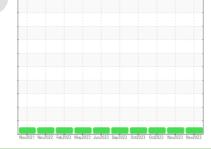


OIL ANALYSIS REPORT

Sample Rating Trend







411026-411026

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.

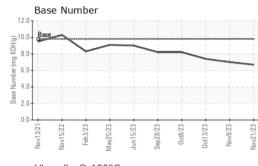
Fluid Condition

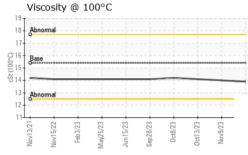
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Arample NumberClient InfoGFL0088110GFL0088092GFL0088238ample DateClient Info21 Nov 202309 Nov 202313 Oct 2023Machine AgehrsClient Info670367036156bil AgehrsClient Info670304181bil ChangedClient Info670304181bil ChangedClient InfoChangedN/AN/AcontractNormALNORMALNORMALNORMALContractNormALNormALWC Method >5<<1.0<1.0ViewWC Method >5.<1.0<1.0ViewWC Method >5.<1.0<1.0WC Method >0.2NEGNEGNEGNEGWEAR METALSmethodImit/basecurrenthistory1history1history2of nonppmASTM D5185m>100211914ShromiumppmASTM D5185m>2011<1ppmASTM D5185m>20543eadppmASTM D5185m>3000O00O00ASTM D5185m>3011<1in ppmASTM D5185m>3011<1ASTM D5185m>30000C
Machine Age hrs Client Info 6703 6703 6703 6156 bil Age hrs Client Info 6703 0 4181 bil Changed Client Info Changed N/A N/A bil Changed Client Info Changed N/A N/A corrent NORMAL NORMAL NORMAL NORMAL CONTAMINATION method imit/base current history1 history2 uel WC Method >5 <1.0 <1.0 <1.0 Vater WC Method >0.2 NEG NEG NEG WeAR METALS method limit/base current history1 history2 on ppm ASTM D5185m >100 21 19 14 thromium ppm ASTM D5185m >20 1 1 <1 tickel ppm ASTM D5185m >20 5 44 3 ead ppm ASTM D5185m >2
Dil Age hrs Client Info 6703 0 4181 Dil Changed Client Info Changed N/A N/A N/A Dil Changed Client Info Changed N/A N/A N/A Sample Status NORMAL NORMAL NORMAL NORMAL NORMAL CONTAMINATION method limit/base current history1 history2 Suel WC Method >5 <1.0 <1.0 <1.0 Vater WC Method >0.2 NEG NEG NEG Weter WC Method >0.2 NEG NEG NEG Weter WC Method >0.2 NEG NEG NEG Weter WC Method >0.2 1 1 <1 Silycol WC Method >0.2 1 1 <1 Weter Ppm ASTM D5185m >100 21 19 14 Silver ppm ASTM D5185m >20 1 1 <1 <1 Silver ppm ASTM D5185m
Dil Changed Client Info Changed N/A N/A Kample Status NORMAL NORMAL NORMAL NORMAL NORMAL CONTAMINATION method limit/base current history1 history2 Vater WC Method >5 <1.0 <1.0 <1.0 Vater WC Method >0.2 NEG NEG NEG Nycol WC Method >0.2 NEG NEG NEG WEAR METALS method limit/base current history1 history2 von ppm ASTM D5185m >100 21 19 14 thromium ppm ASTM D5185m >20 1 1 <1 thickel ppm ASTM D5185m >20 1 1 <1 <1 thiker ppm ASTM D5185m >20 5 4 3 3 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 1 1 1
NormalNormalNormalNormalNormalCONTAMINATIONmethodlimit/basecurrenthistory1history2iuelWC Method>5<1.0<1.0<1.0VaterWC Method>0.2NEGNEGNEGSalycolWC Method>0.2NEGNEGNEGWEAR METALSmethodlimit/basecurrenthistory1history2conppmASTM D5185m>100211914ChromiumppmASTM D5185m>2011<1BilverppmASTM D5185m>2011<1BilverppmASTM D5185m>3000MuminumppmASTM D5185m>20543eadppmASTM D5185m>20543eadppmASTM D5185m>20543eadppmASTM D5185m>33011<1inppmASTM D5185m>15<10<1anadiumppmASTM D5185m0000ADDITIVESmethodlimit/basecurrenthistory1history2foronppmASTM D5185m0<10<1Astm D5185m0<10<1<1<1AdandumppmASTM D5185m0<10<1Astm D5185m0<10<1<1 <t< th=""></t<>
CONTAMINATIONmethodlimit/basecurrenthistory1history2fuelWC Method>5<1.0<1.0<1.0WaterWC Method>0.2NEGNEGNEGBlycolWC MethodNEGNEGNEGNEGWEAR METALSmethodlimit/basecurrenthistory1history2oronppmASTM D5185m>100211914ShromiumppmASTM D5185m>2011<1bickelppmASTM D5185m>4000ittaniumppmASTM D5185m>3000adaminumppmASTM D5185m>3000adaminumppmASTM D5185m>3011<1ittaniumppmASTM D5185m>3011<1aeadppmASTM D5185m>33011<1inppmASTM D5185m>15<10<1inppmASTM D5185m>15<100ADDITIVESmethodlimit/basecurrenthistory1history2koronppmASTM D5185m0<10<1adamiumppmASTM D5185m0<10<1kariumppmASTM D5185m0<10<1kariumppmASTM D5185m0<1<1<1kariumppmASTM D5185m
Water WC Method >5 <1.0
WaterWC Method>0.2NEGNEGNEGBlycolWC MethodNEGNEGNEGWEAR METALSmethodlimit/basecurrenthistory1history2onppmASTM D5185m>100211914ShromiumppmASTM D5185m>2011<1LickelppmASTM D5185m>2011<1LickelppmASTM D5185m>4000SilverppmASTM D5185m>3000JuminumppmASTM D5185m>20543eadppmASTM D5185m>20543eadppmASTM D5185m>33011<1rinppmASTM D5185m>33011<1ranadiumppmASTM D5185m>15<100cadmiumppmASTM D5185m0000ADDITIVESmethodlimit/basecurrenthistory1history2koronppmASTM D5185m0000ADDITIVESmethodlimit/basecurrenthistory1history2koronppmASTM D5185m0<100ADDITIVESmethodlimit/basecurrenthistory1history2koronppmASTM D5185m0<100ADDITIVESmethodlimit/base <td< th=""></td<>
AlycolWC MethodNEGNEGNEGWEAR METALSmethodlimit/basecurrenthistory1history2oonppmASTM D5185m>100211914ChromiumppmASTM D5185m>2011<1LickelppmASTM D5185m>4000itaniumppmASTM D5185m>4000JurinumppmASTM D5185m>3000JurinumppmASTM D5185m>20543eadppmASTM D5185m>40000ScopperppmASTM D5185m>33011<1rinppmASTM D5185m>15<10<1anadiumppmASTM D5185m>15<100ADDITIVESmethodlimit/basecurrenthistory1history2AbronppmASTM D5185m0<10<1ADDITIVESmethodlimit/basecurrenthistory1history2AdmanppmASTM D5185m0<10<1AdmanppmASTM D5185m0<1<1<1AdmanppmASTM D5185m0<10<1AdmanppmASTM D5185m0<1<1<1AdmanppmASTM D5185m0<1<1<1AdmanppmASTM D5185m0
WEAR METALS method limit/base current history1 history2 ron ppm ASTM D5185m >100 21 19 14 chromium ppm ASTM D5185m >20 1 1 <1 lickel ppm ASTM D5185m >20 1 1 <1 lickel ppm ASTM D5185m >20 1 1 <1 lickel ppm ASTM D5185m >4 0 0 0 itanium ppm ASTM D5185m >3 0 0 0 duminum ppm ASTM D5185m >3 0 0 0 duminum ppm ASTM D5185m >20 5 4 3 ead ppm ASTM D5185m >20 5 4 3 ead ppm ASTM D5185m >330 1 1 <1 danadium ppm ASTM D5185m >15 <1 0 <t< th=""></t<>
ppm ASTM D5185m >100 21 19 14 chromium ppm ASTM D5185m >20 1 1 <1
Pp ASTM D5185m >20 1 1 <1
Lickel ppm ASTM D5185m >4 0 0 0 iitanium ppm ASTM D5185m < <1 <1 <1 silver ppm ASTM D5185m >3 0 0 0 Juminum ppm ASTM D5185m >20 5 4 3 ead ppm ASTM D5185m >20 5 4 3 ead ppm ASTM D5185m >20 5 4 3 ead ppm ASTM D5185m >20 1 1 <1 cade ppm ASTM D5185m >330 1 1 <1 cadmium ppm ASTM D5185m >35 <1 0 <1 cadmium ppm ASTM D5185m 0 <1 0 <1 cadmium ppm ASTM D5185m 0 <1 0 <1 cadmium ppm ASTM D5185m 0 <1 <1 <1
itanium ppm ASTM D5185m <1
Silver ppm ASTM D5185m >3 0 0 0 Juminum ppm ASTM D5185m >20 5 4 3 ead ppm ASTM D5185m >40 0 0 0 copper ppm ASTM D5185m >330 1 1 <1 cin ppm ASTM D5185m >330 1 0 <1 danadium ppm ASTM D5185m >15 <1 0 <1 danadium ppm ASTM D5185m >15 <1 0 0 cadmium ppm ASTM D5185m 0 0 0 0 ADDITIVES method limit/base current history1 history2 coron ppm ASTM D5185m 0 0 0 0 Alupbdenum ppm ASTM D5185m 0 0 0 0 Alupsnese ppm ASTM D5185m 0 57 54
Juminum ppm ASTM D5185m >20 5 4 3 ead ppm ASTM D5185m >40 0 0 0 0 copper ppm ASTM D5185m >330 1 1 <1 <1 rin ppm ASTM D5185m >15 <1 0 <1 danadium ppm ASTM D5185m >15 <1 0 0 cadmium ppm ASTM D5185m >15 <1 0 0 cadmium ppm ASTM D5185m 0 <1 0 0 cadmium ppm ASTM D5185m 0 <1 0 0 cadmium ppm ASTM D5185m 0 <1 0 <1 cadmium ppm ASTM D5185m 0 0 0 0 cadmium ppm ASTM D5185m 0 0 0 0 0 dolybdenum ppm ASTM D5185m 0 </th
ead ppm ASTM D5185m >40 0 0 0 copper ppm ASTM D5185m >330 1 1 <1 rin ppm ASTM D5185m >15 <1 0 <1 vanadium ppm ASTM D5185m >15 <1 0 <1 vanadium ppm ASTM D5185m <1 0 0 0 cadmium ppm ASTM D5185m <1 0 0 0 cadmium ppm ASTM D5185m 0 <1 0 0 cadmium ppm ASTM D5185m 0 <1 0 0 cadmium ppm ASTM D5185m 0 <1 0 <1 cadmium ppm ASTM D5185m 0 <1 0 <1 carium ppm ASTM D5185m 0 <1 <1 <1 danganese ppm ASTM D5185m 1010 992 843
Copper ppm ASTM D5185m >330 1 1 <1
ppm ASTM D5185m >15 <1
Vanadium ppm ASTM D5185m <1
Cadmium ppm ASTM D5185m 0 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 <1
ADDITIVES method limit/base current history1 history2 koron ppm ASTM D5185m 0 <1 0 <1 karium ppm ASTM D5185m 0 0 0 0 0 Molybdenum ppm ASTM D5185m 60 58 57 54 Manganese ppm ASTM D5185m 0 <1 <1 <1 Magnesium ppm ASTM D5185m 1010 992 843 864 calcium ppm ASTM D5185m 1070 1103 998 998
Boron ppm ASTM D5185m 0 <1
Barium ppm ASTM D5185m 0 0 0 0 0 Molybdenum ppm ASTM D5185m 60 58 57 54 Manganese ppm ASTM D5185m 0 <1
Molybdenum ppm ASTM D5185m 60 58 57 54 Manganese ppm ASTM D5185m 0 <1
Manganese ppm ASTM D5185m 0 <1
Magnesium ppm ASTM D5185m 1010 992 843 864 Salcium ppm ASTM D5185m 1070 1103 998 998
Calcium ppm ASTM D5185m 1070 1103 998 998
Phosphorus ppm ASTM D5185m 1150 1022 906 899
inc ppm ASTM D5185m 1270 1268 1102 1134
ulfur ppm ASTM D5185m 2060 2823 2722 2490
CONTAMINANTS method limit/base current history1 history2
Silicon ppm ASTM D5185m >25 4 4 3
odium ppm ASTM D5185m 8 10 8
Potassium ppm ASTM D5185m >20 10 11 7
INFRA-RED method limit/base current history1 history2
Soot % *ASTM D7844 >3 1.9 1.6 1.3
litration Abs/cm *ASTM D7624 >20 10.7 10.3 9.4
Aufation Abs/.1mm *ASTM D7024 >20 10.7 10.3 5.4 Sulfation Abs/.1mm *ASTM D7015 >30 23.3 22.7 20.8
Sulfation Abs/.1mm *ASTM D7415 >30 23.3 22.7 20.8

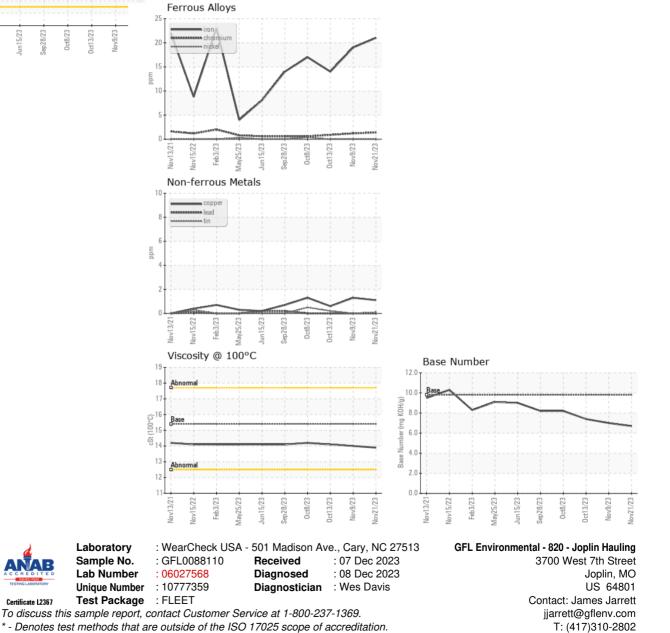


OIL ANALYSIS REPORT





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	13.9	14.0	14.1
GRAPHS						



Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

F: