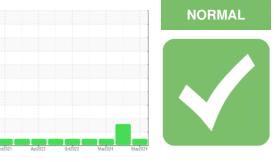


OIL ANALYSIS REPORT

Sample Rating Trend





Machine Id 828061 Component

Diesel Engine

PETRO CANADA DURON SHP 15W40 (--- LTR)

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.

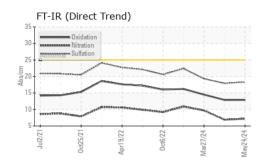
Fluid Condition

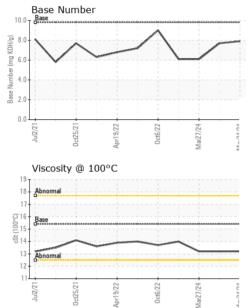
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

		methou	iiiiii/base	Current	TIIStOLA	THSTOLYZ
Sample Number		Client Info		GFL0113942	GFL0113933	GFL0113918
Sample Date		Client Info		24 May 2024	20 May 2024	27 Mar 2024
Machine Age	hrs	Client Info		10005	9974	9683
Oil Age	hrs	Client Info		9683	9683	9683
Oil Changed		Client Info		Changed	Not Changd	Changed
Sample Status				NORMAL	ABNORMAL	NORMAL
-			11 1.0			
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	10	12	19
Chromium	ppm	ASTM D5185m	>20	<1	<1	0
Nickel	ppm	ASTM D5185m	>5	0	<1	0
Titanium	ppm	ASTM D5185m		0	<1	0
Silver	ppm	ASTM D5185m	>2	۰ <1	<1	0
Aluminum	ppm	ASTM D5185m	>20	2	2	2
Lead		ASTM D5185m	>40	- <1	<1	0
	ppm	ASTM D5185m	>330	<1	2	<1
Copper Tin	ppm		>330		<1	0
Vanadium	ppm		>10	0		0
Cadmium	ppm	ASTM D5185m		0	<1	
	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm		limit/base 0	current 12	16	8
	ppm ppm					
Boron		ASTM D5185m	0	12	16	8
Boron Barium	ppm	ASTM D5185m ASTM D5185m	0	12 0	16 0	8 0
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	12 0 60	16 0 58	8 0 60 0 943
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	12 0 60 <1	16 0 58 <1	8 0 60 0
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	12 0 60 <1 954	16 0 58 <1 834	8 0 60 0 943
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	12 0 60 <1 954 1224	16 0 58 <1 834 1085	8 0 60 0 943 1115
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	12 0 60 <1 954 1224 1105	16 0 58 <1 834 1085 958	8 0 60 0 943 1115 1017
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	12 0 60 <1 954 1224 1105 1401	16 0 58 <1 834 1085 958 1218	8 0 60 943 1115 1017 1237
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	0 0 60 1010 1070 1150 1270 2060	12 0 60 <1 954 1224 1105 1401 3952	16 0 58 <1 834 1085 958 1218 3311 history1	8 0 60 943 1115 1017 1237 3565
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	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 60 0 1010 1070 1150 1270 2060	12 0 60 <1 954 1224 1105 1401 3952 current 4	16 0 58 <1 834 1085 958 1218 3311	8 0 60 943 1115 1017 1237 3565 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm 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	12 0 60 <1 954 1224 1105 1401 3952 current	16 0 58 <1 834 1085 958 1218 3311 history1 ▲ 52	8 0 60 943 1115 1017 1237 3565 history2 4
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 method ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 kimit/base >25	12 0 60 <1 954 1224 1105 1401 3952 current 4 <1 1	16 0 58 <1 834 1085 958 1218 3311 history1 ▲ 52 6	8 0 60 943 1115 1017 1237 3565 history2 4 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	12 0 60 <1 954 1224 1105 1401 3952 current 4 <1 1 1	16 0 58 <1 834 1085 958 1218 3311 history1 ↓ 52 6 7 7 history1	8 0 60 943 1115 1017 1237 3565 history2 4 3 1 1 history2
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 ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base	12 0 60 <1 954 1224 1105 1401 3952 current 4 <1 1 current 0.8	16 0 58 <1 834 1085 958 1218 3311 history1 52 6 7 52 6 7 7 history1 0.7	8 0 60 943 1115 1017 1237 3565 history2 4 3 1 history2 1.2
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 2060 225 225 220 220 1imit/base >22 20	12 0 60 <1 954 1224 1105 1401 3952 current 4 <1 1 current 0.8 7.2	16 0 58 <1 834 1085 958 1218 3311 history1 ▲ 52 6 7 52 6 7 history1 0.7 6.9	8 0 60 943 1115 1017 1237 3565 history2 4 3 1 1 history2 1.2 9.7
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 t ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 imit/base >25 imit/base >4 >20	12 0 60 <1 954 1224 1105 1401 3952 <u>current</u> 4 <1 1 1 <u>current</u> 0.8 7.2 18.3	 16 0 58 <1 834 1085 958 1218 3311 history1 52 6 7 history1 0.7 6.9 17.9 	8 0 60 943 1115 1017 1237 3565 history2 4 3 1 history2 1.2 9.7 19.3
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 t ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 225 220 220 220 20 20 20 20 20 20 20 20 20	12 0 60 <1 954 1224 1105 1401 3952 current 4 <1 1 current 0.8 7.2	16 0 58 <1 834 1085 958 1218 3311 history1 ▲ 52 6 7 52 6 7 history1 0.7 6.9	8 0 60 943 1115 1017 1237 3565 history2 4 3 1 1 history2 1.2 9.7
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 t ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 imit/base >25 imit/base >4 >20 >30	12 0 60 <1 954 1224 1105 1401 3952 <u>current</u> 4 <1 1 1 <u>current</u> 0.8 7.2 18.3	 16 0 58 <1 834 1085 958 1218 3311 history1 52 6 7 history1 0.7 6.9 17.9 	8 0 60 943 1115 1017 1237 3565 history2 4 3 1 history2 1.2 9.7 19.3
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 TS ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7844	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	12 0 60 <1 954 1224 1105 1401 3952 current 4 <1 1 current 0.8 7.2 18.3 current	16 0 58 <1 834 1085 958 1218 3311 ▲ 52 6 7 ★ 52 6 7 ► 52 6 7 ► 52 6 3 7 ► 52 6 3 7 • history1 0.7 6.9 17.9	8 0 60 943 1115 1017 1237 3565 history2 4 3 1 1 history2 1.2 9.7 19.3 history2



OIL ANALYSIS REPORT





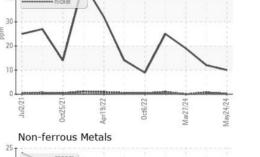
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	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	13.2	13.2	13.2
GRAPHS						

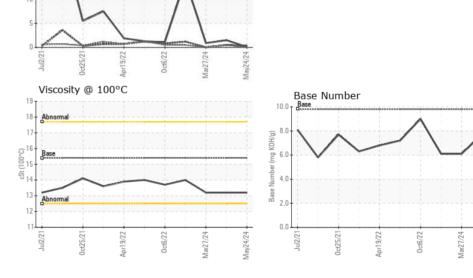
Ferrous Alloys

50

41

20





Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513 GFL Environmental - 029 - Wytheville Sample No. : GFL0113942 Received : 28 May 2024 2390 North 4th Street Lab Number : 06193251 Tested : 30 May 2024 Wytheville, VA Unique Number : 11050003 Diagnosed : 30 May 2024 - Wes Davis US 24382 Test Package : FLEET Contact: CHARLES CORVIN Certificate 12367 To discuss this sample report, contact Customer Service at 1-800-237-1369. charles.corvin@gflenv.com;canastasio@wearcheckusa.com * - Denotes test methods that are outside of the ISO 17025 scope of accreditation. T: (276)223-4476 Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012) F: (276)223-1283

Report Id: GFL029 [WUSCAR] 06193251 (Generated: 05/30/2024 08:53:27) Rev: 1

Submitted By: CHARLES CORVIN

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May24/24