

OIL ANALYSIS REPORT

Sample Rating Trend

NORMAL

Machine Id 920093-260372

Component Diesel Engine

Fluid 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.

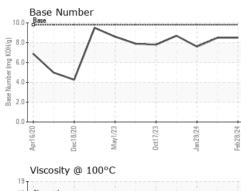
Fluid Condition

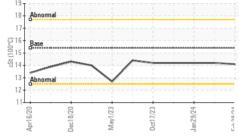
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0114103	GFL0108062	GFL0108124
Sample Date		Client Info		28 Feb 2024	23 Feb 2024	29 Jan 2024
Machine Age	hrs	Client Info		9250	9223	9075
Oil Age	hrs	Client Info		8709	8534	0
Oil Changed		Client Info		Changed	Not Changd	Not Changd
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<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	>100	16	15	12
Chromium	ppm	ASTM D5185m	>20	<1	<1	<1
Nickel	ppm	ASTM D5185m	>4	0	0	<1
Titanium	ppm	ASTM D5185m		0	0	<1
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>20	2	2	2
Lead	ppm	ASTM D5185m	>40	0	0	<1
Copper	ppm	ASTM D5185m	>330	<1	<1	<1
Tin	ppm	ASTM D5185m	>15	0	0	<1
Vanadium	ppm	ASTM D5185m		0	0	0
Cadmium	ppm	ASTM D5185m		0	0	<1
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base 0	current 0	history1 5	history2 <1
	ppm ppm	ASTM D5185m				
Boron		ASTM D5185m	0	0	5	<1
Boron Barium	ppm	ASTM D5185m ASTM D5185m	0 0 60	0 0	5 0	<1 13
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	0 0 58	5 0 59	<1 13 61
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	0 0 58 <1	5 0 59 <1	<1 13 61 <1
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	0 0 58 <1 1085	5 0 59 <1 1098	<1 13 61 <1 909
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	0 0 58 <1 1085 1177	5 0 59 <1 1098 1194	<1 13 61 <1 909 1065
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	0 0 58 <1 1085 1177 1135	5 0 59 <1 1098 1194 1153	<1 13 61 <1 909 1065 964
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	0 0 58 <1 1085 1177 1135 1366	5 0 59 <1 1098 1194 1153 1387	<1 13 61 <1 909 1065 964 1201
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	0 0 60 1010 1070 1150 1270 2060	0 0 58 <1 1085 1177 1135 1366 3343	5 0 59 <1 1098 1194 1153 1387 3423	<1 13 61 <1 909 1065 964 1201 3345
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 ASTM D5185m	0 0 60 1010 1070 1150 1270 2060	0 0 58 <1 1085 1177 1135 1366 3343 current	5 0 59 <1 1098 1194 1153 1387 3423 history1	<1 13 61 <1 909 1065 964 1201 3345 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 method	0 0 60 1010 1070 1150 1270 2060 limit/base >25	0 0 58 <1 1085 1177 1135 1366 3343 current 4	5 0 59 <1 1098 1194 1153 1387 3423 history1 3	<1 13 61 <1 909 1065 964 1201 3345 history2 3
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 method ASTM D5185m	0 0 60 1010 1070 1150 1270 2060 limit/base >25	0 0 58 <1 1085 1177 1135 1366 3343 current 4 5	5 0 59 <1 1098 1194 1153 1387 3423 history1 3 5	<1 13 61 <1 909 1065 964 1201 3345 history2 3 <1
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 limit/base >25 >20	0 0 58 <1 1085 1177 1135 1366 3343 current 4 5 3	5 0 59 <1 1098 1194 1153 1387 3423 history1 3 5 3 3	<1 13 61 <1 909 1065 964 1201 3345 history2 3 <1 5
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 2060 225 >25 >20 limit/base >20	0 0 58 <1 1085 1177 1135 1366 3343 current 4 5 3 3	5 0 59 <1 1098 1194 1153 1387 3423 history1 3 5 3 3 <i>b</i> istory1	<1 13 61 <1 909 1065 964 1201 3345 history2 3 <1 5 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 ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 225 >25 >20 limit/base >20	0 0 58 <1 1085 1177 1135 1366 3343 <i>current</i> 4 5 3 <i>current</i> 1.3	5 0 59 <1 1098 1194 1153 1387 3423 history1 3 5 3 3 5 3 3 1.2	<1 13 61 <1 909 1065 964 1201 3345 history2 3 <1 5 history2 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 ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 <i>imit/base</i> >25 >20 <i>imit/base</i> >3 >20	0 0 58 <1 1085 1177 1135 1366 3343 <i>current</i> 4 5 3 <i>current</i> 1.3 8.3	5 0 59 <1 1098 1194 1153 1387 3423 history1 3 5 3 5 3 <i>history1</i> 1.2 8.2	<1 13 61 <1 909 1065 964 1201 3345 history2 3 <1 5 history2 1 7.4
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 TS ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D7415	0 0 0 1010 1070 1150 2260 225 220 220 imit/base >3 >20 >30 imit/base	0 0 58 <1 1085 1177 1135 1366 3343 <i>current</i> 4 5 3 3 <i>current</i> 1.3 8.3 20.2 <i>current</i>	5 0 59 <1 1098 1194 1153 1387 3423 history1 3 5 3 3 history1 1.2 8.2 20.1	<1 13 61 <1 909 1065 964 1201 3345 history2 3 <1 5 history2 1 7.4 19.8 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 ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 imit/base >25 imit/base >3 >20 imit/base >3 >30	0 0 58 <1 1085 1177 1135 1366 3343 <u>current</u> 4 5 3 3 <u>current</u> 1.3 8.3 20.2	5 0 59 <1 1098 1194 1153 1387 3423 history1 3 5 3 5 3 history1 1.2 8.2 20.1 history1	<1 13 61 <1 909 1065 964 1201 3345 history2 3 <1 5 history2 1 7.4 19.8

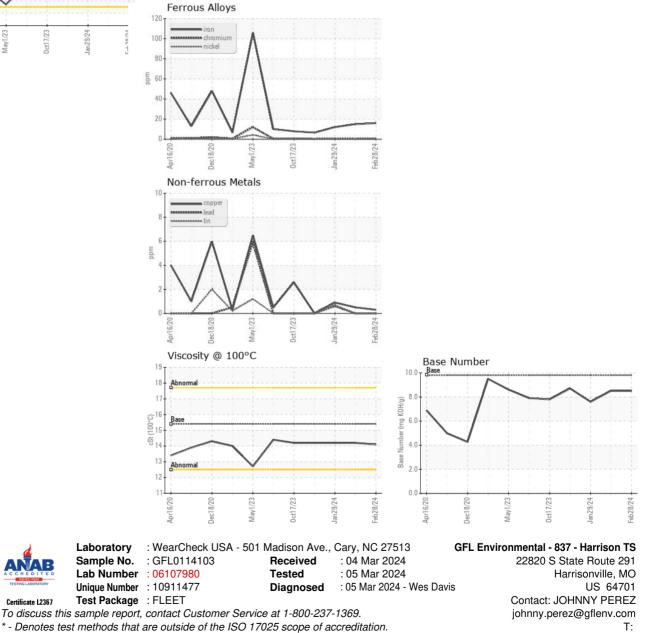


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VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*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 PROPE	RTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	14.1	14.2	14.2
GRAPHS						



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

Certificate L2367

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