

OIL ANALYSIS REPORT

Sample Rating Trend





Component

Diesel Engine Elui

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

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.

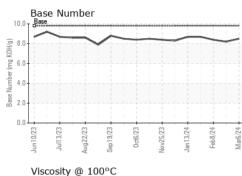
		Aug2023					
12023	Jul2023		Oct2023	Nov2023	Jan2024	Feb2024	Mar202

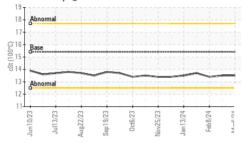


SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0068900	GFL0068903	GFL0068875
Sample Date		Client Info		06 Mar 2024	01 Mar 2024	08 Feb 2024
Machine Age	hrs	Client Info		2963	2820	2670
Oil Age	hrs	Client Info		866	723	573
Oil Changed		Client Info		Changed	Changed	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	>90	0	13	7
Chromium	ppm	ASTM D5185m	>20	<1	1	<1
Nickel	ppm	ASTM D5185m	>2	0	0	0
Titanium	ppm	ASTM D5185m	>2	0	0	0
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>20	2	5	4
Lead	ppm	ASTM D5185m	>40	<1	0	0
Copper	ppm	ASTM D5185m	>330	0	<1	0
Tin	ppm	ASTM D5185m	>15	0	0	0
Vanadium	ppm	ASTM D5185m		<1	<1	0
Cadmium	ppm	ASTM D5185m		<1	0	0
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm		limit/base 0	current 4	history1 2	history2 4
	ppm ppm					
Boron		ASTM D5185m	0	4	2	4
Boron Barium Molybdenum Manganese	ppm	ASTM D5185m ASTM D5185m	0	4 0	2 0	4
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	4 0 55 <1 949	2 0 56 <1 943	4 0 55 <1 886
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	4 0 55 <1 949 1016	2 0 56 <1 943 1001	4 0 55 <1 886 966
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	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 55 <1 949 1016 996	2 0 56 <1 943 1001 981	4 0 55 <1 886 966 1006
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	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 55 <1 949 1016 996 1221	2 0 56 <1 943 1001 981 1156	4 0 55 <1 886 966 1006 1171
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	0 0 60 1010 1070 1150 1270 2060	4 0 55 <1 949 1016 996	2 0 56 <1 943 1001 981	4 0 55 <1 886 966 1006 1171 2854
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 55 <1 949 1016 996 1221	2 0 56 <1 943 1001 981 1156	4 0 55 <1 886 966 1006 1171
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method	0 00 00 1010 1070 1150 1270 2060	4 0 555 <1 949 1016 996 1221 3040 current 2	2 0 56 <1 943 1001 981 1156 3045	4 0 55 <1 886 966 1006 1171 2854 history2 2
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 method ASTM D5185m	0 0 60 1010 1070 1150 1270 2060 imit/base	4 0 555 <1 949 1016 996 1221 3040 current	2 0 56 <1 943 1001 981 1156 3045 history1 2 4	4 0 55 <1 886 966 1006 1171 2854 history2 2 2 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 method	0 0 60 1010 1070 1150 1270 2060 imit/base	4 0 555 <1 949 1016 996 1221 3040 current 2	2 0 56 <1 943 1001 981 1156 3045 history1 2	4 0 55 <1 886 966 1006 1171 2854 history2 2
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 imit/base	4 0 55 <1 949 1016 996 1221 3040 current 2 2 2	2 0 56 <1 943 1001 981 1156 3045 history1 2 4	4 0 55 <1 886 966 1006 1171 2854 history2 2 2 2
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	4 0 55 <1 949 1016 996 1221 3040 current 2 2 2 6	2 0 56 <1 943 1001 981 1156 3045 history1 2 4 12 history1 0.5	4 0 55 <1 886 966 1006 1171 2854 history2 2 2 2 2 7
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 225 >25 >20	4 0 55 <1 949 1016 996 1221 3040 current 2 2 2 6 5	2 0 56 <1 943 1001 981 1156 3045 history1 2 4 12 history1	4 0 55 <1 886 966 1006 1171 2854 history2 2 2 2 7 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	4 0 55 <1 949 1016 996 1221 3040 current 2 2 2 6 current 0.2	2 0 56 <1 943 1001 981 1156 3045 history1 2 4 12 history1 0.5	4 0 55 <1 886 966 1006 1171 2854 history2 2 2 2 7 history2 0.4
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> >6 >20	4 0 55 <1 949 1016 996 1221 3040 <i>current</i> 2 2 2 6 <i>current</i> 0.2 5.2	2 0 56 <1 943 1001 981 1156 3045 history1 2 4 12 history1 0.5 6.4	4 0 55 <1 886 966 1006 1171 2854 history2 2 2 2 2 7 history2 0.4 5.9
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 20 imit/base >6 >20	4 0 55 <1 949 1016 996 1221 3040 <u>current</u> 2 2 2 6 <u>current</u> 0.2 5.2 17.5	2 0 56 <1 943 1001 981 1156 3045 history1 2 4 12 history1 0.5 6.4 18.2	4 0 55 <1 886 966 1006 1171 2854 history2 2 2 7 history2 0.4 5.9 17.8
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 ppm	ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D7415	0 0 0 1010 1070 1150 1270 2060 2060 225 220 220 220 20 20 20 20 20 20 20 20 20	4 0 55 <1 949 1016 996 1221 3040 current 2 2 2 6 current 0.2 5.2 17.5 current	2 0 56 <1 943 1001 981 1156 3045 history1 2 4 12 12 history1 0.5 6.4 18.2 history1	4 0 55 <1 886 966 1006 1171 2854 history2 2 2 2 2 7 history2 0.4 5.9 17.8 history2

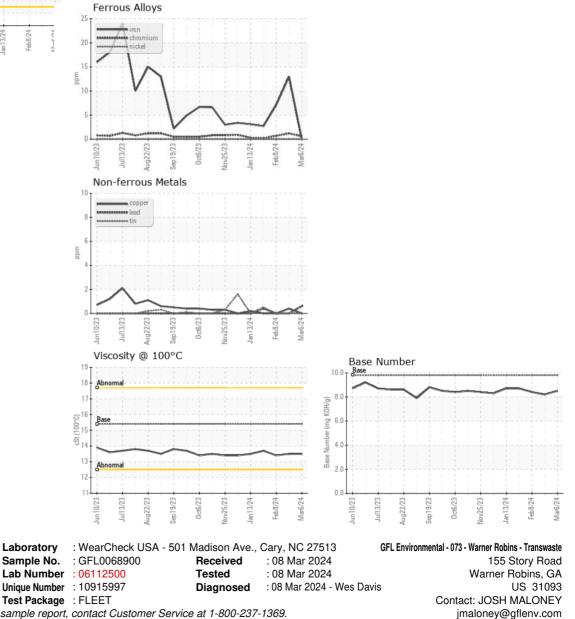


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VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*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	13.5	13.5	13.4
GRAPHS						





 Certificate 12367
 Test Package
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 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)

Submitted By: JOSH MALONEY

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