

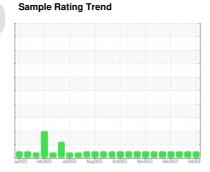
OIL ANALYSIS REPORT



MONTGOMERY **MACK 420042**

Component
Diesel Engine

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





DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

All component wear rates are normal.

Contamination

There is no indication of any contamination in the

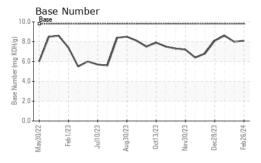
Fluid Condition

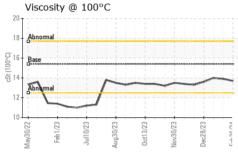
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0088653	GFL0088644	GFL0081860
Sample Date		Client Info		26 Feb 2024	05 Feb 2024	18 Jan 2024
Machine Age	hrs	Client Info		9143	8446	8962
Oil Age	hrs	Client Info		416	8446	235
Oil Changed		Client Info		Not Changd	Not Changd	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	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>120	13	6	8
Chromium	ppm	ASTM D5185m	>20	<1	<1	<1
Nickel	ppm	ASTM D5185m	>5	2	<1	2
Titanium	ppm	ASTM D5185m	>2	<1	0	<1
Silver	ppm	ASTM D5185m	>2	0	<1	<1
Aluminum	ppm	ASTM D5185m	>20	2	1	2
Lead	ppm	ASTM D5185m	>40	<1	0	2
Copper	ppm	ASTM D5185m	>330	10	8	9
Tin	ppm	ASTM D5185m	>15	1	<1	2
Vanadium	ppm	ASTM D5185m		0	0	<1
Cadmium	ppm	ASTM D5185m		0	0	<1
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base	current 4	history1	history2
	ppm	ASTM D5185m				
Boron		ASTM D5185m	0	4	7	7
Boron Barium	ppm	ASTM D5185m ASTM D5185m	0 0 60	4 0	7	7
Boron Barium Molybdenum	ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	4 0 64	7 0 59	7 1 62
Boron Barium Molybdenum Manganese	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	4 0 64 <1	7 0 59 <1	7 1 62 1
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	4 0 64 <1 988	7 0 59 <1 922	7 1 62 1 969
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070	4 0 64 <1 988 1085	7 0 59 <1 922 932	7 1 62 1 969 1009
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	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	4 0 64 <1 988 1085 1018	7 0 59 <1 922 932 1005	7 1 62 1 969 1009 958
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 ASTM D5185m	0 0 60 0 1010 1070 1150	4 0 64 <1 988 1085 1018 1283	7 0 59 <1 922 932 1005 1241	7 1 62 1 969 1009 958 1245
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 ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060	4 0 64 <1 988 1085 1018 1283 3091	7 0 59 <1 922 932 1005 1241 2882	7 1 62 1 969 1009 958 1245 3125
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	4 0 64 <1 988 1085 1018 1283 3091 current	7 0 59 <1 922 932 1005 1241 2882 history1	7 1 62 1 969 1009 958 1245 3125 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060	4 0 64 <1 988 1085 1018 1283 3091 current	7 0 59 <1 922 932 1005 1241 2882 history1	7 1 62 1 969 1009 958 1245 3125 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base	4 0 64 <1 988 1085 1018 1283 3091 current 8 3	7 0 59 <1 922 932 1005 1241 2882 history1 5	7 1 62 1 969 1009 958 1245 3125 history2 5
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	4 0 64 <1 988 1085 1018 1283 3091 current 8 3	7 0 59 <1 922 932 1005 1241 2882 history1 5 2	7 1 62 1 969 1009 958 1245 3125 history2 5 0 2
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 60 0 1010 1070 1150 1270 2060 limit/base >25	4 0 64 <1 988 1085 1018 1283 3091 current 8 3 2	7 0 59 <1 922 932 1005 1241 2882 history1 5 2 0	7 1 62 1 969 1009 958 1245 3125 history2 5 0 2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm	ASTM D5185m Method *ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20	4 0 64 <1 988 1085 1018 1283 3091 current 8 3 2	7 0 59 <1 922 932 1005 1241 2882 history1 5 2 0 history1 0.3	7 1 62 1 969 1009 958 1245 3125 history2 5 0 2 history2 0.2
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 ppm ppm	ASTM D5185m Method ASTM D5185m Method *ASTM D7844 *ASTM D7624 *ASTM D76145	0 0 60 0 1010 1150 1270 2060 limit/base >25 >20 limit/base	4 0 64 <1 988 1085 1018 1283 3091 current 8 3 2 current 0.3 7.1	7 0 59 <1 922 932 1005 1241 2882 history1 5 2 0 history1 0.3 6.8	7 1 62 1 969 1009 958 1245 3125 history2 5 0 2 history2 0.2 5.5
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRAE	ppm	ASTM D5185m Method ASTM D5185m Method *ASTM D7844 *ASTM D7624 *ASTM D76145	0 0 0 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base >4 >20 >30	4 0 64 <1 988 1085 1018 1283 3091 current 8 3 2 current 0.3 7.1 19.1 current	7 0 59 <1 922 932 1005 1241 2882 history1 5 2 0 history1 0.3 6.8 18.9 history1	7 1 62 1 969 1009 958 1245 3125 history2 5 0 2 history2 0.2 5.5 18.2 history2
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 ppm 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 60 0 1010 1150 1270 2060 limit/base >25 >20 limit/base >4 >20 >30 limit/base	4 0 64 <1 988 1085 1018 1283 3091 current 8 3 2 current 0.3 7.1 19.1	7 0 59 <1 922 932 1005 1241 2882 history1 5 2 0 history1 0.3 6.8 18.9	7 1 62 1 969 1009 958 1245 3125 history2 5 0 2 history2 0.2 5.5 18.2



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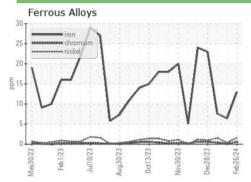


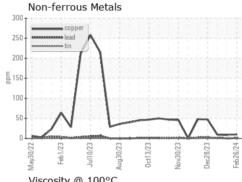


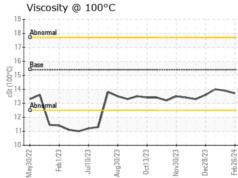
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual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

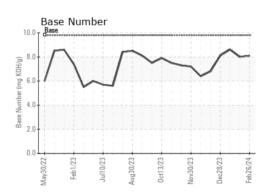
FLUID PROPERTIES		method				history2
Visc @ 100°C	cSt	ASTM D445	15.4	13.7	13.9	14.0

GRAPHS













Certificate L2367

Laboratory Sample No.

: GFL0088653 Lab Number : 06102831 Unique Number : 10901061 Test Package : FLEET

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Received : 28 Feb 2024 **Tested** : 29 Feb 2024

Diagnosed : 29 Feb 2024 - 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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