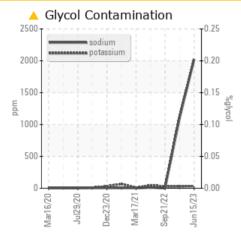
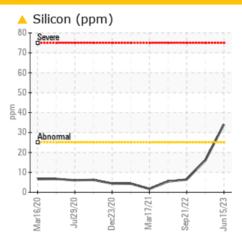


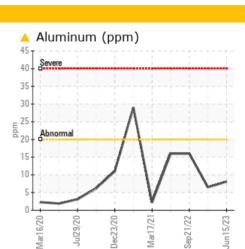
427027-4026

Component Diesel Engine Fluid PETRO CANADA DURON SHP 15W40 (--- GAL)

COMPONENT CONDITION SUMMARY







RECOMMENDATION

We advise that you check for the source of the coolant leak. Check for low coolant level. We advise that you check the air filter, air induction system, and any areas where dirt may enter the component. Oil and filter change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

PROBLEMA	ATIC TES	FRESULT	S			
Sample Status				ABNORMAL	ABNORMAL	NORMAL
Aluminum	ppm	ASTM D5185m	>20	<u> </u>	6	16
Silicon	ppm	ASTM D5185m	>25	A 34	16	6
Sodium	maa	ASTM D5185m		A 2023	A 1101	1

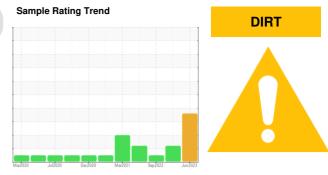
Customer Id: GFL663 Sample No.: GFL0079763 Lab Number: 05896030 Test Package: FLEET



To manage this report scan the QR code

To discuss the diagnosis or test data: Jonathan Hester +1 919-379-4092 x4092 <u>jhester@wearcheckusa.com</u>

To change component or sample information: Customer Service +1 1-800-237-1369 customerservice@wearcheck.com



RECOMMENDED ACTIONS						
Action	Status	Date	Done By	Description		
Change Fluid			?	Oil and filter change at the time of sampling has been noted.		
Change Filter			?	Oil and filter change at the time of sampling has been noted.		
Resample			?	We recommend an early resample to monitor this condition.		
Check Dirt Access			?	We advise that you check the air filter, air induction system, and any areas where dirt may enter the component.		
Check Glycol Access			?	We advise that you check for the source of the coolant leak.		

HISTORICAL DIAGNOSIS

07 Mar 2023 Diag: Jonathan Hester

GLYCOL



We advise that you check for the source of the coolant leak. Check for low coolant level. Oil and filter change at the time of sampling has been noted. We recommend an early resample to monitor this condition.All component wear rates are normal. Sodium and/or potassium levels are high. The BN result indicates that there is suitable alkalinity remaining in the oil.



view report

21 Sep 2022 Diag: Wes Davis





Resample at the next service interval to monitor.All component wear rates are normal. There is no indication of any contamination in the oil. The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

22 Apr 2021 Diag: Jonathan Hester

GLYCOL



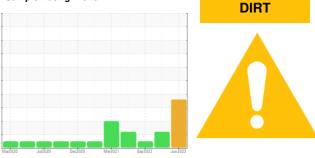
No corrective action is recommended at this time. Resample at the next service interval to monitor.All component wear rates are normal. Sodium and/or potassium levels are high. Test for glycol is negative. The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.





OIL ANALYSIS REPORT

Sample Rating Trend



Machine Id 427027-4026

Component Diesel Engine Fluid PETRO CANADA DURON SHP 15W40 (--- GAL)

DIAGNOSIS

Recommendation

We advise that you check for the source of the coolant leak. Check for low coolant level. We advise that you check the air filter, air induction system, and any areas where dirt may enter the component. Oil and filter change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

📥 Wear

All component wear rates are normal.

Contamination

Sodium and/or potassium levels are high. Elemental levels of silicon (Si) and aluminum (Al) indicate alumina-silicate (coarse dirt) ingress.

Fluid Condition

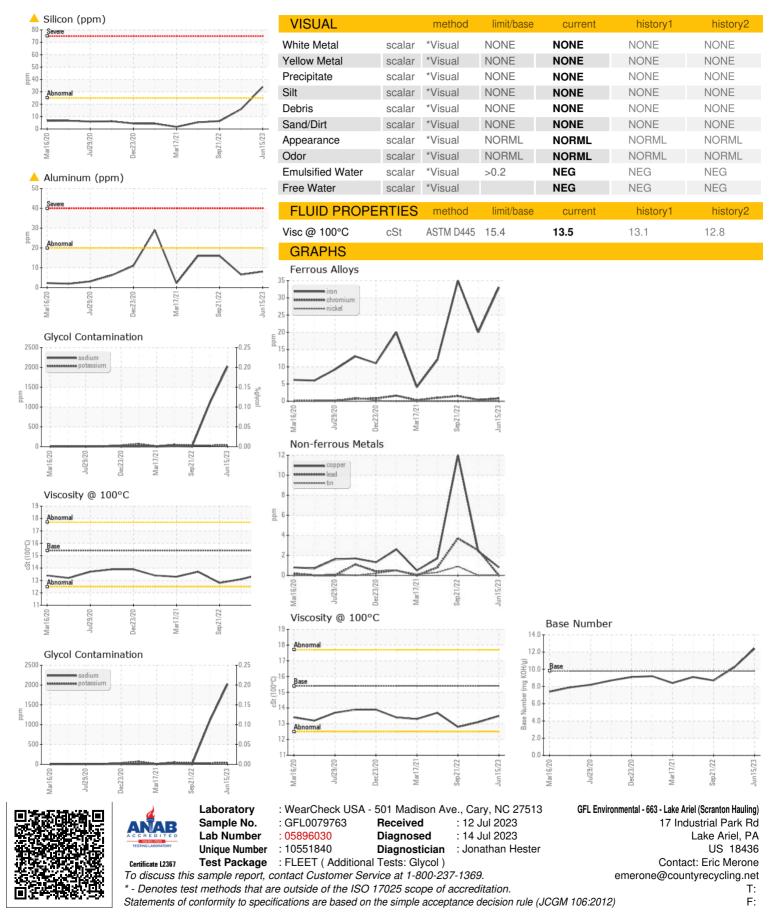
The BN result indicates that there is suitable alkalinity remaining in the oil.

SAMPLE INFORMATION method limit/base current history1 history2 Sample Number Client Info GFL0079763 GFL005970 GFL0031021 Sample Date Client Info 445312 15170 13953 Oli Age hrs Client Info 445312 15170 339545 Oli Age hrs Client Info 4BNORMAL ABNORMAL NORMAL Sample Status Imethod Imit/base current history1 history2 Fuel WC Method >5 <1.0 <1.0 <1.0 VEAR METALS method Imit/base current history1 history2 Fuel WC Method >5 <1.0 <1.0 <1.0 <1.0 Vical ASTM D51855 >20 <1 <1.0 <1.0 <1.0 Tran ppm ASTM D51855 >20 <1 <1 <1.0 <1.0 <1.0 Silver ppm ASTM D51855 >33 0 <td< th=""><th></th><th></th><th></th><th></th><th></th><th></th><th></th></td<>							
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Fuel WC Method >5 <1.0	· · ·	ON	method	limit/base	current	history1	history2
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Lead ppm ASTM D5185m >40 0 2 4 Copper ppm ASTM D5185m >330 <1	Silver	ppm				0	
Copper ppm ASTM D5185m >330 <1 2 12 Tin ppm ASTM D5185m >15 0 0 <1	Aluminum	ppm	ASTM D5185m	>20	<u> </u>	6	16
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Phosphorus ppm ASTM D5185m 1150 891 858 1047 Zinc ppm ASTM D5185m 1270 1208 1108 1264 Sulfur ppm ASTM D5185m 2060 3760 3183 3754 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 ▲ 34 16 6 Sodium ppm ASTM D5185m >20 34 28 28 Glycol % *ASTM D5185m >20 34 28 28 Glycol % *ASTM D2982 NEG NEG NEG NEG INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.5 0.3 0.4 Nitration Abs/.mm *ASTM D7624 >20 13.4 11.8 9.3 Sulfation Abs/.lmm *ASTM D7415 <th>Boron Barium Molybdenum Manganese</th> <td>ppm ppm ppm</td> <td>ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m</td> <td>0 0 60 0</td> <th>37 0 134 0</th> <td>23 0 87 <1</td> <td>13 1 63 <1</td>	Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	37 0 134 0	23 0 87 <1	13 1 63 <1
Zinc ppm ASTM D5185m 1270 1208 1108 1264 Sulfur ppm ASTM D5185m 2060 3760 3183 3754 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 ▲ 34 16 6 Sodium ppm ASTM D5185m >25 ▲ 34 1101 1 Potassium ppm ASTM D5185m >20 34 28 28 Glycol % *ASTM D2982 MEG NEG NEG NEG INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.5 0.3 0.4 Nitration Abs/cm *ASTM D7624 >20 13.4 11.8 9.3 Sulfation Abs/.1mm *ASTM D7415 >30 22.8 20.2 20.2 FLUID DEGRADATION method <t< td=""><th>Boron Barium Molybdenum Manganese Magnesium</th><td>ppm ppm ppm ppm</td><td>ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m</td><td>0 0 60 0 1010</td><th>37 0 134 0 884</th><td>23 0 87 <1 764</td><td>13 1 63 <1 864</td></t<>	Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	37 0 134 0 884	23 0 87 <1 764	13 1 63 <1 864
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Silicon ppm ASTM D5185m >25 ▲ 34 16 6 Sodium ppm ASTM D5185m >20 ▲ 2023 ▲ 1101 1 Potassium ppm ASTM D5185m >20 34 28 28 Glycol % *ASTM D2982 NEG NEG NEG INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.5 0.3 0.4 Nitration Abs/cm *ASTM D7624 >20 13.4 11.8 9.3 Sulfation Abs/.1mm *ASTM D7415 >30 22.8 20.2 20.2 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 17.1 15.6 15.4	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150	37 0 134 0 884 1033 891	23 0 87 <1 764 1165 858	13 1 63 <1 864 1219 1047
Sodium ppm ASTM D5185m ▲ 2023 ▲ 1101 1 Potassium ppm ASTM D5185m >20 34 28 28 Glycol % *ASTM D5185m >20 34 28 28 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.5 0.3 0.4 Nitration Abs/cm *ASTM D7624 >20 13.4 11.8 9.3 Sulfation Abs/.1mm *ASTM D7615 >30 22.8 20.2 20.2 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 17.1 15.6 15.4	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150 1270	37 0 134 0 884 1033 891 1208	23 0 87 <1 764 1165 858 1108	13 1 63 <1 864 1219 1047 1264
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Glycol % *ASTM D2982 NEG NEG NEG INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.5 0.3 0.4 Nitration Abs/cm *ASTM D7624 >20 13.4 11.8 9.3 Sulfation Abs/.1mm *ASTM D7415 >30 22.8 20.2 20.2 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 17.1 15.6 15.4	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m	0 0 60 1010 1070 1150 1270 2060 limit/base	37 0 134 0 884 1033 891 1208 3760 current ▲ 34	23 0 87 <1 764 1165 858 1108 3183 history1 16	13 1 63 <1 864 1219 1047 1264 3754 history2 6
Soot % % *ASTM D7844 >3 0.5 0.3 0.4 Nitration Abs/cm *ASTM D7624 >20 13.4 11.8 9.3 Sulfation Abs/.1mm *ASTM D7415 >30 22.8 20.2 20.2 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 17.1 15.6 15.4	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 1010 1070 1150 1270 2060 limit/base >25	37 0 134 0 884 1033 891 1208 3760 current 34 ▲ 34 ▲ 2023	23 0 87 <1 764 1165 858 1108 3183 history1 16 ▲ 1101	13 1 63 <1 864 1219 1047 1264 3754 history2 6 1
Soot % % *ASTM D7844 >3 0.5 0.3 0.4 Nitration Abs/cm *ASTM D7624 >20 13.4 11.8 9.3 Sulfation Abs/.1mm *ASTM D7415 >30 22.8 20.2 20.2 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 17.1 15.6 15.4	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm	ASTM D5185m ASTM D5185m	0 0 60 1010 1070 1150 1270 2060 limit/base >25	37 0 134 0 884 1033 891 1208 3760 current ▲ 34 2023 34	23 0 87 <1 764 1165 858 1108 3183 history1 16 ▲ 1101 28	13 1 63 <1 864 1219 1047 1264 3754 history2 6 1 28
Nitration Abs/cm *ASTM D7624 >20 13.4 11.8 9.3 Sulfation Abs/.1mm *ASTM D7615 >30 22.8 20.2 20.2 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 17.1 15.6 15.4	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Glycol	ppm	ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20	37 0 134 0 884 1033 891 1208 3760 current 3760 2023 34 NEG	23 0 87 <1 764 1165 858 1108 3183 history1 16 ▲ 1101 28 NEG	13 1 63 <1 864 1219 1047 1264 3754 history2 6 1 28 NEG
Sulfation Abs/.1mm *ASTM D7415 >30 22.8 20.2 20.2 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 17.1 15.6 15.4	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Glycol INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m *ASTM D2982	0 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base	37 0 134 0 884 1033 891 1208 3760 current ▲ 34 2023 34 NEG current	23 0 87 <1 764 1165 858 1108 3183 history1 16 ▲ 1101 28 NEG history1	13 1 63 <1 864 1219 1047 1264 3754 history2 6 1 28 NEG history2
FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 17.1 15.6 15.4	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Glycol INFRA-RED Soot %	ppm	ASTM D5185m ASTM D5185m *ASTM D2982 method *ASTM D7844	0 0 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base >3	37 0 134 0 884 1033 891 1208 3760 current ▲ 34 2023 34 NEG current 0.5	23 0 87 <1 764 1165 858 1108 3183 history1 16 ▲ 1101 28 NEG NEG 0.3	13 1 63 <1 864 1219 1047 1264 3754 history2 6 1 28 NEG history2 0.4
Oxidation Abs/.1mm *ASTM D7414 >25 17.1 15.6 15.4	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Glycol INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D2982 method *ASTM D7844 *ASTM D7844	0 0 0 1010 1070 1150 1270 2060 imit/base >25 >20 imit/base >20	37 0 134 0 884 1033 891 1208 3760 current ▲ 34 ▲ 2023 34 NEG current 0.5 13.4	23 0 87 <1 764 1165 858 1108 3183 history1 16 ▲ 1101 28 NEG NEG history1 0.3 11.8	13 1 63 <1 864 1219 1047 1264 3754 history2 6 1 28 NEG history2 0.4 9.3
	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Glycol INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m *ASTM D2982 nethod *ASTM D7844 *ASTM D7844	0 0 0 1010 1070 1150 1270 2060 imit/base >25 >20 imit/base >20	37 0 134 0 884 1033 891 1208 3760 current ▲ 34 ▲ 2023 34 NEG current 0.5 13.4	23 0 87 <1 764 1165 858 1108 3183 history1 16 ▲ 1101 28 NEG NEG history1 0.3 11.8	13 1 63 <1 864 1219 1047 1264 3754 history2 6 1 28 NEG history2 0.4 9.3
Base Number (BN) mg KOH/g ASTM D2896 9.8 12.4 10.2 8.7	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Glycol INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m *ASTM D2982 nethod *ASTM D7844 *ASTM D7844	0 0 0 1010 1070 1150 1270 2060 imit/base >25 >20 imit/base >20 imit/base >3 >20	37 0 134 0 884 1033 891 1208 3760 current ▲ 34 2023 34 NEG current 0.5 13.4 22.8	23 0 87 <1 764 1165 858 1108 3183 history1 16 ▲ 1101 28 NEG NEG history1 0.3 11.8 20.2	13 1 63 <1 864 1219 1047 1264 3754 history2 6 1 28 NEG history2 0.4 9.3 20.2
	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Glycol INFRA-RED Soot % Nitration Sulfation FLUID DEGRAD	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m *ASTM D2982 method *ASTM D7844 *ASTM D7844 *ASTM D7415	0 0 1010 1070 1150 1270 2060 limit/base >25 	37 0 134 0 884 1033 891 1208 3760 current 34 2023 34 NEG 0.5 13.4 22.8 current	23 0 87 <1 764 1165 858 1108 3183 history1 16 ▲ 1101 28 NEG NEG NEG 0.3 11.8 20.2 history1	13 1 63 <1 864 1219 1047 1264 3754 history2 6 1 28 NEG history2 0.4 9.3 20.2 history2

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OIL ANALYSIS REPORT



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