

OIL ANALYSIS REPORT

Sample Rating Trend



Machine Id

INTERNATIONAL 828109

Component Diesel Engine

Fluid PETRO CANADA DURON HP 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 condition of the oil is acceptable for the time in service.

SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0122245		
Sample Date		Client Info		06 Jun 2024		
Machine Age	hrs	Client Info		14777		
Oil Age	hrs	Client Info		650		
Oil Changed		Client Info		Changed		
Sample Status				NORMAL		
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>2.0	<1.0		
Water		WC Method	>0.2	NEG		
Glycol		WC Method		NEG		
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m)	>100	16		
Chromium	ppm	ASTM D5185(m)	>20	<1		
Nickel	ppm	ASTM D5185(m)	>20	<1		
Titanium	ppm	ASTM D5185(m)	~	0		
Silver		ASTM D5185(m)	>3	0		
Aluminum	ppm ppm	ASTM D5185(m)	>20	2		
Lead	ppm	ASTM D5185(m) ASTM D5185(m)	>20	0		
Copper	ppm	ASTM D5185(m)	>330	1		
Tin		ASTM D5185(m)	>15	0		
Antimony	ppm ppm	ASTM D5185(m)	>15	0		
Vanadium		ASTM D5185(m)		0		
vanaulum	ppm	ASTIVI DJ 103(III)		U		
Dorullium	nnm	ACTM DE10E(m)		0		
Beryllium	ppm	ASTM D5185(m)		0		
Cadmium	ppm ppm	ASTM D5185(m)		0 0		
•			limit/base	-		
Cadmium		ASTM D5185(m)	limit/base 0	0		
Cadmium ADDITIVES	ppm	ASTM D5185(m) method		0 current	 history1	history2
Cadmium ADDITIVES Boron	ppm ppm	ASTM D5185(m) method ASTM D5185(m)	0	0 current 3	 history1 	 history2
Cadmium ADDITIVES Boron Barium	ppm ppm ppm	ASTM D5185(m) method ASTM D5185(m) ASTM D5185(m)	0 0 60	0 current 3 0	 history1 	 history2
Cadmium ADDITIVES Boron Barium Molybdenum	ppm ppm ppm ppm	ASTM D5185(m) method ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	0 0 60	0 current 3 0 58	 history1 	 history2
Cadmium ADDITIVES Boron Barium Molybdenum Manganese	ppm ppm ppm ppm	ASTM D5185(m) method ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	0 0 60 0	0 current 3 0 58 <1	 history1 	 history2
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm ppm ppm	ASTM D5185(m) method ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	0 0 60 0 1010	0 current 3 0 58 <1 951	 history1 	 history2
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) method ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	0 0 60 0 1010 1070	0 current 3 0 58 <1 951 1054	 history1 	 history2
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) 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 1150	0 current 3 0 58 <1 951 1054 973	 history1 	 history2
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) method ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	0 0 60 0 1010 1070 1150 1270	0 current 3 0 58 <1 951 1054 973 1187	 history1 	 history2
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) method ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	0 0 60 0 1010 1070 1150 1270	0 current 3 0 58 <1 951 1054 973 1187 2470	 history1 -	 history2
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) method ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	0 0 60 1010 1070 1150 1270 2060	0 current 3 0 58 <1 951 1054 973 1187 2470 <1	 history1 -	 history2 -
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) method ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	0 0 60 1010 1070 1150 1270 2060	0 current 3 0 58 <1 951 1054 973 1187 2470 <1 current	 history1 -	 history2 -
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) method ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	0 0 60 1010 1070 1150 1270 2060	0 current 3 0 58 <1 951 1054 973 1187 2470 <1 current 2	 history1 -	 history2 -
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) method ASTM D5185(m) ASTM D5185(m)	0 0 60 1010 1070 1150 1270 2060 imit/base	0 current 3 0 58 <1 951 1054 973 1187 2470 <1 current 2 1	 history1 history1 history1	 history2 history2 history2
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) method ASTM D5185(m) ASTM D5185(m)	0 0 60 0 1010 1070 1150 1270 2060 Jimit/base >25 >20	0 current 3 0 58 <1 951 1054 973 1187 2470 <1 current 2 1 current 2 1 <1	 history1 history1 	 history2 history2 history2
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) method ASTM D5185(m) ASTM D5185(m)	0 0 0 1010 1070 1150 1270 2060 imit/base >25 >20	0 current 3 0 58 <1 951 1054 973 1187 2470 <1 current 2 1 <1 current	 history1 history1 history1	history2 i i i i i i i i i history2 i
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) method ASTM D5185(m) ASTM D5185(m)	0 0 0 1010 1070 1150 1270 2060 imit/base >25 >20 imit/base >3	0 current 3 0 58 <1 951 1054 973 1187 2470 <1 current 2 1 <1 current 0.4	 history1 history1 history1	history2 i i i i i i i i i i history2 i i i history2 i



3

30

25 m3/sq/

10

150

140 - Ann 130 -

ත් 110 100 90 - Abnormal

80

150

140 -130 -(), 120 - Bas 35 110 -

100 - Ab 80 - Ab

FT-IR (Direct Trend)

Oxidation

Nitration Sulfation

Viscosity @ 40°C

Viscosity @ 40°C

Abnormal

Abnormal

OIL ANALYSIS REPORT

		method	limit/base	current	history1	histo
Oxidation	Abs/.1mm	ASTM D7414*	>25	16.1		
VISUAL		method	limit/base	current	history1	histo
White Metal	scalar	Visual*	NONE	VLITE		
Yellow Metal	scalar	Visual*	NONE	NONE		
Precipitate	scalar	Visual*	NONE	NONE		
Silt	scalar	Visual*	NONE	NONE		
Debris	scalar	Visual*	NONE	NONE		
Sand/Dirt	scalar	Visual*	NONE	NONE		
Appearance	scalar	Visual*	NORML	NORML		
Odor	scalar	Visual*	NORML	NORML		
Emulsified Water	scalar	Visual*	>0.2	NEG		
Free Water	scalar	Visual*		NEG		
FLUID PROPE	RTIES	method	limit/base	current	history1	histo
Visc @ 40°C	cSt	ASTM D7279(m)	118.2	102		
Visc @ 100°C	cSt	ASTM D7279(m)	15.6	13.8		
Viscosity Index (VI)	Scale	ASTM D2270*	139	136		
GRAPHS						
Iron (ppm)				Lead (ppm)		
DO T			100			
00 - Severe				T		
00 - Abnormal			툍 50	Abnormal		
0						
6/24			0	6/24		
Jun6/24			Jun6/24	Jun6/24		
Jun6/24			Jun6/24	Jun6/24	pm)	
Aluminum (ppm)			Jun6/24	FZ/gunf Chromium (p	pm)	
Aluminum (ppm)			60 40	Chromium (p	pm)	
Aluminum (ppm)			Jun6/24	Chromium (p	pm)	
Aluminum (ppm)			40 40 40 20	Chromium (p	pm)	
Aluminum (ppm)			40 40 20	Chromium (p	pm)	
Aluminum (ppm)			40 40 40 20	Chromium (p	pm)	
Aluminum (ppm)			40 40 20	Chromium (p	pm)	
Aluminum (ppm)			40 40 20	Chromium (p	pm)	
Aluminum (ppm)			40 40 40 40 40 40 40 60 60 60	Chromium (p		
Aluminum (ppm)			40 40 40 40 40 40 0	Chromium (p		
Aluminum (ppm)			40 40 40 40 40 40 40 60 60 60	Chromium (p		
Aluminum (ppm)			40 40 40 40 40 40 40 40 40 40	Chromium (p		
Aluminum (ppm)			400 400 20	Chromium (p		
Aluminum (ppm)			40 40 40 40 40 40 40 40 40 40	Chromium (p		
Aluminum (ppm)			40 40 40 40 40 40 40 40 40 40	Chromium (p		
Aluminum (ppm)			40 40 40 40 40 40 40 40 40 40	Chromium (p		
Aluminum (ppm) ⁶⁰ ⁴⁰ ⁴⁰ ⁴⁰ ⁶			40 40 40 40 40 40 40 40 40 40	Chromium (p		
Aluminum (ppm)			40 40 40 40 40 40 40 40 40 40 40 40 40 4	Chromium (p		

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9 GFL Environmental - 987 - Charlottetown CALA Sample No. : GFL0122245 Received : 28 Jun 2024 7 Superior Crescent Lab Number : 02644524 Tested : 28 Jun 2024 Charlottetown, PE ISO 17025:2017 Accredited Laboratory CA C1A 7N5 Unique Number : 5802063 Diagnosed : 28 Jun 2024 - Wes Davis Test Package : MOB 1 (Additional Tests: KV40, VI, Visual) Contact: Vicki Metcalfe vmetcalfe@gflenv.com To discuss this sample report, contact Customer Service at 1-800-268-2131. T: (782)377-5918 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. F: (506)453-9490

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