

OIL ANALYSIS REPORT

Sample Rating Trend

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Component

Diesel Engine

PETRO CANADA DURON SHP 15W40 (10 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.

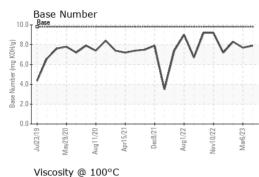
Fluid Condition

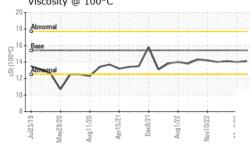
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORM	MATION	method	limit/base	current	history 1	history 2
Sample Number		Client Info		GFL0087799	GFL0062772	GFL0069245
Sample Date		Client Info		06 Jul 2023	06 Mar 2023	10 Jan 2023
Machine Age	hrs	Client Info		13520	12490	12066
Oil Age	hrs	Client Info		585	600	300
Oil Changed		Client Info		Changed	Changed	Not Changd
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINAT	ION	method	limit/base	current	history 1	history 2
Fuel		WC Method	>3.0	<1.0	<1.0	<1.0
Glycol		WC Method		NEG	NEG	NEG
WEAR METAL	S	method	limit/base	current	history 1	history 2
Iron	ppm	ASTM D5185m	>120	8	5	5
Chromium	ppm	ASTM D5185m	>20	<1	<1	0
Nickel	ppm	ASTM D5185m	>5	0	0	0
Titanium	ppm	ASTM D5185m		0	0	0
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m		4	3	1
Lead	ppm	ASTM D5185m	>40	4 <1	<1	<1
Copper	ppm	ASTM D5185m		1	<1	<1
			>330		<1	0
Tin Vanadium	ppm	ASTM D5185m ASTM D5185m	>15	<1	<1	0
	ppm			0		
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history 1	history 2
ADDITIVES Boron	ppm	method ASTM D5185m	0	3	7	12
	ppm ppm		0			
Boron		ASTM D5185m	0	3	7	12
Boron Barium	ppm	ASTM D5185m ASTM D5185m	0 0 60	3 0	7 0	12 0
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	3 0 63	7 0 56	12 0 66
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	3 0 63 <1	7 0 56 <1	12 0 66 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	3 0 63 <1 970	7 0 56 <1 804	12 0 66 0 852
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	3 0 63 <1 970 1180	7 0 56 <1 804 1191	12 0 66 0 852 1266
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	3 0 63 <1 970 1180 1026	7 0 56 <1 804 1191 907	12 0 66 0 852 1266 1070
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	3 0 63 <1 970 1180 1026 1357	7 0 56 <1 804 1191 907 1186	12 0 66 0 852 1266 1070 1277
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	3 0 63 <1 970 1180 1026 1357 3451	7 0 56 <1 804 1191 907 1186 3002	12 0 66 0 852 1266 1070 1277 3200
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	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 1010 1070 1150 1270 2060	3 0 63 <1 970 1180 1026 1357 3451 current	7 0 56 <1 804 1191 907 1186 3002 history 1	12 0 66 0 852 1266 1070 1277 3200 history 2
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 method	0 0 60 1010 1070 1150 1270 2060	3 0 63 <1 970 1180 1026 1357 3451 current 4	7 0 56 <1 804 1191 907 1186 3002 history 1 4	12 0 66 0 852 1266 1070 1277 3200 history 2 6
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	3 0 63 <1 970 1180 1026 1357 3451 current 4 3	7 0 56 <1 804 1191 907 1186 3002 history 1 4 2	12 0 66 0 852 1266 1070 1277 3200 history 2 6 4
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 limit/base >25	3 0 63 <1 970 1180 1026 1357 3451 current 4 3 2 2	7 0 56 <1 804 1191 907 1186 3002 history 1 4 2 <1 kistory 1	12 0 66 0 852 1266 1070 1277 3200 history 2 6 4 2 2 history 2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 Imit/base >25 >20 Imit/base	3 0 63 <1 970 1180 1026 1357 3451 current 4 3 2 2 current 0.6	7 0 56 <1 804 1191 907 1186 3002 history 1 4 2 <1 4 2 <1 history 1 0.4	12 0 66 0 852 1266 1070 1277 3200 history 2 6 4 2 <u>history 2</u> 0.1
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 >20 Imit/base	3 0 63 <1 970 1180 1026 1357 3451 current 4 3 2 2	7 0 56 <1 804 1191 907 1186 3002 history 1 4 2 <1 kistory 1	12 0 66 0 852 1266 1070 1277 3200 history 2 6 4 2 2 history 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 ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 <i>limit/base</i> >25 >20 <i>limit/base</i> >4 >20	3 0 63 <1 970 1180 1026 1357 3451 <i>current</i> 4 3 2 <i>current</i> 0.6 8.7	7 0 56 <1 804 1191 907 1186 3002 history 1 4 2 <1 4 2 <1 history 1 0.4 8.2	12 0 66 0 852 1266 1070 1277 3200 history 2 6 4 2 history 2 0.1 6.4
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 ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 imit/base >25 imit/base >4 >20 >30	3 0 63 <1 970 1180 1026 1357 3451 <i>current</i> 4 3 2 <i>current</i> 0.6 8.7 21.0	7 0 56 <1 804 1191 907 1186 3002 history 1 4 2 <1 4 2 <1 0.4 8.2 19.5	12 0 66 0 852 1266 1070 1277 3200 history 2 6 4 2 2 history 2 0.1 6.4 18.3
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 ppm TS ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7624	0 0 0 1010 1070 1150 1270 2060 2060 2060 225 20 220 20 20 20 20 20 20 20 20 20 20 20	3 0 63 <1 970 1180 1026 1357 3451 <i>current</i> 4 3 2 <i>current</i> 0.6 8.7 21.0 <i>current</i>	7 0 56 <1 804 1191 907 1186 3002 history 1 4 2 <1 4 2 <1 history 1 0.4 8.2 19.5 history 1	12 0 66 0 852 1266 1070 1277 3200 history 2 6 4 2 history 2 0.1 6.4 18.3 history 2



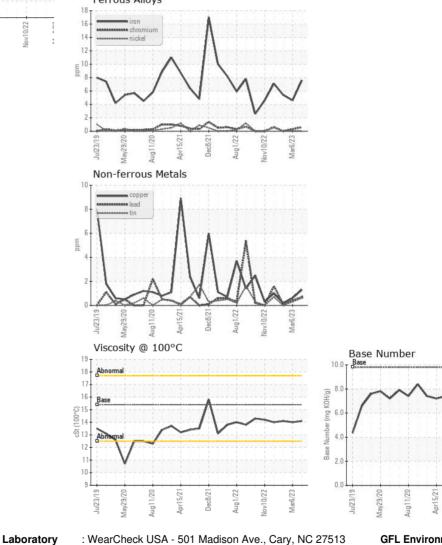
OIL ANALYSIS REPORT





VISUAL		method	limit/base	current	history 1	history 2
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	history 1	history 2
Visc @ 100°C	cSt	ASTM D445	15.4	14.1	14.0	14.1
GRAPHS						

Ferrous Alloys



GFL Environmental - 006 - Wilmington 3618 US Highway 421 N Wilmington, NC US 28401 Contact: Eric Wood eric.wood@gflenv.com T: (717)723-1956 06:2012) F: (910)762-6880

Dec8/21

Aug1/22 -

Nov10/22

Mar6/23



 Certificate 12367
 Test Package
 : FLEET

 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)

Received

Diagnosed

Diagnostician : Wes Davis

: 07 Jul 2023

: 07 Jul 2023

: GFL0087799

: 05892074

Sample No.

Lab Number

Unique Number : 10547884

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