

OIL ANALYSIS REPORT

Sample Rating Trend





MONTGOMERY Machine Id MACK 913008

Component

Diesel Engine

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

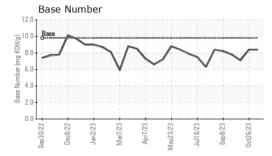
Fluid Condition

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	MATIO <u>N</u>	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0092400	GFL0092398	GFL0092379
Sample Date		Client Info		31 Oct 2023	26 Oct 2023	10 Oct 2023
Machine Age	hrs	Client Info		3563	3552	3416
Oil Age	hrs	Client Info		147	0	3416
Oil Changed		Client Info		Not Changd	Not Changd	Changed
Sample Status				NORMAL		NORMAL
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>3.0	<1.0	<1.0	<1.0
Glycol		WC Method		NEG	NEG	NEG
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>120	5	6	13
Chromium	ppm	ASTM D5185m	>20	<1	<1	<1
Nickel	ppm	ASTM D5185m	>5	<1	<1	<1
Titanium	ppm	ASTM D5185m	>2	<1	<1	<1
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>20	2	4	2
Lead	ppm	ASTM D5185m	>40	0	0	0
Copper	ppm	ASTM D5185m	>330	1	2	7
Tin	ppm	ASTM D5185m	>15	<1	<1	<1
Vanadium	ppm	ASTM D5185m		<1	<1	<1
Cadmium	ppm	ASTM D5185m		<1	<1	0
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base	current 2	history1	history2
	ppm					
Boron		ASTM D5185m	0	2	4	1
Boron Barium	ppm	ASTM D5185m ASTM D5185m	0	2 <1	4 <1	1
Boron Barium Molybdenum	ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	2 <1 64	4 <1 85	1 0 63
Boron Barium Molybdenum Manganese	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	2 <1 64 0	4 <1 85 0	1 0 63 <1
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	2 <1 64 0 954	4 <1 85 0 • 1291	1 0 63 <1 953
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070	2 <1 64 0 954 1064	4 <1 85 0 ▲ 1291 1365 1351 ▲ 1637	1 0 63 <1 953 1052
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	0 0 60 0 1010 1070 1150	2 <1 64 0 954 1064 1032	4 <1 85 0 ▲ 1291 1365 1351	1 0 63 <1 953 1052 979
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	2 <1 64 0 954 1064 1032 1235 3454 current	4 <1 85 0 ▲ 1291 1365 1351 ▲ 1637 4634 history1	1 0 63 <1 953 1052 979 1168 2665
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060	2 <1 64 0 954 1064 1032 1235 3454 current 5	4 <1 85 0 ▲ 1291 1365 1351 ▲ 1637 4634 history1 7	1 0 63 <1 953 1052 979 1168 2665 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	2 <1 64 0 954 1064 1032 1235 3454 current 5 4	4 <1 85 0 ▲ 1291 1365 1351 ▲ 1637 4634 history1 7 6	1 0 63 <1 953 1052 979 1168 2665 history2 8 7
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base	2 <1 64 0 954 1064 1032 1235 3454 current 5	4 <1 85 0 ▲ 1291 1365 1351 ▲ 1637 4634 history1 7	1 0 63 <1 953 1052 979 1168 2665 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	2 <1 64 0 954 1064 1032 1235 3454 current 5 4 3 current	4 <1 85 0 ▲ 1291 1365 1351 ▲ 1637 4634 history1 7 6	1 0 63 <1 953 1052 979 1168 2665 history2 8 7
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	0 0 0 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base	2 <1 64 0 954 1064 1032 1235 3454 current 5 4 3 current 0.2	4 <1 85 0 ▲ 1291 1365 1351 ▲ 1637 4634 history1 7 6 3 history1 0.2	1 0 63 <1 953 1052 979 1168 2665 history2 8 7 0 history2
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	0 0 0 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base	2 <1 64 0 954 1064 1032 1235 3454 current 5 4 3 current	4 <1 85 0 ▲ 1291 1365 1351 ▲ 1637 4634 history1 7 6 3	1 0 63 <1 953 1052 979 1168 2665 history2 8 7 0 history2 0.5 8.6
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	0 0 0 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base	2 <1 64 0 954 1064 1032 1235 3454 current 5 4 3 current 0.2	4 <1 85 0 ▲ 1291 1365 1351 ▲ 1637 4634 history1 7 6 3 history1 0.2	1 0 63 <1 953 1052 979 1168 2665 history2 8 7 0 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	0 0 60 0 1010 1150 1270 2060 limit/base >25 >20 limit/base	2 <1 64 0 954 1064 1032 1235 3454 current 5 4 3 current 0.2 6.4	4 <1 85 0 ▲ 1291 1365 1351 ▲ 1637 4634 history1 7 6 3 history1 0.2 6.3	1 0 63 <1 953 1052 979 1168 2665 history2 8 7 0 history2 0.5
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 D7844 *ASTM D7624 *ASTM D7415	0 0 0 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base >4 >20 >30	2 <1 64 0 954 1064 1032 1235 3454 current 5 4 3 current 0.2 6.4 18.8	4 <1 85 0 ▲ 1291 1365 1351 ▲ 1637 4634 history1 7 6 3 history1 0.2 6.3 18.6	1 0 63 <1 953 1052 979 1168 2665 history2 8 7 0 history2 0.5 8.6 20.6



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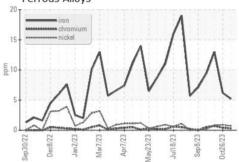
20 18 Abno	rmal							
16 - Base		-						
Abno	rmal	~		_			-	
Abno								
8	/							
6- 🗸								
4 22	22 -	23	23	23	23	23	23	-
Sep30/2	Dec8/2	Jan2/	Mar7/	Apr7/	May23/	Jul18/	Sep8/2	1

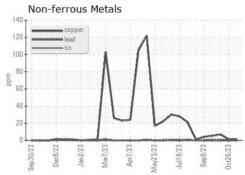
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual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

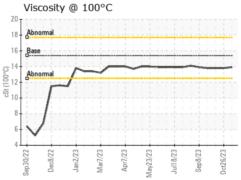
FLUID PROPE	RHES	method			history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	13.9	13.8	13.8

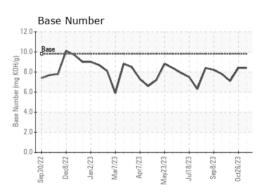
GRAPHS

Ferrous Alloys













Certificate L2367

Laboratory Sample No.

Lab Number Unique Number : 10723755 Test Package : FLEET

: GFL0092400 : 05995395

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Received : 01 Nov 2023 Diagnosed : 02 Nov 2023

Diagnostician : Wes Davis

GFL Environmental - 955 - Montgomery

1121 Wilbanks St Montgomery, AL US 36108

Contact: LISA REEVES

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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