

### **OIL ANALYSIS REPORT**

Sample Rating Trend



# 727101-361671

#### 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.

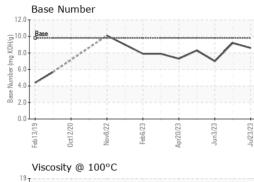
#### Fluid Condition

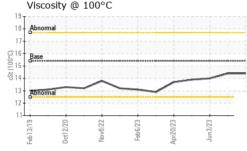
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0076804	GFL0076778	GFL0065511
Sample Date		Client Info		23 Jul 2023	04 Jul 2023	03 Jun 2023
Machine Age	hrs	Client Info		5837	5689	5470
Oil Age	hrs	Client Info		150	150	600
Oil Changed		Client Info		N/A	Not Changd	Changed
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<1.0	<1.0	<1.0
Glycol		WC Method		NEG	NEG	NEG
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	23	15	41
Chromium	ppm	ASTM D5185m	>20	1	1	2
Nickel	ppm	ASTM D5185m	>4	0	<1	<1
Titanium	ppm	ASTM D5185m		0	0	0
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>20	0	3	2
Lead	ppm	ASTM D5185m	>40	0	0	0
Copper	ppm	ASTM D5185m	>330	9	8	17
Tin	ppm	ASTM D5185m	>15	0	<1	<1
Vanadium	ppm	ASTM D5185m		0	0	0
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm		limit/base	current 0	history1 2	history2 2
	ppm ppm					
Boron		ASTM D5185m	0	0	2	2
Boron Barium	ppm	ASTM D5185m ASTM D5185m	0 0 60	0 2	2 0	2 0
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	0 2 60	2 0 59	2 0 55
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	0 2 60 <1	2 0 59 <1	2 0 55 <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	0 2 60 <1 908	2 0 59 <1 958	2 0 55 <1 928
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	0 2 60 <1 908 1091	2 0 59 <1 958 1068	2 0 55 <1 928 983
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	0 2 60 <1 908 1091 1044	2 0 59 <1 958 1068 1053	2 0 55 <1 928 983 907
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	0 2 60 <1 908 1091 1044 1252	2 0 59 <1 958 1068 1053 1310	2 0 55 <1 928 983 907 1216
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	0 2 60 <1 908 1091 1044 1252 3062	2 0 59 <1 958 1068 1053 1310 3796	2 0 55 <1 928 983 907 1216 3244
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	0 2 60 <1 908 1091 1044 1252 3062 current	2 0 59 <1 958 1068 1053 1310 3796 history1	2 0 55 <1 928 983 907 1216 3244 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	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 <b>method</b>	0 0 60 1010 1070 1150 1270 2060	0 2 60 <1 908 1091 1044 1252 3062 current 7	2 0 59 <1 958 1068 1053 1310 3796 history1 6	2 0 55 <1 928 983 907 1216 3244 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 ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 <b>limit/base</b>	0 2 60 <1 908 1091 1044 1252 3062 current 7 5	2 0 59 <1 958 1068 1053 1310 3796 history1 6 4	2 0 55 <1 928 983 907 1216 3244 history2 8 6
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 60 0 1010 1070 1150 1270 2060 <b>limit/base</b> >25 >20	0 2 60 <1 908 1091 1044 1252 3062 current 7 5 2	2 0 59 <1 958 1068 1053 1310 3796 history1 6 4 2	2 0 55 <1 928 983 907 1216 3244 history2 8 6 6 <1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 225 >25	0 2 60 <1 908 1091 1044 1252 3062 current 7 5 2 2	2 0 59 <1 958 1068 1053 1310 3796 history1 6 4 2 2 history1	2 0 55 <1 928 983 907 1216 3244 history2 8 6 <1 +istory2
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 >3	0 2 60 <1 908 1091 1044 1252 3062 <i>current</i> 7 5 2 2 <i>current</i> 0.9	2 0 59 <1 958 1068 1053 1310 3796 history1 6 4 2 2 history1 0.7	2 0 55 <1 928 983 907 1216 3244 history2 8 6 <1 history2 1.5
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 imit/base >25 >20 imit/base >3 >20	0 2 60 <1 908 1091 1044 1252 3062 <i>current</i> 7 5 2 2 <i>current</i> 0.9 8.3	2 0 59 <1 958 1068 1053 1310 3796 history1 6 4 2 history1 0.7 7.4	2 0 55 <1 928 983 907 1216 3244 history2 8 6 <1 kistory2 1.5 1.5 11.0
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> >3 >20	0 2 60 <1 908 1091 1044 1252 3062 <i>current</i> 7 5 2 2 <i>current</i> 0.9 8.3 19.9	2 0 59 <1 958 1068 1053 1310 3796 history1 6 4 2 <u>history1</u> 0.7 7.4 20.3	2 0 55 <1 928 983 907 1216 3244 history2 8 6 <1 * history2 1.5 1.5 11.0 23.2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRAE	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D7415	0 0 0 1010 1070 1150 1270 2060 2060 225 20 220 220 220 33 220 330 20 330	0 2 60 <1 908 1091 1044 1252 3062 <i>current</i> 7 5 2 <i>current</i> 0.9 8.3 19.9 <i>current</i>	2 0 59 <1 958 1068 1053 1310 3796 history1 6 4 2 history1 0.7 7.4 20.3 history1	2 0 55 <1 928 983 907 1216 3244 history2 8 6 <1 history2 1.5 11.0 23.2 history2

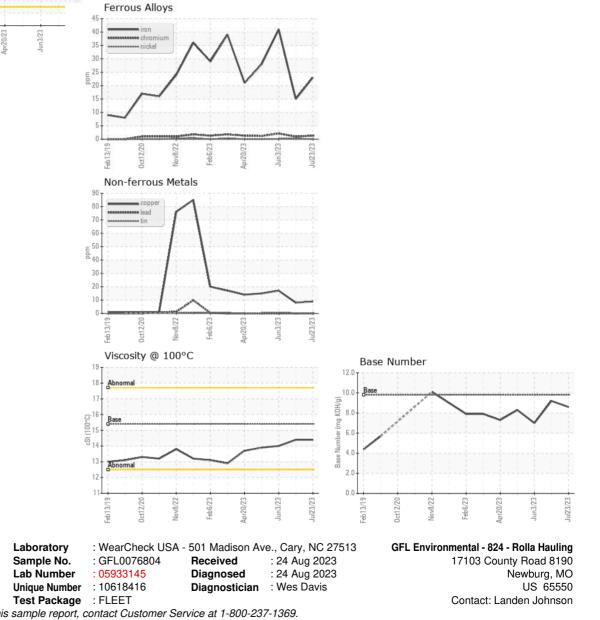


## **OIL ANALYSIS REPORT**





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	14.4	14.4	14.0
GRAPHS						



Certificate L2367 Test Package : FLEET To discuss this sample report, contact Customer Service at 1-800-237-1369. \* - Denotes test methods that are outside of the ISO 17025 scope of accreditation. Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

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