

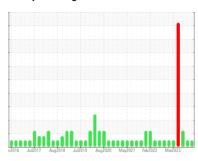
OIL ANALYSIS REPORT

(YA122728) GFL035 3645

Component

Diesel Engine

PETRO CANADA DURON SHP 15W40 (38 QTS)



Sample Rating Trend



DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

All component wear rates are normal.

Contamination

There is no indication of any contamination in the

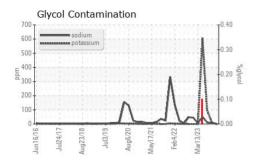
Fluid Condition

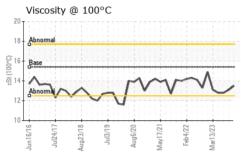
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

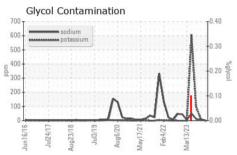
SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0102367	GFL0102343	GFL0085228
Sample Date		Client Info		05 Mar 2024	16 Feb 2024	11 Jan 2024
Machine Age	hrs	Client Info		11809	11809	11809
Oil Age	hrs	Client Info		600	600	600
Oil Changed		Client Info		Not Changd	Not Changd	Changed
Sample Status				NORMAL	NORMAL	ABNORMAL
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>3.0	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
WEAD METAL	0				12.4	
WEAR METAL	5	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>75	6	13	53
Chromium	ppm	ASTM D5185m	>5	0	<1	2
Nickel	ppm	ASTM D5185m	>4	<1	1	3
Titanium	ppm	ASTM D5185m	>2	0	0	0
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>15	0	2	3
Lead	ppm	ASTM D5185m	>25	0	0	1
Copper	ppm	ASTM D5185m	>100	2	13	75
Tin	ppm	ASTM D5185m	>4	0	<1	<1
Vanadium	ppm	ASTM D5185m		0	0	0
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	ourrant.	history1	history2
ADDITIVES		memou	IIIIII/Dase	current	HISTORY	HISTOTYZ
Boron	ppm	ASTM D5185m	0	<1	2	5
	ppm				•	
Boron		ASTM D5185m	0	<1	2	5
Boron Barium	ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0	<1 0	2	5
Boron Barium Molybdenum	ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	<1 0 54	2 0 57	5 0 61
Boron Barium Molybdenum Manganese	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	<1 0 54 0	2 0 57	5 0 61 1
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	<1 0 54 0 929	2 0 57 0 912	5 0 61 1 879
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070	<1 0 54 0 929 1051	2 0 57 0 912 1040	5 0 61 1 879 1101
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	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	<1 0 54 0 929 1051 1026	2 0 57 0 912 1040 1012	5 0 61 1 879 1101 944
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 ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150	<1 0 54 0 929 1051 1026 1246	2 0 57 0 912 1040 1012 1233	5 0 61 1 879 1101 944 1195
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 ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060	<1 0 54 0 929 1051 1026 1246 3545	2 0 57 0 912 1040 1012 1233 3258	5 0 61 1 879 1101 944 1195 2281
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060	<1 0 54 0 929 1051 1026 1246 3545	2 0 57 0 912 1040 1012 1233 3258 history1	5 0 61 1 879 1101 944 1195 2281 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm	ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060	<1 0 54 0 929 1051 1026 1246 3545 current	2 0 57 0 912 1040 1012 1233 3258 history1	5 0 61 1 879 1101 944 1195 2281 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm	ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base	<1 0 54 0 929 1051 1026 1246 3545 current 4	2 0 57 0 912 1040 1012 1233 3258 history1 4	5 0 61 1 879 1101 944 1195 2281 history2 8 12
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm	ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base	<1 0 54 0 929 1051 1026 1246 3545 current 4 1	2 0 57 0 912 1040 1012 1233 3258 history1 4 5	5 0 61 1 879 1101 944 1195 2281 history2 8 12 98
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Glycol	ppm	ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25	<1 0 54 0 929 1051 1026 1246 3545 current 4 1 0 NEG	2 0 57 0 912 1040 1012 1233 3258 history1 4 5 11 NEG	5 0 61 1 879 1101 944 1195 2281 history2 8 12 ▲ 98 NEG
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Glycol INFRA-RED Soot %	ppm	ASTM D5185m *ASTM D5185m ASTM D5185m *ASTM D5185m ASTM D5185m ASTM D5185m *ASTM D5185m *ASTM D5185m *ASTM D2982 method *ASTM D7844	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20	<1 0 54 0 929 1051 1026 1246 3545 current 4 1 0 NEG current 0.2	2 0 57 0 912 1040 1012 1233 3258 history1 4 5 11 NEG	5 0 61 1 879 1101 944 1195 2281 history2 8 12 ▲ 98 NEG history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Glycol INFRA-RED	ppm	ASTM D5185m *ASTM D5185m *ASTM D5185m ASTM D5185m *ASTM D5185m *ASTM D5185m *ASTM D5185m *ASTM D5185m *ASTM D2982 *Method	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20	<1 0 54 0 929 1051 1026 1246 3545 current 4 1 0 NEG	2 0 57 0 912 1040 1012 1233 3258 history1 4 5 11 NEG	5 0 61 1 879 1101 944 1195 2281 history2 8 12 ▲ 98 NEG
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Glycol INFRA-RED Soot % Nitration Sulfation	ppm	ASTM D5185m *ASTM D7844 *ASTM D7624 *ASTM D76145	0 0 60 0 1010 1150 1270 2060 limit/base >25 >20	<1 0 54 0 929 1051 1026 1246 3545 current 4 1 0 NEG current 0.2 6.9 18.7	2 0 57 0 912 1040 1012 1233 3258 history1 4 5 11 NEG history1 0.3 7.4 18.8	5 0 61 1 879 1101 944 1195 2281 history2 8 12 ▲ 98 NEG history2 1.2 1.2 1.2 24.7
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Glycol INFRA-RED Soot % Nitration Sulfation FLUID DEGRAE	ppm	ASTM D5185m *ASTM D7812 method *ASTM D7844 *ASTM D7624 *ASTM D7415 method	0 0 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base >6 >20 >30 limit/base	<1 0 54 0 929 1051 1026 1246 3545 current 4 1 0 NEG current 0.2 6.9 18.7 current	2 0 57 0 912 1040 1012 1233 3258 history1 4 5 11 NEG history1 0.3 7.4 18.8 history1	5 0 61 1 879 1101 944 1195 2281 history2 8 12 ▲ 98 NEG history2 1.2 1.2 1.2 1.2 1.2 1.3 1.3 1.3 1.3 1.3 1.3 1.3 1.3
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Glycol INFRA-RED Soot % Nitration Sulfation	ppm	ASTM D5185m *ASTM D7844 *ASTM D7624 *ASTM D76145	0 0 60 0 1010 1150 1270 2060 limit/base >25 >20	<1 0 54 0 929 1051 1026 1246 3545 current 4 1 0 NEG current 0.2 6.9 18.7	2 0 57 0 912 1040 1012 1233 3258 history1 4 5 11 NEG history1 0.3 7.4 18.8	5 0 61 1 879 1101 944 1195 2281 history2 8 12 ▲ 98 NEG history2 1.2 1.2 1.2 24.7



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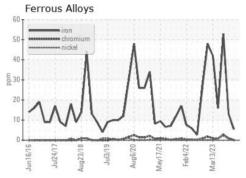




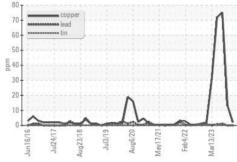
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual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

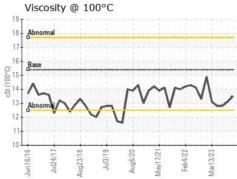
FLUID PROPE	ERTIES	method				history2
Visc @ 100°C	cSt	ASTM D445	15.4	13.5	13.1	12.8

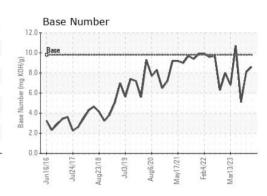
GRAPHS















Laboratory Sample No. Lab Number : 06120023 Unique Number: 10928856

: GFL0102367

Received **Tested** Diagnosed Test Package: FLEET (Additional Tests: Glycol)

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 : 15 Mar 2024 : 22 Mar 2024

: 22 Mar 2024 - Jonathan Hester

GFL Environmental - 035 - Greensboro

1236 Elon Place High Point, NC US 27263

Contact: JORGE COSTA jorge.costa@gflenv.com T: (336)668-3712

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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