

### RECOMMENDATION

Oil and filter change at the time of sampling has been noted. No corrective action is recommended at this time. Resample at the next service interval to monitor.

PROBLEMATIC TEST RESULTS								
Sample Status				ATTENTION	NORMAL	NORMAL		
Iron	ppm	ASTM D5185m	>120	<u> </u>	11	6		

Customer Id: GFL465 Sample No.: GFL0091531 Lab Number: 05941741 Test Package: FLEET



To discuss the diagnosis or test data: Sean Felton +1 919-379-4092 sfelton@wearcheckusa.com

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

RECOMMENDE	ED 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.

### HISTORICAL DIAGNOSIS



### 03 Jan 2023 Diag: Wes Davis

Resample at the next service interval to monitor. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample.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.



view report

### 17 Oct 2022 Diag: Wes Davis



Resample at the next service interval to monitor. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample. 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.



#### 30 Aug 2022 Diag: Wes Davis

Resample at the next service interval to monitor. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample.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.







## **OIL ANALYSIS REPORT**

Sample Rating Trend



7842M Component Diesel Engine Fluid

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

				Oct2022 Jan2023		
SAMPLE INFORM	<b>/ATION</b>	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0091531	GFL0063308	GFL005697
Sample Date		Client Info		29 Aug 2023	03 Jan 2023	17 Oct 2022
Machine Age	hrs	Client Info		9613	8029	7438
Oil Age	hrs	Client Info		600	600	600
Oil Changed		Client Info		Changed	Changed	Changed
Sample Status				ATTENTION	NORMAL	NORMAL
CONTAMINATI	ON	method	limit/base	current	history1	history2
Fuel		WC Method	>3.0	<1.0	<1.0	<1.0
Glycol		WC Method		NEG	NEG	NEG
WEAR METALS	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>120	<mark>/</mark> 72	11	6
Chromium	ppm	ASTM D5185m	>20	2	<1	2
Nickel	ppm	ASTM D5185m	>5	<1	<1	0
Titanium	ppm	ASTM D5185m	>2	0	0	0
Silver	ppm	ASTM D5185m	>2	0	<1	0
Aluminum	ppm	ASTM D5185m	>20	3	2	0
Lead	ppm	ASTM D5185m	>40	<1	<1	6
Copper	ppm	ASTM D5185m	>330	3	3	6
Tin	ppm	ASTM D5185m	>15	<1	<1	0
Vanadium	ppm	ASTM D5185m		<1	0	<1
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	0	0	2	0
Barium	ppm	ASTM D5185m	0	0	0	0
Mark de de ser						0
wolybdenum			60	68	59	50
Molybdenum Manganese	ppm	ASTM D5185m		68	59 <1	
Manganese	ppm ppm					50
-	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0	68 <1	<1	50 <1
Manganese Magnesium Calcium	ppm ppm ppm	ASTM D5185m ASTM D5185m	0 1010	68 <1 1059	<1 930	50 <1 849
Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 1010 1070	68 <1 1059 1234	<1 930 1070	50 <1 849 1009
Manganese Magnesium Calcium Phosphorus	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 1010 1070 1150	68 <1 1059 1234 1060	<1 930 1070 932	50 <1 849 1009 875
Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 1010 1070 1150 1270	68 <1 1059 1234 1060 1342	<1 930 1070 932 1230	50 <1 849 1009 875 1072 2615
Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 1010 1070 1150 1270 2060	68 <1 1059 1234 1060 1342 2831	<1 930 1070 932 1230 3057	50 <1 849 1009 875 1072 2615
Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 1010 1070 1150 1270 2060 limit/base	68 <1 1059 1234 1060 1342 2831 current	<1 930 1070 932 1230 3057 history1	50 <1 849 1009 875 1072 2615 history2
Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm <b>TS</b>	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m <b>method</b> ASTM D5185m	0 1010 1070 1150 1270 2060 limit/base >25	68 <1 1059 1234 1060 1342 2831 current 6	<1 930 1070 932 1230 3057 history1 3	50 <1 849 1009 875 1072 2615 history2 3
Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m <b>method</b> ASTM D5185m	0 1010 1070 1150 1270 2060 limit/base >25	68 <1 1059 1234 1060 1342 2831 current 6 10	<1 930 1070 932 1230 3057 history1 3 4	50 <1 849 1009 875 1072 2615 history2 3 2 2
Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 1010 1070 1150 1270 2060 limit/base >25 >20	68 <1 1059 1234 1060 1342 2831 <u>current</u> 6 10 0	<1 930 1070 932 1230 3057 history1 3 4 <1	50 <1 849 1009 875 1072 2615 history2 3 2 2
Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN <sup>T</sup> Silicon Sodium Potassium INFRA-RED	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	0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base	68 <1 1059 1234 1060 1342 2831 current 6 10 0 current	<1 930 1070 932 1230 3057 history1 3 4 <1 history1	50 <1 849 1009 875 1072 2615 history2 3 2 2 2 history2
Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm	ASTM D5185m ASTM D5185m	0 1010 1070 1150 2060 limit/base >25 >20 limit/base >4 >20	68 <1 1059 1234 1060 1342 2831 current 6 10 0 current 2.3	<1 930 1070 932 1230 3057 history1 3 4 <1 history1 0.7	50 <1 849 1009 875 1072 2615 history2 3 2 2 2 history2 0.5
Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration	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 D7844 *ASTM D7824	0 1010 1070 1150 2060 limit/base >25 >20 limit/base >4 >20	68 <1 1059 1234 1060 1342 2831 current 6 10 0 current 2.3 11.6	<1 930 1070 932 1230 3057 history1 3 4 <1 history1 0.7 8.7	50 <1 849 1009 875 1072 2615 history2 3 2 2 history2 0.5 7.7 21.4
Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium 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 D7844 *ASTM D7824	0 1010 1070 1150 1270 2060 limit/base >25 	68 <1 1059 1234 1060 1342 2831 current 6 10 0 current 2.3 11.6 24.8	<1 930 1070 932 1230 3057 history1 3 4 <1 history1 0.7 8.7 20.0	50 <1 849 1009 875 1072 2615 history2 3 2 2 2 history2 0.5 7.7

### DIAGNOSIS

### Recommendation

Oil and filter change at the time of sampling has been noted. No corrective action is recommended at this time. Resample at the next service interval to monitor.

Machine Id

### 🔺 Wear

An increase in the iron level is noted. All other component wear rates are normal.

### Contamination

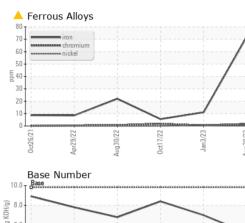
There is no indication of any contamination in the oil.

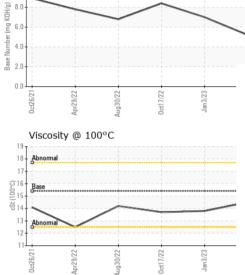
### Fluid Condition

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



# **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
0ct17/22	Jan3/23 Aug29/23	Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
00	L Aut	Odor	scalar	*Visual	NORML	NORML	NORML	NORML
		Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	NEG
		Free Water	scalar	*Visual		NEG	NEG	NEG
$\frown$		FLUID PROP	ERTIES	method	limit/base	current	history1	history2
		Visc @ 100°C	cSt	ASTM D445	15.4	14.5	13.8	13.7
		GRAPHS						
		Ferrous Alloys 80 T						
	23	iron		I I	1			
0ct17/22	Jan 3/23	60 - nickel						
0		50 -			1			
		틆 40		/				
		30 -		/				
		20	$\sim$	/				
		10						
		22 10	122	/23	123			
1		0ct26/21 Apr29/22	Aug30/22 0ct17/22	Jan 3/23	Aug29/23			
		Non-ferrous Meta						
0ct17/22	Jan 3/23	10 copper						
Oct	Jai	8						
		sesses tin						
		6						
		4						
				11-				
		2						
				AND DESCRIPTION OF THE OWNER	CT CT			
		0ct26/21 Apr29/22	Aug30/22 0ct17/22	Jan 3/23	Aug 29/23			
				7	Au			
		Viscosity @ 100°	L		10.0	Base Number		
		18 - Abnormal			10.0	0		
		17-			( <sup>5</sup> <sup>8.0</sup>			
		Base			HO 10 10 10 10 10 10 10 10 10 10 10 10 10		$\checkmark$	
		Base 15 3 14	· · · · · · · · · · · · ·		per 10.0			
		314			6.0 Base Number (mg KOHV6)			1
		13 Abnormal			2.0			
		13 Abnormal			2.0			
		Abnormal	/22 /22 1	23	0.0	22	22	/23
		Abnormal	Aug30/22 0.000	Jan3/23	0.0	0ct26/21	Aug30/22	Jan3/23
		Abnormal 12 11 12 11 12 12 11 12 12 12 12 12 12	4		Aug29/23		4	
4	Laboratory	: WearCheck USA -	501 Madis	on Ave., Ca	ry, NC 27513		Punga0022	- 465 - Pontia
AB.	Sample No.	: WearCheck USA - : GFL0091531	501 Madis Received	on Ave., Ca : 05 \$	ry, NC 27513 Sep 2023			- <b>465 - Pontia</b> 888 Baldw
		: WearCheck USA - : GFL0091531 : 05941741	501 Madis	on Ave., Ca : 05 \$ ed : 06 \$	ry, NC 27513			- 465 - Pontia
	Sample No. Lab Number Unique Number Test Package	: WearCheck USA - : GFL0091531 : 05941741 : 10632353	501 Madis Received Diagnose Diagnosti	on Ave., Ca : 05 \$ ed : 06 \$ cian : Sea	ry, NC 27513 Sep 2023 Sep 2023 an Felton		Environmental - Contact: F	<b>- 465 - Pontia</b> 888 Baldw Pontiac, I

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

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