

OIL ANALYSIS REPORT

Sample Rating Trend



Machine Id 10592

Component Diesel Engine

Fluid

PETRO CANADA DURON SHP 15W40 (32 QTS)

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.

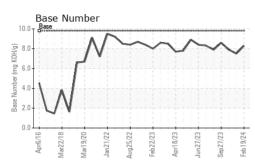
Fluid Condition

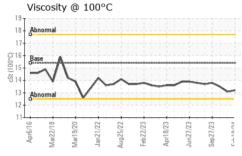
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORMATION method imit/base current history1 history1 Sample Number Client Info GFL0068893 GFL006895 GFL00895 GFL00895 <td< th=""><th>QTS)</th><th></th><th></th><th></th><th></th><th></th><th></th></td<>	QTS)						
Sample Number Client Info GFL0068893 GFL00772 S115 Oil Charged WC Method >0.0 <t< th=""><th></th><th>MATION</th><th>method</th><th>8 Mar2020 Jan2022 Aug2</th><th>Current</th><th>historv1</th><th>history2</th></t<>		MATION	method	8 Mar2020 Jan2022 Aug2	Current	historv1	history2
Sample Date Client Info 19 Feb 2024 29 Jan 2024 27 Oct 202 Machine Age hrs Client Info 21825 21722 21158 Oil Age hrs Client Info 103 564 345 Oil Changed Client Info Not Changd Changed NORMAL							GFL0097219
Machine Age hrs Client Info 21825 21722 21158 Di Age hrs Client Info 103 564 345 Di Age hrs Client Info Not Changed Changed Changed Sample Status Client Info Not Changed NorRMAL NorRMAL NorRMAL CONTAMINATION method imit/base current history1 history1 Fuel WC Method >0.2 NEG NEG NEG Water WC Method No 75 5 11 8 Vickel ppm ASTM 05185m >75 5 11 8 Chromium ppm ASTM 05185m >2 0 0 0 Filanium ppm ASTM 05185m >2 0 0 0 Silver ppm ASTM 05185m >2 0 0 0 Copper ppm ASTM 05185m >2 0 0 0							27 Oct 2023
Dil Age hrs Client Info 103 564 345 Dil Changed Client Info Not Changed Changed Changed Sample Status Nor MAL NORMAL NORMAL NORMAL CONTAMINATION method Imit/base current history1 history1 Fuel WC Method >3.0 <1.0		hrs					
Dil Changed Sample Status Client Info Not Changed NORMAL NORMAL NORMAL NORMAL CONTAMINATION method limit/base current history1 history1 history1 Fuel WC Method >0.2 NEG NEG NEG NEG WEAR METALS method limit/base current history1 history1 Foronium ppm ASTM D5185m >75 5 11 8 Silver ppm ASTM D5185m >2 0 0 0 Sopper ppm ASTM D5185m >15 2 3 2 Cadmium ppm ASTM D5185m >100 <1	•						
Sample Status NORMAL NORMAL NORMAL NORMAL CONTAMINATION method limit/base current history1 history1 Fuel WC Method >3.0 <1.0	-		Client Info		Not Changd	Changed	Changed
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Water WC Method >0.2 NEG <t< td=""><td>CONTAMINAT</td><td>ION</td><td>method</td><td>limit/base</td><th>current</th><td>history1</td><td>history2</td></t<>	CONTAMINAT	ION	method	limit/base	current	history1	history2
Bilycol WC Method NEG NEG NEG WEAR METALS method limit/base current history1 history1 ron ppm ASTM D5185m >5 <1	uel		WC Method	>3.0	<1.0	<1.0	<1.0
WEAR METALS method limit/base current history1 history1 ron ppm ASTM D5185m >75 5 11 8 Chromium ppm ASTM D5185m >5 <1	Vater		WC Method	>0.2	NEG	NEG	NEG
ron ppm ASTM D5185m >75 5 11 8 Dromium ppm ASTM D5185m >5 <1	Glycol		WC Method		NEG	NEG	NEG
Dromium ppm ASTM D5185m >5 <1 <1 <1 Nickel ppm ASTM D5185m >4 0 0 0 Fitanium ppm ASTM D5185m >2 0 0 0 Silver ppm ASTM D5185m >2 0 0 0 Numinum ppm ASTM D5185m >25 0 <1	WEAR METAL	.S	method	limit/base	current	history1	history2
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Titanium ppm ASTM D5185m >2 0 0 0 Silver ppm ASTM D5185m >2 0 0 0 Numinum ppm ASTM D5185m >15 2 3 2 ead ppm ASTM D5185m >100 <1	Chromium	ppm	ASTM D5185m	>5	<1	<1	<1
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Numinum ppm ASTM D5185m >15 2 3 2 Lead ppm ASTM D5185m >25 0 <1	Titanium	ppm	ASTM D5185m	>2	0	0	0
ead ppm ASTM D5185m >25 0 <1 0 Copper ppm ASTM D5185m >100 <1	Silver	ppm	ASTM D5185m	>2	0	0	0
Dopper ppm ASTM D5185m >100 <1 <1 <1 <1 Tin ppm ASTM D5185m >4 <1	Aluminum	ppm	ASTM D5185m	>15	2	3	2
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Agnesium ppm ASTM D5185m 1010 935 905 789 Calcium ppm ASTM D5185m 1070 968 957 1033 Phosphorus ppm ASTM D5185m 1150 1018 994 1048 Cinc ppm ASTM D5185m 1270 1247 1226 1123 Sulfur ppm ASTM D5185m 2060 3052 2964 2784 CONTAMINANTS method limit/base current history1 history Solicon ppm ASTM D5185m >25 3 4 3 Sodium ppm ASTM D5185m >20 3 6 3 Potassium ppm ASTM D5185m >20 3 6 3 INFRA-RED method limit/base current history1 history1 Soot % % *ASTM D7844 >6 0.3 0.5 0.5 Sulfation Abs/cm *ASTM D7624	lolybdenum	ppm	ASTM D5185m	60	56	55	56
Description ppm ASTM D5185m 1070 968 957 1033 Phosphorus ppm ASTM D5185m 1150 1018 994 1048 Zinc ppm ASTM D5185m 1270 1247 1226 1123 Sulfur ppm ASTM D5185m 2060 3052 2964 2784 CONTAMINANTS method limit/base current history1 history Solicon ppm ASTM D5185m >25 3 4 3 Solicon ppm ASTM D5185m >20 3 6 3 Potassium ppm ASTM D5185m >20 3 6 3 INFRA-RED method limit/base current history1 history1 Soot % % *ASTM D7844 >6 0.3 0.5 0.5 Soot % % *ASTM D7844 >6 0.3 9.0 8.1 Sulfation Abs/cm *ASTM D7415 <	langanese	ppm	ASTM D5185m	0	<1	<1	0
Phosphorus ppm ASTM D5185m 1150 1018 994 1048 Zinc ppm ASTM D5185m 1270 1247 1226 1123 Sulfur ppm ASTM D5185m 2060 3052 2964 2784 CONTAMINANTS method limit/base current history1 history1 Solicon ppm ASTM D5185m >25 3 4 3 Solicon ppm ASTM D5185m >25 3 4 10 Solicon ppm ASTM D5185m >20 3 4 10 Potassium ppm ASTM D5185m >20 3 6 3 INFRA-RED method limit/base current history1 history1 Soot % % *ASTM D7844 >6 0.3 0.5 0.5 Soot % % *ASTM D7624 >20 6.3 9.0 8.1 Sulfation Abs/cm *ASTM D7415 30 <td>lagnesium</td> <td>ppm</td> <td>ASTM D5185m</td> <td>1010</td> <th>935</th> <td>905</td> <td>789</td>	lagnesium	ppm	ASTM D5185m	1010	935	905	789
Line ppm ASTM D5185m 1270 1247 1226 1123 Sulfur ppm ASTM D5185m 2060 3052 2964 2784 CONTAMINANTS method limit/base current history1 history1 Solicon ppm ASTM D5185m >25 3 4 3 Solicon ppm ASTM D5185m >25 3 4 10 Solicon ppm ASTM D5185m >20 3 6 3 Potassium ppm ASTM D5185m >20 3 6 3 INFRA-RED method limit/base current history1 history1 Soot % % *ASTM D7844 >6 0.3 0.5 0.5 Jitration Abs/cm *ASTM D7624 >20 6.3 9.0 8.1 Sulfation Abs/.1mm *ASTM D7415 >30 17.8 18.7 18.7 FLUID DEGRADATION method limit/base	Calcium	ppm	ASTM D5185m	1070	968	957	1033
SulfurppmASTM D5185m2060305229642784CONTAMINANTSmethodlimit/basecurrenthistory1history1SiliconppmASTM D5185m>25343SodiumppmASTM D5185m>203410PotassiumppmASTM D5185m>20363INFRA-REDmethodlimit/basecurrenthistory1history1Soot %%*ASTM D7844>60.30.50.5JitrationAbs/cm*ASTM D7624>206.39.08.1SoulfationAbs/cm*ASTM D7415>3017.818.718.7FLUID DEGRADATIONmethodlimit/basecurrenthistory1history1	hosphorus	ppm	ASTM D5185m	1150	1018	994	
CONTAMINANTSmethodlimit/basecurrenthistory1history1SiliconppmASTM D5185m>25343SodiumppmASTM D5185m3410PotassiumppmASTM D5185m>20363INFRA-REDmethodlimit/basecurrenthistory1history1Soot %%*ASTM D7844>60.30.50.5Soot %%*ASTM D7624>206.39.08.1SoulfationAbs/cm*ASTM D7624>3017.818.718.7FLUID DEGRADATIONmethodlimit/basecurrenthistory1history1	Zinc	ppm	ASTM D5185m	1270	1247	1226	1123
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INFRA-REDmethodlimit/basecurrenthistory1history1Soot %%*ASTM D7844>60.30.50.5NitrationAbs/cm*ASTM D7624>206.39.08.1SulfationAbs/.1mm*ASTM D7415>3017.818.718.7FLUID DEGRADATIONmethodlimit/basecurrenthistory1history1		ppm					
Soot % % *ASTM D7844 >6 0.3 0.5 0.5 Nitration Abs/cm *ASTM D7624 >20 6.3 9.0 8.1 Sulfation Abs/.1mm *ASTM D7415 >30 17.8 18.7 18.7 FLUID DEGRADATION method limit/base current history1 history	Potassium	ppm	ASTM D5185m	>20	3	6	3
Abs/cm *ASTM D7624 >20 6.3 9.0 8.1 Sulfation Abs/cm *ASTM D7624 >30 17.8 18.7 18.7 FLUID DEGRADATION method limit/base current history1 history1	INFRA-RED		method	limit/base	current	history1	history2
Sulfation Abs/.1mm *ASTM D7415 >30 17.8 18.7 18.7 FLUID DEGRADATION method limit/base current history1 history1	Soot %			>6			
FLUID DEGRADATION method limit/base current history1 history		Abs/cm		>20		9.0	8.1
	Sulfation	Abs/.1mm	*ASTM D7415	>30	17.8	18.7	18.7
Dxidation Abs/.1mm *ASTM D7414 >25 13.4 15.4 14.3	FLUID DEGRAI	DATION	method	limit/base	current	history1	history2
	Dxidation	Abs/.1mm	*ASTM D7414	>25	13.4		
Base Number (BN) mg KOH/g ASTM D2896 9.8 8.3 7.5 7.9	Base Number (BN)	mg KOH/g	ASTM D2896	9.8	8.3	7.5	7.9



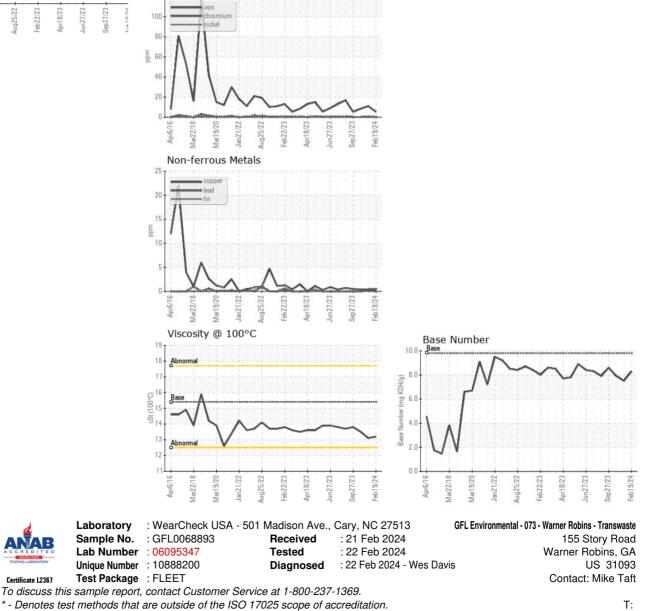
OIL ANALYSIS REPORT

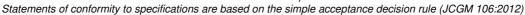




VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	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	13.2	13.1	13.5
GRAPHS						

Ferrous Alloys 120





Certificate L2367