 0 0 0 Lead ppm ASTM D5185m >25 2 3 3 Lead ppm ASTM D5185m >45 <1 0 0 Copper ppm ASTM D5185m >45 <1 0 <1 Vanadium ppm ASTM D5185m >4 <1 0 <1 Cadmium ppm ASTM D5185m 0 0 0
Iron ppm ASTM D5185m >110 6 12 40 Chromium ppm ASTM D5185m >4 <1 1 1 Nickel ppm ASTM D5185m >2 0 <1 <1 Titanium ppm ASTM D5185m >2 0 <1 <1 Silver ppm ASTM D5185m >2 0 0 0 Aluminum ppm ASTM D5185m >2 0 0 0 Aluminum ppm ASTM D5185m >2 0 0 0 Lead ppm ASTM D5185m >45 <1 0 0 Copper ppm ASTM D5185m >45 <1 1 3 Tin ppm ASTM D5185m >4 <1 0 <1 Cadmium ppm ASTM D5185m >4 <1 0 <1 Cadmium ppm ASTM D5185m 0 0 0 2<
Chromium ppm ASTM D5185m >4 <1
Nickel ppm ASTM D5185m >2 0 <1
Titanium ppm ASTM D5185m <1
Silver ppm ASTM D5185m >2 0 0 0 Aluminum ppm ASTM D5185m >25 2 3 3 Lead ppm ASTM D5185m >45 <1
Silver ppm ASTM D5185m >2 0 0 0 Aluminum ppm ASTM D5185m >25 2 3 3 Lead ppm ASTM D5185m >45 <1
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Lead ppm ASTM D5185m >45 <1
Copper ppm ASTM D5185m >85 <1
Tin ppm ASTM D5185m >4 <1
Vanadium ppm ASTM D5185m <1
CadmiumppmASTM D5185m000ADDITIVESmethodlimit/basecurrenthistory1history2BoronppmASTM D5185m0002
ADDITIVESmethodlimit/basecurrenthistory1history2BoronppmASTM D5185m0002
Boron ppm ASTM D5185m 0 0 2
Barium ppm ASTM D5185m 0 0 0 0 0
Molybdenum ppm ASTM D5185m 60 51 62 66
Manganese ppm ASTM D5185m 0 <1
Magnesium ppm ASTM D5185m 1010 886 945 1078
Calcium ppm ASTM D5185m 1070 933 1069 1272
Phosphorus ppm ASTM D5185m 1150 955 1033 1118
Zinc ppm ASTM D5185m 1270 1166 1229 1406
Sulfur ppm ASTM D5185m 2060 2626 2860 3667
CONTAMINANTS method limit/base current history1 history2
Silicon ppm ASTM D5185m >30 2 3 6
Sodium ppm ASTM D5185m 5 2 8
Sodium ppm ASTM D5185m 5 2 8 Potassium ppm ASTM D5185m >20 3 10 5
PotassiumppmASTM D5185m>203105INFRA-REDmethodlimit/basecurrenthistory1history2
Potassium ppm ASTM D5185m >20 3 10 5 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.3 0.4 0.6
Potassium ppm ASTM D5185m >20 3 10 5 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.3 0.4 0.6 Nitration Abs/cm *ASTM D7624 >20 9.0 9.4 11.6
Potassium ppm ASTM D5185m >20 3 10 5 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.3 0.4 0.6 Nitration Abs/cm *ASTM D7624 >20 9.0 9.4 11.6 Sulfation Abs/.1mm *ASTM D7415 >30 19.5 20.1 22.9
Potassium ppm ASTM D5185m >20 3 10 5 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.3 0.4 0.6 Nitration Abs/cm *ASTM D7624 >20 9.0 9.4 11.6
Potassium ppm ASTM D5185m >20 3 10 5 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.3 0.4 0.6 Nitration Abs/cm *ASTM D7624 >20 9.0 9.4 11.6 Sulfation Abs/.1mm *ASTM D7415 >30 19.5 20.1 22.9



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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
FLUID PROPE	RTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	14.2	14.3	14.4
Ferrous Alloys		<u> </u>				
6 Feb7/23		Nov7/23	Jan25/24			
Non-ferrous Metals	5					
Aug8/23		Nov7/23	Jan 25/24 +			

Base Number

Aug8/23

10.0

8 (mg KOH/g)

6

0.0

Feb7/23

Number (4 (Base

Jan25/24 -



Sample No. : GFL0108425 Recieved : 01 Feb 2024 630 E Industrial Drive Lab Number : 06076551 Diagnosed :01 Feb 2024 Unique Number : 10858642 Diagnostician : Wes Davis Test Package : FLEET Contact: David McCall Certificate L2367 To discuss this sample report, contact Customer Service at 1-800-237-1369. david.mccall@gflenv.com * - 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)

Nov7/23 -

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

Aug8/23 -

Viscosity @ 100°C

19

18 17

()-16 ()-00 () 15 () 14

13 Abnorma 12 11-

B

Feb7/23

Laboratory

Submitted By: David McCall

Nov7/23 -

GFL Environmental - 918 - Hartland HC

Hartland, WI

T: (262)369-3069

US 53029

Jan 25/24

F: