

## **OIL ANALYSIS REPORT**

Sample Rating Trend





### Machine Id 913065

Fluid

Component Diesel Engine

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.

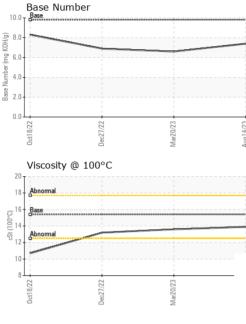
### Fluid Condition

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

SAMPLE INFORI	MATION	method	limit/base	current	history1	history2						
Sample Number		Client Info		GFL0091485	GFL0071178	GFL0063324						
Sample Date		Client Info		14 Aug 2023	20 Mar 2023	27 Dec 2022						
Machine Age	hrs	Client Info		2075	1813	1216						
Oil Age	hrs	Client Info		600	600	600						
Oil Changed		Client Info		Changed	Changed	Changed						
Sample Status				NORMAL	NORMAL	NORMAL						
CONTAMINAT	ION	method	limit/base	current	history1	history2						
Fuel		WC Method	>3.0	<1.0	<1.0	<1.0						
Glycol		WC Method		NEG	NEG	NEG						
WEAR METAL												
Iron	ppm	ASTM D5185m		16	20	22						
Chromium	ppm	ASTM D5185m		<1	<1	<1						
Nickel	ppm	ASTM D5185m	>5	3	5	3						
Titanium	ppm	ASTM D5185m		ر 1	0	0						
Silver	ppm	ASTM D5185m	>2	0	0	<1						
Aluminum	ppm	ASTM D5185m		1	2	<1						
Lead	ppm	ASTM D5185m	>20	، <1	<1	0						
		ASTM D5185m		2	33	117						
Copper Tin	ppm	ASTM D5185m	>330	2 <1	1	2						
Vanadium	ppm ppm	ASTM D5185m	>10	<1	0	0						
Cadmium		ASTM D5185m		0	0	0						
	ppm	ASTIVI DOTODIII		0	0	0						
						history2						
ADDITIVES		method	limit/base	current	history1	TIIStor yz						
Boron	ppm	ASTM D5185m	0	2	<1	74						
	ppm ppm	ASTM D5185m		2 0		74 0						
Boron		ASTM D5185m	0	2	<1	74						
Boron Barium	ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0	2 0	<1 0 61 <1	74 0 63 <1						
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	2 0 59	<1 0 61	74 0 63						
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	2 0 59 <1	<1 0 61 <1	74 0 63 <1						
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	2 0 59 <1 994	<1 0 61 <1 896	74 0 63 <1 859						
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070	2 0 59 <1 994 1177	<1 0 61 <1 896 1111	74 0 63 <1 859 1121						
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150	2 0 59 <1 994 1177 1023	<1 0 61 <1 896 1111 961	74 0 63 <1 859 1121 904						
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm 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	2 0 59 <1 994 1177 1023 1299	<1 0 61 <1 896 1111 961 1207	74 0 63 <1 859 1121 904 1131						
Boron Barium Molybdenum 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 ASTM D5185m ASTM D5185m	0 0 60 1010 1070 1150 1270 2060	2 0 59 <1 994 1177 1023 1299 3424	<1 0 61 <1 896 1111 961 1207 2552	74 0 63 <1 859 1121 904 1131 2832						
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	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	0 0 60 1010 1070 1150 1270 2060	2 0 59 <1 994 1177 1023 1299 3424 current	<1 0 61 <1 896 1111 961 1207 2552 history1	74 0 63 <1 859 1121 904 1131 2832 history2						
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m <b>method</b>	0 0 60 1010 1070 1150 1270 2060	2 0 59 <1 994 1177 1023 1299 3424 current 4	<1 0 61 <1 896 1111 961 1207 2552 history1 6	74 0 63 <1 859 1121 904 1131 2832 history2 8						
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm TS	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 kimit/base >25	2 0 59 <1 994 1177 1023 1299 3424 current 4 5	<1 0 61 <1 896 1111 961 1207 2552 history1 6 2	74 0 63 <1 859 1121 904 1131 2832 history2 8 2						
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 <b>limit/base</b> >25	2 0 59 <1 994 1177 1023 1299 3424 current 4 5 4	<1 0 61 <1 896 1111 961 1207 2552 history1 6 2 2 2	74 0 63 <1 859 1121 904 1131 2832 history2 8 2 2						
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base >20	2 0 59 <1 994 1177 1023 1299 3424 current 4 5 4 5 4	<1 0 61 <1 896 1111 961 1207 2552 history1 6 2 2 2 2 history1	74 0 63 <1 859 1121 904 1131 2832 history2 8 2 2 2 history2						
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base >20	2 0 59 <1 994 1177 1023 1299 3424 current 4 5 4 current 0.7	<1 0 61 <1 896 1111 961 1207 2552 history1 6 2 2 2 history1 0.7	74 0 63 <1 859 1121 904 1131 2832 history2 8 2 2 2 history2 0.6						
Boron Barium Molybdenum 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	0 0 0 1010 1070 1150 1270 2060 <i>limit/base</i> >25 >20 <i>limit/base</i> >4 >20	2 0 59 <1 994 1177 1023 1299 3424 <i>current</i> 4 5 4 <i>current</i> 0.7 7.9	<1 0 61 <1 896 1111 961 1207 2552 history1 6 2 2 2 history1 0.7 9.3	74 0 63 <1 859 1121 904 1131 2832 history2 8 2 2 history2 0.6 8.8						
Boron Barium Molybdenum 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	0 0 0 1010 1070 1150 1270 2060 <b>imit/base</b> >25 <b>imit/base</b> >4 >20 >30	2 0 59 <1 994 1177 1023 1299 3424 <u>current</u> 4 5 4 5 4 0.7 7.9 19.2	<1 0 61 <1 896 1111 961 1207 2552 history1 6 2 2 2 history1 0.7 9.3 20.7	74 0 63 <1 859 1121 904 1131 2832 history2 8 2 2 2 history2 0.6 8.8 20.4						
Boron Barium Molybdenum 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 D7844 *ASTM D7624	0 0 0 1010 1070 1150 1270 2060 2060 225 20 225 20 220 20 20 20 20 20 20 20 20 20 20 20	2 0 59 <1 994 1177 1023 1299 3424 <i>current</i> 4 5 4 <i>current</i> 0.7 7.9 19.2 <i>current</i>	<1 0 61 <1 896 1111 961 1207 2552 history1 6 2 2 2 history1 0.7 9.3 20.7 history1	74 0 63 <1 859 1121 904 1131 2832 history2 8 2 2 history2 0.6 8.8 20.4 history2						



# **OIL ANALYSIS REPORT**



	Laboratory Sample No. Lab Number Unique Number Test Package	: WearCheck USA : GFL0091485 : 05927027 : 10606974 : FLEET	- 501 Madis Received Diagnose Diagnost	d :17/	ry, NC 27513 Aug 2023 Aug 2023 s Davis	GFL E	nvironmental ·	- <b>465 - Pontia</b> 888 Baldwi Pontiac, M US 4834 Ricky Matthew
		0ct18/22		Mar20/23	0.0 + Mug14/23	0ct18/22	Mar20/23	
		11			<sup>2</sup> 2.0			
	ć	3 13 12			6.0 Base Number (mg KOH/d)			
		5 15 14 3 13 Abnormal			Be 6.0			
	Ē	16 Base			KOH/d			
		17-			<del>⊊</del> 8.0			
		19 18 Abnormal			10.0	Base Number	<u></u>	
		ے۔ Viscosity @ 100	°C	×	Au	Dana Number		
		0ct18/22		ar20/23 -	ug14/23 .			
		0						
		50						
	Edd	100						
		150						
		200 - copper tin						
		250 Copper	.dlS					
				Mari	Aug1			
		0ct18/22		Mar20/23	Aug14/23			
		10-						
		20						
		30						
5 <i>0.02</i> ≤ M		40 - nickel						
23		50 iron chromium						
		Ferrous Alloys						
		Visc @ 100°C GRAPHS	cSt	ASTM D445	15.4	13.9	13.6	13.2
		FLUID PROP		method	limit/base	current	history1	history2
		Free Water	scalar	*Visual		NEG	NEG	NEG
		Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	NEG
Mar2	Aug1	Odor	scalar	*Visual	NORML	NORML	NORML	NORML
Mar20/23 -	Malcu/co - Aug14/23 -	Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
		Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
		Silt Debris	scalar scalar	*Visual *Visual	NONE NONE	NONE NONE	NONE NONE	NONE NONE
		Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
			scalar	*Visual	NONE			
		Yellow Metal	ocolor	*\/;ouol	NONE	NONE	NONE	NONE

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

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