

OIL ANALYSIS REPORT

Sample Rating Trend





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

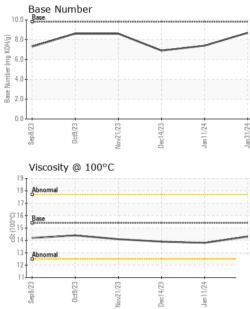
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORMATION method init/base current history1 history2 Sample Number Client Info GFL0102796 GFL0102579 GFL010279 GFL010274 GFL010274	(,	Sep2023	0ct2023 Nov2023	Dec2023 Jan2024	Jan2024	
Sample Date Client Info 31 Jan 2024 11 Jan 2024 14 Dec 2023 Machine Age hrs Client Info 12554 12419 12271 Oil Age hrs Client Info 0 600 0 0 Oil Changed Client Info Not Changd Not Changd Nor MAL NORMAL CONTAMINATION method imil/base current history1 history2 Fuel WC Method >3.0 <1.0 <1.0 <1.0 Water WC Method >0.2 NEG NEG NEG Glycol WC Method >0.2 1 <1 <1 Nickel ppm ASTM D5185m >120 4 12 8 Chromium ppm ASTM D5185m >20 <1 <1 <1 1	SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Machine Age hrs Client Info 12554 12419 12271 Oil Age hrs Client Info 0 600 0 Oil Changed Client Info Not Changed Not Changed Not Changed Sample Status Imit/base current History1 History2 Fuel WC Method >3.0 <1.0 <1.0 <1.0 Water WC Method >3.0 <1.0 <1.0 <1.0 Glycol WC Method >0.2 NEG NEG NEG Chromium ppm ASTM D5185m >120 4 12 8 Chromium ppm ASTM D5185m >20 <1 <1 <1 Nickel ppm ASTM D5185m >20 0 0 0 Aluminum ppm ASTM D5185m >20 2 3 4 2 Titanium ppm ASTM D5185m >20 0 0 0 0 0 0	Sample Number		Client Info		GFL0107968	GFL0102579	GFL0102563
Oil Age hrs Client Info 0 600 0 Oil Changed Client Info Not Changed Not Changed Not Changed Sample Status Imit/base current History1 History2 Fuel WC Method >3.0 <1.0 <1.0 <1.0 Water WC Method >0.2 NEG NEG NEG Glycol WC Method >0.2 NEG NEG NEG VEAR METALS method Imit/base current History1 History2 Iron ppm ASTM D5185m >220 <1 <1 <1 Nickel ppm ASTM D5185m >22 o 0 0 Aluminum ppm ASTM D5185m >20 0 0 0 Aluminum ppm ASTM D5185m >20 0 0 0 Cardmium ppm ASTM D5185m >20 0 0 0 Cardmium ppm A	Sample Date		Client Info		31 Jan 2024	11 Jan 2024	14 Dec 2023
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Sample Status NORMAL NORMAL NORMAL NORMAL NORMAL CONTAMINATION method limit/base current history1 history2 Fuel WC Method >3.0 <1.0 <1.0 <1.0 <1.0 Water WC Method >0.2 NEG NEG NEG Glycol WC Method NEG NEG NEG NEG Othomium ppm ASTM D5185m >12.0 4 12 8 Chromium ppm ASTM D5185m >2.0 <1 <1 <1 Nickel ppm ASTM D5185m >2 <1 <1 <1 Silver ppm ASTM D5185m >2 0 0 0 Copper ppm ASTM D5185m >30 <1 4 2 1 Vanadium ppm ASTM D5185m 0 0 0 0 0 Cademium ppm ASTM D5185m 0 2 <	Oil Age	hrs	Client Info		0	600	0
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Water WC Method >0.2 NEG NEG NEG NEG Glycol WC Method NEG NEG NEG NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >120 4 12 8 Chromium ppm ASTM D5185m >20 <1 <1 <1 Nickel ppm ASTM D5185m >20 2 3 4 Lead ppm ASTM D5185m >20 2 3 4 Lead ppm ASTM D5185m >30 <1 4 2 Tin ppm ASTM D5185m >40 <1 0 0 Capper ppm ASTM D5185m >15 <1 <1 <1 Vanadium ppm ASTM D5185m 0 2 1 2 Boron ppm ASTM D5185m 0 2 1 <1 <th>CONTAMINAT</th> <th>ION</th> <th>method</th> <th>limit/base</th> <th>current</th> <th>history1</th> <th>history2</th>	CONTAMINAT	ION	method	limit/base	current	history1	history2
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Titanium ppm ASTM D5185m >2 <1	Chromium	ppm	ASTM D5185m	>20	<1	<1	<1
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Copper ppm ASTM D5185m >330 <1	Aluminum	ppm	ASTM D5185m	>20	2	3	4
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Barium pm ASTM D5185m 0 2 0 0 Molybdenum ppm ASTM D5185m 60 57 61 55 Manganese ppm ASTM D5185m 0 0 <1 <1 Magnesium ppm ASTM D5185m 1010 912 979 930 Calcium ppm ASTM D5185m 1010 912 1050 1010 Phosphorus ppm ASTM D5185m 1070 1032 1050 1010 Phosphorus ppm ASTM D5185m 1070 1032 1052 996 Zinc ppm ASTM D5185m 1270 1161 1272 1242 Sulfur ppm ASTM D5185m 2060 3291 2948 2996 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >20 1 0 2 Sodium ppm ASTM D7624	ADDITIVES		method	limit/base	current	history1	history2
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Soot % % *ASTM D7844 >4 0.2 0.5 0.4 Nitration Abs/cm *ASTM D7624 >20 6.1 9.8 8.3 Sulfation Abs/.1mm *ASTM D7415 >30 18.2 20.3 19.2 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.3 17.0 15.6	CONTAMINAN Silicon	ppm TS ppm	ASTM D5185m method ASTM D5185m	2060 limit/base	3291 current 4	2948 history1 5	2996 history2 7
Nitration Abs/cm *ASTM D7624 >20 6.1 9.8 8.3 Sulfation Abs/.1mm *ASTM D7415 >30 18.2 20.3 19.2 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.3 17.0 15.6	CONTAMINAN Silicon Sodium	ppm TS ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m	2060 limit/base >25	3291 current 4 0	2948 history1 5 4	2996 history2 7 3
Sulfation Abs/.1mm *ASTM D7415 >30 18.2 20.3 19.2 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.3 17.0 15.6	CONTAMINAN Silicon Sodium Potassium	ppm TS ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m	2060 limit/base >25 >20	3291 current 4 0 1	2948 history1 5 4 0	2996 history2 7 3 2
FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.3 17.0 15.6	CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm TS ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m method	2060 limit/base >25 >20 limit/base	3291 current 4 0 1 current	2948 history1 5 4 0 history1	2996 history2 7 3 2 history2
Oxidation Abs/.1mm *ASTM D7414 >25 14.3 17.0 15.6	CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm TS ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m method *ASTM D7844	2060 limit/base >25 >20 limit/base >4	3291 current 4 0 1 current 0.2	2948 history1 5 4 0 history1 0.5	2996 history2 7 3 2 history2 0.4
	CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm TS ppm ppm ppm % Abs/cm	ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m method *ASTM D7844 *ASTM D7624	2060 limit/base >25 >20 limit/base >4 >20	3291 current 4 0 1 current 0.2 6.1	2948 history1 5 4 0 history1 0.5 9.8	2996 history2 7 3 2 history2 0.4 8.3
Base Number (BN) mg KOH/g ASTM D2896 9.8 8.7 7.4 6.9	CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm TS ppm ppm ppm ppm % Abs/cm Abs/.1mm	ASTM D5185m method ASTM D5185m ASTM D5185m *ASTM D7844 *ASTM D7824 *ASTM D7624	2060 limit/base >25 >20 limit/base >4 >20 >30	3291 current 4 0 1 current 0.2 6.1 18.2	2948 history1 5 4 0 history1 0.5 9.8 20.3	2996 history2 7 3 2 history2 0.4 8.3 19.2
	CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRAD	ppm TS ppm ppm ppm % Abs/cm Abs/cm Abs/1mm	ASTM D5185m method ASTM D5185m ASTM D5185m *ASTM D7844 *ASTM D7844 *ASTM D7624 *ASTM D7415	2060 limit/base >25 >20 limit/base >4 >20 >30 limit/base	3291 current 4 0 1 current 0.2 6.1 18.2 current	2948 history1 5 4 0 history1 0.5 9.8 20.3 history1	2996 history2 7 3 2 history2 0.4 8.3 19.2 history2



OIL ANALYSIS REPORT

VISUAL



CERTIFICATION CARGON TO PARTICIPACITY CARGON TO PARTIC	Laboratory Sample No. Lab Number Unique Number Test Package	: WearCheck USA - : GFL0107968 : 06078923 : 10861014 : FLEET	501 Madison Ave., Cary, NC 27513 Recieved : 02 Feb 2024 Diagnosed : 05 Feb 2024 Diagnostician : Wes Davis <i>tice at 1-800-237-1369.</i>				GFL Environmental - 892 - Pauls Valley Haulin 405 East Airport Industrial Road Pauls Valley, OF US 7307 Contact: Tony Grahan tgraham2@wcamerica.com		
		13 Abnormal 12 -	Nov2/1/23	Jan 11/24	+4. Base Num +9/12 failed	0-	Nov21/23 Dec14/23	Jan 11/24	
		17- 16- Base 15- 15- 15- 14- 17- 16- 15- 16- 15- 16- 15- 16- 15- 16- 15- 16- 16- 15- 16- 16- 16- 16- 15- 16- 15- 16- 15- 16- 15- 16- 15- 15- 16- 15- 15- 15- 15- 15- 15- 15- 15			8 Base Number (mg KOH/g) • •				
		Viscosity @ 100°	C		10.	Base Number	_		
		Sep8/23 0 2 4 9 9 m	Novz 1/23	42/1 luer	Jan31/24				
		10 10 10 10 10 10 10 10 10 10							
		Non-ferrous Meta	Nov21/23		Jan31/24				
		25 E 20 15 10							
Nov21/23 Dec14/23	Jan11/24 +	Ferrous Alloys							
		Visc @ 100°C GRAPHS	cSt	ASTM D445	15.4	14.3	13.8	13.9	
		FLUID PROPE		method	limit/base	current	history1	history2	
		Emulsified Water Free Water	scalar scalar	*Visual *Visual	>0.2	NEG NEG	NEG NEG	NEG NEG	
Dec14/23	Jan 1 1/24 Jan 3 1/24	Appearance Odor	scalar scalar	*Visual *Visual	NORML NORML	NORML NORML	NORML NORML	NORML NORML	
		Debris Sand/Dirt	scalar scalar	*Visual *Visual	NONE	LIGHT	NONE NONE	NONE	
		Silt	scalar	*Visual	NONE	NONE	NONE	NONE	
		Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE	

limit/base

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