

OIL ANALYSIS REPORT

Sample Rating Trend



Machine Id 727091-310016

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 INFORI	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0117808	GFL0104001	GFL0103980
Sample Date		Client Info		23 May 2024	08 Feb 2024	08 Feb 2024
Machine Age	mls	Client Info		204995	15746	15963
Oil Age	mls	Client Info		0	0	15963
Oil Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	ABNORMAL
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	14	26	12
Chromium	ppm	ASTM D5185m	>20	<1	<1	<1
Nickel	ppm	ASTM D5185m	>4	0	0	0
Titanium	ppm	ASTM D5185m		0	0	0
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>20	3	2	4
Lead	ppm	ASTM D5185m	>40	0	0	0
Copper	ppm	ASTM D5185m	>330	<1	1	<1
Tin	ppm	ASTM D5185m	>15	0	0	0
Vanadium	ppm	ASTM D5185m		0	0	0
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base 0	current 0	history1 24	history2 16
	ppm ppm	ASTM D5185m				
Boron		ASTM D5185m	0	0	24	16
Boron Barium	ppm	ASTM D5185m ASTM D5185m	0	0 0	24 0	16 0
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	0 0 63	24 0 47	16 0 60
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	0 0 63 <1	24 0 47 0	16 0 60 0
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	0 0 63 <1 1016	24 0 47 0 698	16 0 60 0 849 1226 1022
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 0 63 <1 1016 1169	24 0 47 0 698 734 1088 914	16 0 60 0 849 1226
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	0 0 60 0 1010 1070 1150	0 0 63 <1 1016 1169 1124	24 0 47 0 698 734 1088	16 0 60 0 849 1226 1022
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 0 63 <1 1016 1169 1124 1329	24 0 47 0 698 734 1088 914	16 0 60 0 849 1226 1022 1192 2927 history2
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	0 0 60 0 1010 1070 1150 1270 2060	0 0 63 <1 1016 1169 1124 1329 3612 current 0	24 0 47 0 698 734 1088 914 3349 history1 11	16 0 60 0 849 1226 1022 1192 2927 history2 5
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	0 0 60 1010 1070 1150 1270 2060	0 0 63 <1 1016 1169 1124 1329 3612 current	24 0 47 0 698 734 1088 914 3349 history1	16 0 60 0 849 1226 1022 1192 2927 history2 5 5 ▲ 119
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 ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 Jimit/base >25	0 0 63 <1 1016 1169 1124 1329 3612 current 0	24 0 47 0 698 734 1088 914 3349 history1 11	16 0 60 0 849 1226 1022 1192 2927 history2 5
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	0 0 0 1010 1070 1150 1270 2060 limit/base	0 0 63 <1 1016 1169 1124 1329 3612 current 0 26 6 current	24 0 47 0 698 734 1088 914 3349 history1 11 18 6 kistory1	16 0 60 0 849 1226 1022 1192 2927 history2 5 5 ▲ 119
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 Jimit/base >25	0 0 63 <1 1016 1169 1124 1329 3612 <i>current</i> 0 26 6 <i>current</i>	24 0 47 0 698 734 1088 914 3349 history1 11 18 6 history1 0.6	16 0 60 0 849 1226 1022 1192 2927 history2 5 5 119 5 5 119 5 history2 0.2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 Imit/base >25	0 0 63 <1 1016 1169 1124 1329 3612 <i>current</i> 0 26 6 <i>current</i> 0.5 9.7	24 0 47 0 698 734 1088 914 3349 history1 11 18 6 kistory1	16 0 60 0 849 1226 1022 1192 2927 history2 5 5 119 5 5 119 5 <i>h</i> 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 0 63 <1 1016 1169 1124 1329 3612 <i>current</i> 0 26 6 <i>current</i>	24 0 47 0 698 734 1088 914 3349 history1 11 18 6 history1 0.6	16 0 60 0 849 1226 1022 1192 2927 history2 5 5 119 5 5 119 5 history2 0.2
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 TS ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 <i>imit/base</i> >25 >20 <i>imit/base</i> >3 >20	0 0 63 <1 1016 1169 1124 1329 3612 <i>current</i> 0 26 6 <i>current</i> 0.5 9.7	24 0 47 0 698 734 1088 914 3349 history1 11 18 6 history1 0.6 8.6	16 0 60 0 849 1226 1022 1192 2927 history2 5 5 ▲ 119 5 × 119 5 × 119 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 TS ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 imit/base >25 imit/base >3 >20	0 0 63 <1 1016 1169 1124 1329 3612 <i>current</i> 0 26 6 6 <i>current</i> 0.5 9.7 20.9	24 0 47 0 698 734 1088 914 3349 history1 11 18 6 <u>history1</u> 0.6 8.6 39.5	16 0 60 0 849 1226 1022 1192 2927 history2 5 ▲ 119 5 bistory2 0.2 7.7 18.7



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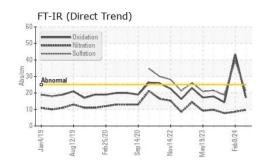
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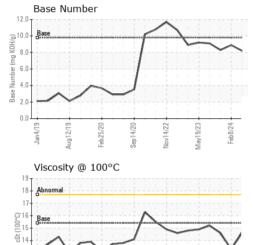
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OIL ANALYSIS REPORT

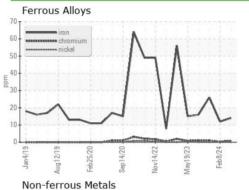


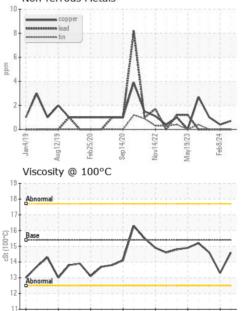


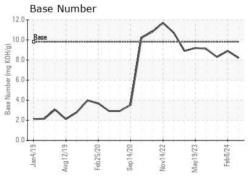
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	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
		method	IIIIII/Dase	current	mistory	TIIStOLYZ
Visc @ 100°C	cSt	ASTM D445	15.4	14.6	13.3	14.6

GRAPHS

Feb 8/24







Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513 GFL Environmental - 865 - East Mount Hauling Sample No. : GFL0117808 Received : 04 Jun 2024 7213 East Mount Houston Road Lab Number : 06198800 Tested : 05 Jun 2024 Houston, TX US 77050 Unique Number : 11060923 Diagnosed : 05 Jun 2024 - Wes Davis Test Package : FLEET Contact: Saul Castillo Certificate 12367 To discuss this sample report, contact Customer Service at 1-800-237-1369. saul.castillo@gflenv.com * - Denotes test methods that are outside of the ISO 17025 scope of accreditation. T: F:

Sep 14/20

Vov14/22

Mav19/23

Aug12/19

Feb25/20

Jan4/19

Feb8/24.

Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

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Submitted By: TECHNICIAN ACCOUNT