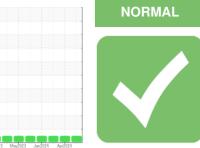


OIL ANALYSIS REPORT

Sample Rating Trend



Area MONTGOMERY **MACK 926066**

Diesel Engine PETRO CANADA DURON SHP 15W40 (--- GAL)

SAMPLE INFORMATION meth

DI	A	Gl	N	0	S	IS	

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		method	limit/base	current	nistory i	nistory∠	
Sample Number		Client Info		GFL0088608	GFL0089944	GFL0083554	
Sample Date		Client Info		20 May 2024	11 Apr 2024	03 Apr 2024	
Machine Age hrs		Client Info		11849 11682		11652	
Oil Age	hrs	Client Info		865	698	668	
Oil Changed		Client Info		Not Changd	N/A	Not Changd	
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	c	method	limit/base	current	history1	history2	
	3						
Iron	ppm	ASTM D5185m	>120	32	23	27	
Chromium	ppm	ASTM D5185m	>20	0	<1	0	
Nickel	ppm	ASTM D5185m	>5	0	<1	0	
Titanium	ppm	ASTM D5185m	>2	<1	<1	0	
Silver	ppm	ASTM D5185m	>2	0	0	0	
Aluminum	ppm	ASTM D5185m	>20	18	8	7	
Lead	ppm	ASTM D5185m	>40	2	2	<1	
Copper	ppm	ASTM D5185m	>330	6	4	3	
Tin	ppm	ASTM D5185m	>15	2	<1	0	
Vanadium	ppm	ASTM D5185m		0	<1	0	
Cadmium	ppm	ASTM D5185m		0	0	0	
ADDITIVES		method	limit/base	current	history1	history2	
ADDITIVES Boron	ppm		limit/base	current 4	history1 0	history2 1	
	ppm ppm	ASTM D5185m					
Boron Barium		ASTM D5185m	0	4	0	1	
Boron	ppm	ASTM D5185m ASTM D5185m	0 0 60	4 0	0	1 0	
Boron Barium Molybdenum Manganese	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	4 0 63	0 0 60	1 0 63	
Boron Barium Molybdenum	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	4 0 63 <1	0 0 60 <1	1 0 63 0 1037	
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	4 0 63 <1 929	0 0 60 <1 937	1 0 63 0	
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070	4 0 63 <1 929 1049	0 0 60 <1 937 1071	1 0 63 0 1037 1169	
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	4 0 63 <1 929 1049 994	0 0 60 <1 937 1071 955	1 0 63 0 1037 1169 1051	
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	4 0 63 <1 929 1049 994 1201	0 0 60 <1 937 1071 955 1196	1 0 63 0 1037 1169 1051 1328	
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	4 0 63 <1 929 1049 994 1201 2874 current	0 0 60 <1 937 1071 955 1196 3081 history1	1 0 63 0 1037 1169 1051 1328 3446 history2	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	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 1010 1070 1150 1270 2060	4 0 63 <1 929 1049 994 1201 2874 <u>current</u> 14	0 0 60 <1 937 1071 955 1196 3081 history1 10	1 0 63 0 1037 1169 1051 1328 3446 history2 9	
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 ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 1010 1070 1150 1270 2060 kimit/base >25	4 0 63 <1 929 1049 994 1201 2874 <u>current</u> 14 25	0 0 60 <1 937 1071 955 1196 3081 history1 10 18	1 0 63 0 1037 1169 1051 1328 3446 history2 9 17	
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	0 0 0 1010 1070 1150 1270 2060 Jimit/base >25	4 0 63 <1 929 1049 994 1201 2874 current 14 25 4	0 0 60 <1 937 1071 955 1196 3081 history1 10 18 11	1 0 63 0 1037 1169 1051 1328 3446 history2 9 17 3	
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	4 0 63 <1 929 1049 994 1201 2874 current 14 25 4 current	0 0 60 <1 937 1071 955 1196 3081 history1 10 18 11 11 history1	1 0 63 0 1037 1169 1051 1328 3446 history2 9 17 3 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	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base	4 0 63 <1 929 1049 994 1201 2874 <i>current</i> 14 25 4 <i>current</i> 1.3	0 0 60 <1 937 1071 955 1196 3081 history1 10 18 11 10 18 11 11 history1 1.1	1 0 63 0 1037 1169 1051 1328 3446 history2 9 17 3 history2 1.1	
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>limit/base</i> >25 >20 <i>limit/base</i> >4 >20	4 0 63 <1 929 1049 994 1201 2874 <i>current</i> 14 25 4 <i>current</i> 1.3 9.6	0 0 60 <1 937 1071 955 1196 3081 history1 10 18 11 10 18 11 11 history1 1.1 9.3	1 0 63 0 1037 1169 1051 1328 3446 history2 9 17 3 history2 1.1 9.8	
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	4 0 63 <1 929 1049 994 1201 2874 <i>current</i> 14 25 4 <i>current</i> 1.3	0 0 60 <1 937 1071 955 1196 3081 history1 10 18 11 10 18 11 11 history1 1.1	1 0 63 0 1037 1169 1051 1328 3446 history2 9 17 3 history2 1.1	
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>limit/base</i> >25 >20 <i>limit/base</i> >4 >20	4 0 63 <1 929 1049 994 1201 2874 <i>current</i> 14 25 4 <i>current</i> 1.3 9.6	0 0 60 <1 937 1071 955 1196 3081 history1 10 18 11 10 18 11 11 history1 1.1 9.3	1 0 63 0 1037 1169 1051 1328 3446 history2 9 17 3 history2 1.1 9.8	
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 >4 >20	4 0 63 <1 929 1049 994 1201 2874 <i>current</i> 14 25 4 <i>current</i> 1.3 9.6 22.3	0 0 60 <1 937 1071 955 1196 3081 history1 10 18 11 10 18 11 11 history1 1.1 9.3 21.2	1 0 63 0 1037 1169 1051 1328 3446 history2 9 17 3 history2 1.1 9.8 21.0	
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 ppm	ASTM D5185m ASTM D7844 *ASTM D7844 *ASTM D7844	0 0 0 1010 1070 1150 1270 2060 2060 225 220 220 220 220 20 20 20 20 20 20 20 20	4 0 63 <1 929 1049 994 1201 2874 <i>current</i> 14 25 4 <i>current</i> 1.3 9.6 22.3 <i>current</i>	0 0 60 <1 937 1071 955 1196 3081 history1 10 18 11 10 18 11 11 history1 1.1 9.3 21.2 history1	1 0 63 0 1037 1169 1051 1328 3446 history2 9 17 3 history2 1.1 9.8 21.0 history2	

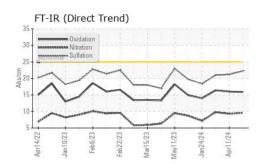


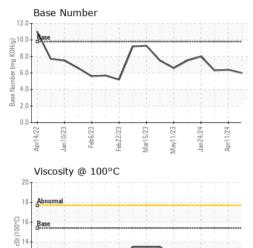
12

Apr14/22

Le

OIL ANALYSIS REPORT





Mar15/23

eb22/23

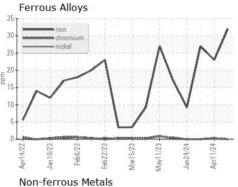
May11/23

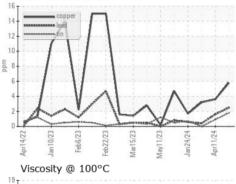
Jan 24/24

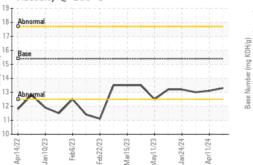
Apr11/24 .

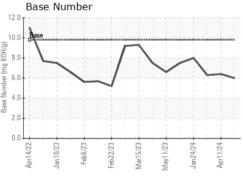
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	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	13.3	13.1	13.0

GRAPHS









Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513 GFL Environmental - 955 - Montgomery Sample No. 1121 Wilbanks St : GFL0088608 Received : 21 May 2024 Lab Number : 06187178 Tested : 23 May 2024 Montgomery, AL US 36108 Unique Number : 11043930 Diagnosed : 23 May 2024 - Sean Felton Test Package : FLEET Contact: LISA REEVES Certificate 12367 To discuss this sample report, contact Customer Service at 1-800-237-1369. T: * - Denotes test methods that are outside of the ISO 17025 scope of accreditation. F:

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

cSt (100°C)

