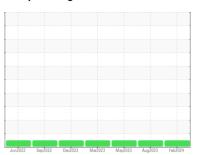


OIL ANALYSIS REPORT

Sample Rating Trend







Machine Id 428079 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

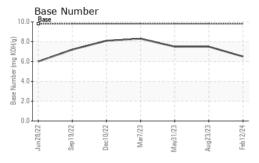
Fluid Condition

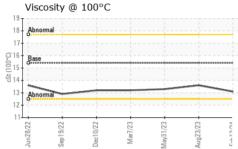
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0106127	GFL0078658	GFL0082021
Sample Date		Client Info		12 Feb 2024	23 Aug 2023	31 May 2023
Machine Age	hrs	Client Info		14800	13759	13365
Oil Age	hrs	Client Info		600	394	600
Oil Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	NORMAL
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
Glycol		WC Method		NEG	NEG	NEG
WEAR METAL	_S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>120	4	8	4
Chromium	ppm	ASTM D5185m	>20	<1	<1	0
Nickel	ppm	ASTM D5185m	>5	1	0	0
Titanium	ppm	ASTM D5185m	>2	<1	0	0
Silver	ppm	ASTM D5185m	>2	<1	<1	0
Aluminum	ppm	ASTM D5185m	>20	2	3	0
Lead	ppm	ASTM D5185m	>40	1	<1	<1
Copper	ppm	ASTM D5185m	>330	2	<1	1
Tin	ppm	ASTM D5185m	>15	<1	<1	<1
Vanadium	ppm	ASTM D5185m		<1	0	0
Cadmium	ppm	ASTM D5185m		<1	0	0
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base	current 9	history1	history2
	ppm		0		,	•
Boron		ASTM D5185m	0	9	8	11
Boron Barium	ppm	ASTM D5185m ASTM D5185m	0 0 60	9	8	11
Boron Barium Molybdenum	ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	9 0 63	8 0 64	11 0 66
Boron Barium Molybdenum Manganese	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	9 0 63 <1	8 0 64 <1	11 0 66 0
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	9 0 63 <1 944	8 0 64 <1 979	11 0 66 0 819
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150	9 0 63 <1 944 1092	8 0 64 <1 979 1138	11 0 66 0 819 1126
Boron Barium Molybdenum Manganese Magnesium Calcium	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	9 0 63 <1 944 1092 936	8 0 64 <1 979 1138 1060	11 0 66 0 819 1126 974
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	0 0 60 0 1010 1070 1150 1270	9 0 63 <1 944 1092 936 1216	8 0 64 <1 979 1138 1060 1332	11 0 66 0 819 1126 974 1163
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	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	9 0 63 <1 944 1092 936 1216 3352	8 0 64 <1 979 1138 1060 1332 3859 history1	11 0 66 0 819 1126 974 1163 3117
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	9 0 63 <1 944 1092 936 1216 3352 current	8 0 64 <1 979 1138 1060 1332 3859 history1 5	11 0 66 0 819 1126 974 1163 3117 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base	9 0 63 <1 944 1092 936 1216 3352 current	8 0 64 <1 979 1138 1060 1332 3859 history1	11 0 66 0 819 1126 974 1163 3117 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base	9 0 63 <1 944 1092 936 1216 3352 current 5	8 0 64 <1 979 1138 1060 1332 3859 history1 5	11 0 66 0 819 1126 974 1163 3117 history2 2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25	9 0 63 <1 944 1092 936 1216 3352 current 5 0 3	8 0 64 <1 979 1138 1060 1332 3859 history1 5 3 2	11 0 66 0 819 1126 974 1163 3117 history2 2 0
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base	9 0 63 <1 944 1092 936 1216 3352 current 5 0 3	8 0 64 <1 979 1138 1060 1332 3859 history1 5 3 2	11 0 66 0 819 1126 974 1163 3117 history2 2 0 3
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm	ASTM D5185m method *ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base	9 0 63 <1 944 1092 936 1216 3352 current 5 0 3	8 0 64 <1 979 1138 1060 1332 3859 history1 5 3 2 history1 0.2	11 0 66 0 819 1126 974 1163 3117 history2 2 0 3 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm	ASTM D5185m method *ASTM D5185m *ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m *ASTM D5185m *ASTM D7844 *ASTM D7624 *ASTM D76185m	0 0 0 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base	9 0 63 <1 944 1092 936 1216 3352 current 5 0 3 current 0.3 8.5	8 0 64 <1 979 1138 1060 1332 3859 history1 5 3 2 history1 0.2 7.4	11 0 66 0 819 1126 974 1163 3117 history2 2 0 3 history2 0.2 8.0
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm	ASTM D5185m method *ASTM D5185m *ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m *ASTM D5185m *ASTM D7844 *ASTM D7624 *ASTM D76185m	0 0 0 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base >4 >20 >30	9 0 63 <1 944 1092 936 1216 3352 current 5 0 3 current 0.3 8.5 22.4	8 0 64 <1 979 1138 1060 1332 3859 history1 5 3 2 history1 0.2 7.4 17.7	11 0 66 0 819 1126 974 1163 3117 history2 2 0 3 history2 0.2 8.0 18.9
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRA	ppm	ASTM D5185m Method *ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m Method *ASTM D7624 *ASTM D7624 *ASTM D7415 Method	0 0 0 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base >30 limit/base >25	9 0 63 <1 944 1092 936 1216 3352 current 5 0 3 current 0.3 8.5 22.4 current	8 0 64 <1 979 1138 1060 1332 3859 history1 5 3 2 history1 0.2 7.4 17.7 history1	11 0 66 0 819 1126 974 1163 3117 history2 2 0 3 history2 0.2 8.0 18.9 history2



OIL ANALYSIS REPORT

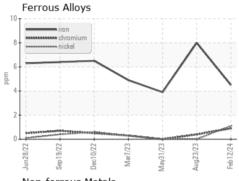


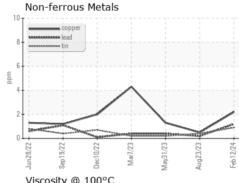


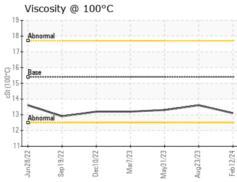
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual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

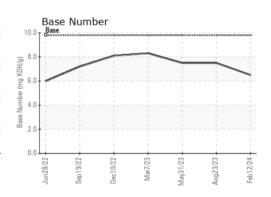
FLUID PROPE	RTIES	method				history2
Visc @ 100°C	cSt	ASTM D445	15.4	13.1	13.6	13.3

GRAPHS













Laboratory

Sample No.

Test Package : FLEET

: GFL0106127 Lab Number : 06092244 Unique Number: 10885097

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Received : 16 Feb 2024 **Tested**

: 19 Feb 2024 Diagnosed

: 19 Feb 2024 - Wes Davis

GFL Environmental - 152 - Jacksonville

7580 PHILIPS HWY Jacksonville, FL US 32256

T: (904)252-0013

Contact: Chris Smith chris.smith@gflenv.com

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)

Report Id: GFL152 [WUSCAR] 06092244 (Generated: 02/19/2024 11:44:18) Rev: 1

Submitted By: Eric Thomas