

OIL ANALYSIS REPORT

Sample Rating Trend

.....

GLYCOL

Machine Id

2443 MACK CV713

Component Diesel Engine Fluid PETRO CANADA DURON SHP 15W40 (48 QTS)

DIAGNOSIS

Recommendation

We advise that you check for the source of the coolant leak. Check for low coolant level. We recommend an early resample to monitor this condition.

Wear

All component wear rates are normal.

Contamination

Sodium and/or potassium levels are high.

Fluid Condition

The BN result indicates that there is suitable alkalinity remaining in the oil.

SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0109702	GFL0117405	GFL0117478
Sample Date		Client Info		20 Jun 2024	13 Jun 2024	17 Apr 2024
Machine Age	hrs	Client Info		0	44701	44374
Oil Age	hrs	Client Info		0	0	0
Oil Changed		Client Info		N/A	Not Changd	Not Changd
Sample Status				ABNORMAL	NORMAL	ABNORMAL
CONTAMINAT	ON	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
WEAR METALS	S	method	limit/base	current	history1	history2
Iron	nnm	ASTM D5185m	120	23	30	58
Chromium	ppm	ASTM D5185m	>20	25 ~1	<1	2
Nickel	ppm	ASTM D5185m	>5	0	<1	<1
Titanium	ppm	ASTM D5185m	>2	0	<1	<1
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	mag	ASTM D5185m	>20	2	2	3
Lead	ppm	ASTM D5185m	>40	15	2	3
Copper	ppm	ASTM D5185m	>330	18	5	14
Tin	ppm	ASTM D5185m	>15	0	1	2
Vanadium	ppm	ASTM D5185m		<1	0	<1
Cadmium	ppm	ASTM D5185m		0	0	<1
		mathad	limit/bass		la la tament	history?
ADDITIVEO		method	iiiiii/base	current	nistory i	Thistory2
Boron	ppm	ASTM D5185m	0	current 14	4	1 1
Boron Barium	ppm ppm	ASTM D5185m ASTM D5185m	0 0	14 0	4 0	1 0
Boron Barium Molybdenum	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	14 0 63	4 0 55	1 0 59
Boron Barium Molybdenum Manganese	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	current 14 0 63 <1	4 0 55 0	1 0 59 <1
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	Current 14 0 63 <1 651	4 0 55 0 820	1 0 59 <1 893
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	Current 14 0 63 <1 651 1565	4 0 55 0 820 1068	1 0 59 <1 893 1063
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 ASTM D5185m	0 0 60 0 1010 1070 1150	Current 14 0 63 <1 651 1565 867	4 0 55 0 820 1068 832	1 0 59 <1 893 1063 1060
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	14 0 63 <1 651 1565 867 1049	4 0 55 0 820 1068 832 1115	1 0 59 <1 893 1063 1060 1204
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	0 0 60 0 1010 1070 1150 1270 2060	14 0 63 <1 651 1565 867 1049 2901	4 0 55 0 820 1068 832 1115 2961	1 0 59 <1 893 1063 1060 1204 3301
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm 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 limit/base	Current 14 0 63 <1 651 1565 867 1049 2901 Current	4 0 55 0 820 1068 832 1115 2961 history1	1 0 59 <1 893 1063 1060 1204 3301 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm 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 limit/base >25	14 0 63 <1 651 1565 867 1049 2901 current 12	4 0 55 0 820 1068 832 1115 2961 history1 4	1 0 59 <1 893 1063 1060 1204 3301 history2 7
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25	14 0 63 <1 651 1565 867 1049 2901 current 12 ▲ 251	4 0 55 0 820 1068 832 1115 2961 history1 4 <	1 0 59 <1 893 1063 1060 1204 3301 history2 7 2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20	Current 14 0 63 <1 651 1565 867 1049 2901 Current 12 ▲ 251 15	4 0 55 0 820 1068 832 1115 2961 history1 4 <1 2	1 0 59 <1 893 1063 1060 1204 3301 history2 7 2 2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Glycol	ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm %	ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20	Current 14 0 63 <1 651 1565 867 1049 2901 Current 12 ▲ 251 15 NEG	4 0 55 0 820 1068 832 1115 2961 history1 4 <1 2 NEG	1 0 59 <1 893 1063 1060 1204 3301 history2 7 2 2 NEG
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Glycol INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m *ASTM D2982	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base	Current 14 0 63 <1 651 1565 867 1049 2901 current 12 251 15 NEG current	4 0 55 0 820 1068 832 1115 2961 history1 4 <1 2 NEG history1	1 0 59 <1 893 1063 1060 1204 3301 history2 7 2 2 NEG history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Glycol INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base >20	Current 14 0 63 <1 651 1565 867 1049 2901 current 12 251 15 NEG current 2.3	4 0 55 0 820 1068 832 1115 2961 history1 4 <1 2 NEG history1 3.2	1 0 59 <1 893 1063 1060 1204 3301 history2 7 2 NEG history2 ▲ 4.7
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Glycol INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m *ASTM D7848 *ASTM D7844 *ASTM D7624	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base >20	Current 14 0 63 <1 651 1565 867 1049 2901 current 12 ▲ 251 15 NEG current 2.3 10.0	4 0 55 0 820 1068 832 1115 2961 history1 4 <1 2 NEG history1 3.2 8.8	1 0 59 <1 893 1063 1060 1204 3301 history2 7 2 NEG history2 4.7 10.8
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Glycol INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7624 *ASTM D7415	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20 >20 limit/base >4 >20 >30	Current 14 0 63 <1 651 1565 867 1049 2901 current 12 251 15 NEG current 2.3 10.0 23.1	4 0 55 0 820 1068 832 1115 2961 history1 4 <1 2 NEG history1 3.2 8.8 23.9	1 0 59 <1 893 1063 1060 1204 3301 history2 7 2 NEG history2 4.7 10.8 26.3
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Glycol INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m *ASTM D2982 method *ASTM D7844 *ASTM D7624 *ASTM D7415 method	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base >4 >20 >30 limit/base	current 14 0 63 <1 651 1565 867 1049 2901 current 12 ▲ 251 15 NEG current 2.3 10.0 23.1	4 0 55 0 820 1068 832 1115 2961 history1 4 <1 2 NEG history1 3.2 8.8 23.9 history1	1 0 59 <1 893 1063 1060 1204 3301 history2 7 2 NEG history2 ▲ 4.7 10.8 26.3 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Glycol INFRA-RED Soot % Nitration Sulfation FLUID DEGRAE Oxidation	ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm ppm % c Abs/cm Abs/cm Abs/.1mm	Internoor ASTM D5185m *ASTM D5185m *ASTM D7842 *ASTM D7844 *ASTM D7415 method *ASTM D7414	0 0 60 0 1010 1070 1150 1270 2060 Iimit/base >25 20 Iimit/base >4 >20 >30 Iimit/base >25	Current 14 0 63 <1 651 1565 867 1049 2901 current 12 ▲ 251 15 NEG current 2.3 10.0 23.1 current 15.7	4 0 55 0 820 1068 832 1115 2961 history1 4 <1 2 NEG history1 3.2 8.8 23.9 history1 14.5	1 0 59 <1 893 1063 1000 1204 3301 history2 7 2 NEG history2 A.7 10.8 26.3 history2 14.8
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Glycol INFRA-RED Soot % Nitration Sulfation FLUID DEGRAE Oxidation Base Number (BN)	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	Interfinded ASTM D5185m *ASTM D7848 *ASTM D7624 *ASTM D7415 method *ASTM D7414 ASTM D2896	0 0 0 60 0 1010 1070 1150 1270 2060 imit/base >25 	Current 14 0 63 <1 651 1565 867 1049 2901 current 12 251 15 NEG current 2.3 10.0 23.1 current 15.7 9.1	4 0 55 0 820 1068 832 1115 2961 history1 4 <1	1 0 59 <1



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	14.6	14.1	14.3
GRAPHS						

Ferrous Alloys











Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513 GFL Environmental - 001 - Raleigh(CNG) Sample No. : GFL0109702 Received : 24 Jun 2024 3741 Conquest Drive Lab Number : 06217931 Tested : 25 Jun 2024 Garner, NC Unique Number : 11096128 Diagnosed : 25 Jun 2024 - Jonathan Hester US 27529 Test Package : FLEET (Additional Tests: Glycol) Contact: Ronald Gregory Certificate 12367 To discuss this sample report, contact Customer Service at 1-800-237-1369. rgregory@gflenv.com * - Denotes test methods that are outside of the ISO 17025 scope of accreditation. T: F: (919)662-1730

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

Submitted By: Craig Johnson Page 2 of 2

Report Id: GFL001 [WUSCAR] 06217931 (Generated: 06/25/2024 18:25:33) Rev: 1