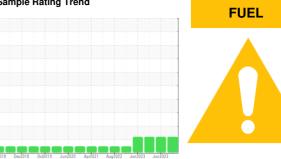


OIL ANALYSIS REPORT

Sample Rating Trend





Machine Id 801032 Component **Diesel Engine**

PETRO CANADA DURON SHP 15W40 (22 LTR)

DIAGNOSIS

Recommendation

The oil change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

All component wear rates are normal.

Contamination

There is a moderate amount of fuel present in the oil. Tests confirm the presence of fuel in the oil.

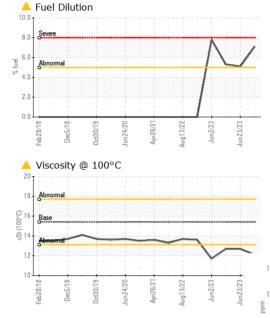
Fluid Condition

Fuel is present in the oil and is lowering the viscosity. The oil is no longer serviceable due to the presence of contaminants.

			OTO OULDTO OUNLOLD	Apr2021 Aug2022 Jun2023		
SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0086491	GFL0086495	GFL0086475
Sample Date		Client Info		17 Jul 2023	23 Jun 2023	12 Jun 2023
Machine Age	hrs	Client Info		11269	11142	11104
Oil Age	hrs	Client Info		0	0	0
Oil Changed		Client Info		Changed	Not Changd	Not Changd
Sample Status				ABNORMAL	ABNORMAL	ABNORMAL
CONTAMINATI	ON	method	limit/base	current	history1	history2
Glycol		WC Method		NEG	NEG	NEG
WEAR METALS	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m)	>80	10	6	6
Chromium	ppm	ASTM D5185(m)	>5	<1	<1	0
Nickel	ppm	ASTM D5185(m)	>2	0	0	0
Titanium	ppm	ASTM D5185(m)		0	0	<1
Silver	ppm	ASTM D5185(m)	>3	0	0	0
Aluminum	ppm	ASTM D5185(m)	>30	2	2	2
Lead	ppm	ASTM D5185(m)	>30	<1	0	0
Copper	ppm	ASTM D5185(m)	>150	<1	<1	<1
Tin	ppm	ASTM D5185(m)	>5	0	0	0
Antimony	ppm	ASTM D5185(m)		0	0	<1
Vanadium	ppm	ASTM D5185(m)		0	0	0
Beryllium	ppm	ASTM D5185(m)		0	0	0
Cadmium	ppm	ASTM D5185(m)		0	0	0
				•		
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	. ,	limit/base			history2 28
		method		current	history1	
Boron	ppm	method ASTM D5185(m)	0	current 20	history1 26	28
Boron Barium	ppm ppm	method ASTM D5185(m) ASTM D5185(m)	0	current 20 0	history1 26 0	28
Boron Barium Molybdenum	ppm ppm	method ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	0 0 60	current 20 0 56	history1 26 0 58	28 0 56
Boron Barium Molybdenum Manganese	ppm ppm ppm	method ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	0 0 60 0	20 0 56 <1	history1 26 0 58 <1	28 0 56 <1
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	method ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	0 0 60 0 1010	current 20 0 56 <1 839	history1 26 0 58 <1 880	28 0 56 <1 834
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	method ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	0 0 60 0 1010 1070	current 20 0 56 <1 839 978	history1 26 0 58 <1 880 993	28 0 56 <1 834 1065
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm	method ASTM D5185(m)	0 0 60 0 1010 1070 1150	current 20 0 56 <1 839 978 972	history1 26 0 58 <1 880 993 1033	28 0 56 <1 834 1065 1028
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185(m)	0 0 60 0 1010 1070 1150 1270	current 20 0 56 <1 839 978 972 1106	history1 26 0 58 <1 880 993 1033 1151	28 0 56 <1 834 1065 1028 1142
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185(m)	0 0 60 0 1010 1070 1150 1270	current 20 0 56 <1 839 978 972 1106 2366	history1 26 0 58 <1 880 993 1033 1151 2481	28 0 56 <1 834 1065 1028 1142 2581
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium	ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185(m)	0 0 60 0 1010 1070 1150 1270 2060	current 20 0 56 <1 839 978 972 1106 2366 <1	history1 26 0 58 <1 880 993 1033 1151 2481 <1	28 0 56 <1 834 1065 1028 1142 2581 <1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185(m)	0 0 60 0 1010 1070 1150 1270 2060	current 20 0 56 <1 839 978 972 1106 2366 <1 current	history1 26 0 58 <1 880 993 1033 1151 2481 <1 history1	28 0 56 <1 834 1065 1028 1142 2581 <1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185(m)	0 0 60 0 1010 1070 1150 1270 2060	20 0 56 <1 839 978 972 1106 2366 <1 current 6	history1 26 0 58 <1 880 993 1033 1151 2481 <1 history1 4	28 0 56 <1 834 1065 1028 1142 2581 <1 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185(m)	0 0 60 0 1010 1070 1150 1270 2060 limit/base >20	current 20 0 56 <1 839 978 972 1106 2366 <1 current 6 6	history1 26 0 58 <1 880 993 1033 1151 2481 <1 history1 4	28 0 56 <1 834 1065 1028 1142 2581 <1 history2 4
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	Method ASTM D5185(m)	0 0 60 0 1010 1070 1150 1270 2060 limit/base >20	current 20 0 56 <1 839 978 972 1106 2366 <1 current 6 6 2	history1 26 0 58 <1 880 993 1033 1151 2481 <1 history1 4 1	28 0 56 <1 834 1065 1028 1142 2581 <1 history2 4 4
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185(m) ASTM D5185(m)	0 0 60 0 1010 1070 1150 1270 2060 limit/base >20 >5	current 20 0 56 <1 839 978 972 1106 2366 <1 current 6 6 7.1 current	history1 26 0 58 <1 880 993 1033 1151 2481 <1 history1 4 4 1 history1 history1	28 0 56 <1 834 1065 1028 1142 2581 <1 history2 4 4 <1 ▲ 5.3 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185(m) ASTM D7593* method ASTM D7593*	0 0 60 0 1010 1150 1270 2060 limit/base >20 >5 limit/base	current 20 0 56 <1 839 978 972 1106 2366 <1 current 6 6 2 ▲ 7.1 current 0.1	history1 26 0 58 <1 880 993 1033 1151 2481 <1 history1 4 4 1 ▲ 5.1 history1 0	28 0 56 <1 834 1065 1028 1142 2581 <1 history2 4 4 <1 ▲ 5.3 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration	ppm	method ASTM D5185(m) ASTM D7844* ASTM D7624*	0 0 60 0 1010 1070 1150 1270 2060 limit/base >20 >5 limit/base >3 >20	current 20 0 56 <1 839 978 972 1106 2366 <1 current 6 6 2 ▲ 7.1 current 0.1 8.2	history1 26 0 58 <1 880 993 1033 1151 2481 <1 history1 4 4 1 ▲ 5.1 history1 0 6.8	28 0 56 <1 834 1065 1028 1142 2581 <1 history2 4 4 <1 ▲ 5.3 history2 0 6.1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration Sulfation	ppm	method ASTM D5185(m) ASTM D7593* method ASTM D7593*	0 0 60 0 1010 1150 1270 2060 limit/base >20 >5 limit/base >3 >20 >3	current 20 0 56 <1 839 978 972 1106 2366 <1 current 6 6 2 ▲ 7.1 current 0.1 8.2 19.7	history1 26 0 58 <1 880 993 1033 1151 2481 <1 history1 4 4 1 1 6.8 18.9	28 0 56 <1 834 1065 1028 1142 2581 <1 history2 4 4 <1 ▲ 5.3 history2 0 6.1 18.4
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration	ppm	method ASTM D5185(m) ASTM D7593* method ASTM D7593*	0 0 60 0 1010 1070 1150 1270 2060 limit/base >20 >5 limit/base >3 >20	current 20 0 56 <1 839 978 972 1106 2366 <1 current 6 6 2 ▲ 7.1 current 0.1 8.2	history1 26 0 58 <1 880 993 1033 1151 2481 <1 history1 4 4 1 ▲ 5.1 history1 0 6.8	28 0 56 <1 834 1065 1028 1142 2581 <1 history2 4 4 <1 ▲ 5.3 history2 0 6.1

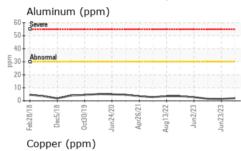


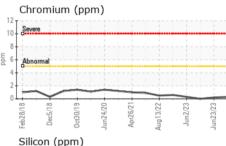
OIL ANALYSIS REPORT



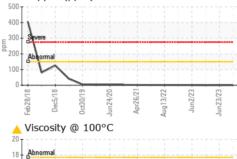
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	Visual*	NONE	NONE	NONE	VLITE
Yellow Metal	scalar	Visual*	NONE	NONE	NONE	NONE
Precipitate	scalar	Visual*	NONE	NONE	NONE	NONE
Silt	scalar	Visual*	NONE	NONE	NONE	NONE
Debris	scalar	Visual*	NONE	VLITE	NONE	NONE
Sand/Dirt	scalar	Visual*	NONE	NONE	NONE	VLITE
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

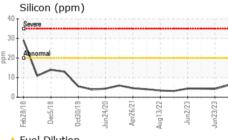
	FLUID PROPERTIES		method	limit/ba	ase current	histoi
	Visc @ 100°C	cSt	ASTM D7279(m)	15.4	<u> </u>	▲ 12.7
	GRAPHS					
	Iron (ppm)				Lead (ppm)	
15	Severe				Severe	

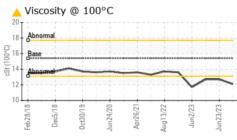


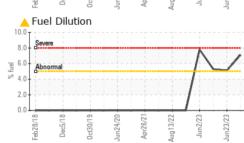


12.7











CALA ISO 17025:2017 Accredited

Laboratory Sample No. Lab Number **Unique Number**

: GFL0086491 : 02570807

: WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9 Received : 19 Jul 2023 Diagnosed : 20 Jul 2023 : 5607853

Diagnostician : Wes Davis

Test Package : MOB 1 (Additional Tests: PercentFuel, Visual)

To discuss this sample report, contact Customer Service at 1-800-268-2131. Test denoted (*) outside scope of accreditation, (m) method modified, (e) tested at external lab. Validity of results and interpretation are based on the sample and information as supplied.

GFL Environmental - 217 - Aurora 14131 BAYVIEW AVE, AURORA YARD AURORA, ON

> CA L4G 0K6 Contact: Mike Havens MHavens@gflenv.com

T:

F: (905)713-2445