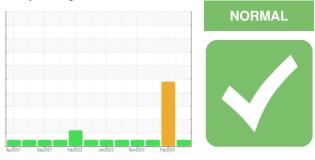


OIL ANALYSIS REPORT

Sample Rating Trend



Machine Id 710017 Component Diesel Engi Fluid PETRO CAN

Component Diesel Engine Fluid PETRO CANADA DURON SHP 15W40 (25 GAL)

SAMPLE INFORMATION method

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.

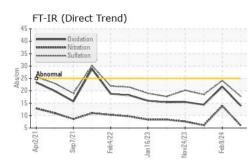
Fluid Condition

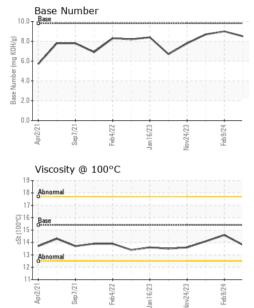
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sample Number		Client Info		GFL0117590	GFL0108925	GFL0101515
Sample Date		Client Info		17 Apr 2024	09 Feb 2024	01 Dec 2023
Machine Age	hrs	Client Info		11847	11280	10685
Oil Age	hrs	Client Info		11280	10685	10685
Oil Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	ABNORMAL	NORMAL
			11 11 11			
CONTAMINATI	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
Glycol		WC Method		NEG	NEG	NEG
WEAR METALS	S	method	limit/base	current	history1	history2
Iron			>120	7	43	3
Chromium	ppm	ASTM D5185m	>120	ر <1	43	0
	ppm					
Nickel	ppm	ASTM D5185m	>5	0	0	<1
Titanium	ppm	ASTM D5185m	>2	<1	<1	0
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>20	<1	8	0
Lead	ppm	ASTM D5185m	>40	0	<1	0
Copper	ppm		>330	3	3	2
Tin	ppm	ASTM D5185m	>15	<1	0	0
Vanadium	ppm	ASTM D5185m		0	<1	0
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES						history O
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	limit/base	current 3	history1 27	<1
	ppm ppm		0			
Boron		ASTM D5185m	0	3	27	<1
Boron Barium	ppm	ASTM D5185m ASTM D5185m	0	3 1	27 0	<1 0
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	3 1 56	27 0 100	<1 0 56
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	3 1 56 1	27 0 100 0	<1 0 56 0
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	3 1 56 1 893	27 0 100 0 881	<1 0 56 0 958
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070	3 1 56 1 893 1165	27 0 100 0 881 1032	<1 0 56 0 958 1124
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	3 1 56 1 893 1165 1073	27 0 100 0 881 1032 980	<1 0 56 0 958 1124 840
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	3 1 56 1 893 1165 1073 1242	27 0 100 0 881 1032 980 1160	<1 0 56 0 958 1124 840 1219
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	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 0 1010 1070 1150 1270 2060	3 1 56 1 893 1165 1073 1242 3697	27 0 100 0 881 1032 980 1160 2980	<1 0 56 0 958 1124 840 1219 2916 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method	0 0 60 1010 1070 1150 1270 2060	3 1 56 1 893 1165 1073 1242 3697 current 7	27 0 100 0 881 1032 980 1160 2980 history1	<1 0 56 0 958 1124 840 1219 2916
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	3 1 56 1 893 1165 1073 1242 3697 current	27 0 100 881 1032 980 1160 2980 history1 ▲ 26	<1 0 56 0 958 1124 840 1219 2916 history2 3
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 kimit/base >25	3 1 56 1 893 1165 1073 1242 3697 current 7 8	27 0 100 881 1032 980 1160 2980 history1 ▲ 26 ▲ 1281	<1 0 56 0 958 1124 840 1219 2916 history2 3 7
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 limit/base >25	3 1 56 1 893 1165 1073 1242 3697 current 7 8 1	27 0 100 881 1032 980 1160 2980 history1 ▲ 26 ▲ 1281 ▲ 27 history1	<1 0 56 0 958 1124 840 1219 2916 history2 3 7 0
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base	3 1 56 1 893 1165 1073 1242 3697 current 7 8 1 current 0.1	27 0 100 0 881 1032 980 1160 2980 history1 ▲ 26 ▲ 1281 ▲ 27	<1 0 56 0 958 1124 840 1219 2916 history2 3 7 0 history2 0.3
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 225 >25	3 1 56 1 893 1165 1073 1242 3697 current 7 8 1 current	27 0 100 881 1032 980 1160 2980 history1 ▲ 26 ▲ 1281 ▲ 27 history1 0.9	<1 0 56 0 958 1124 840 1219 2916 history2 3 7 0 history2
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 2060 225 20 225 20 20 20 20 20 20 20 20 20 20 20 20 20	3 1 56 1 893 1165 1073 1242 3697 current 7 8 1 current 0.1 5.9 17.7	27 0 100 881 1032 980 1160 2980 history1 ▲ 26 ▲ 1281 ▲ 27 history1 0.9 13.9 24.1	<1 0 56 0 958 1124 840 1219 2916 history2 3 7 0 history2 0.3 6.1 18.5
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 *ASTM D7415	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	3 1 56 1 893 1165 1073 1242 3697 current 7 8 1 current 0.1 5.9 17.7 current	27 0 100 881 1032 980 1160 2980 history1 ▲ 26 ▲ 1281 ▲ 27 history1 0.9 13.9 24.1	<1 0 56 0 958 1124 840 1219 2916 history2 3 7 0 history2 0.3 6.1 18.5 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRAC	ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm ppm ppm ppm ppm ppm ppm pp	ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D7414	0 0 0 1010 1070 1150 1270 2060 imit/base >25 imit/base >4 >20 30 imit/base	3 1 56 1 893 1165 1073 1242 3697 current 7 8 1 current 0.1 5.9 17.7 current 13.9	27 0 100 881 1032 980 1160 2980 history1 ▲ 26 ▲ 1281 ▲ 27 history1 0.9 13.9 24.1 history1	<1 0 56 0 958 1124 840 1219 2916 history2 3 7 0 history2 0.3 6.1 18.5 history2 14.4
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 *ASTM D7415	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	3 1 56 1 893 1165 1073 1242 3697 current 7 8 1 current 0.1 5.9 17.7 current	27 0 100 881 1032 980 1160 2980 history1 ▲ 26 ▲ 1281 ▲ 27 history1 0.9 13.9 24.1	<1 0 56 0 958 1124 840 1219 2916 history2 3 7 0 history2 0.3 6.1 18.5 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	13.8	14.6	14.1
GRAPHS						

Ferrous Alloys

lead

60

50

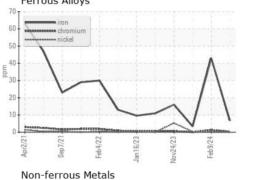
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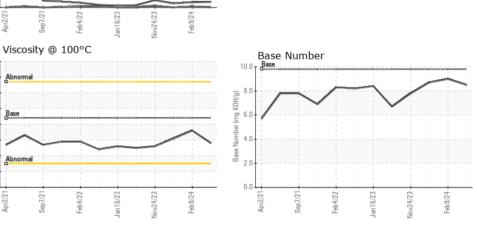
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Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513 GFL Environmental - 415 - Michigan East 6200 Elmridge Sample No. : GFL0117590 Received : 22 Apr 2024 Lab Number : 06155747 Tested : 23 Apr 2024 Sterling Heights, MI US 48313 Unique Number : 10991170 Diagnosed : 23 Apr 2024 - Wes Davis Test Package : FLEET Contact: Frank Wolak Certificate 12367 To discuss this sample report, contact Customer Service at 1-800-237-1369. fwolak@gflenv.com T: (586)825-9514 * - 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) F:

Report Id: GFL415 [WUSCAR] 06155747 (Generated: 04/23/2024 11:40:12) Rev: 1

Submitted By: Frank Wolak

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