

OIL ANALYSIS REPORT

Sample Rating Trend

NORMAL

Machine Id 10590

Component

Diesel Engine Fluic

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.

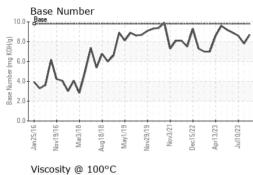
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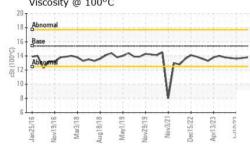


SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0069156	GFL0069174	GFL0068754
Sample Date		Client Info		29 Aug 2023	19 Jul 2023	10 Jul 2023
Machine Age	hrs	Client Info		16888	16690	16625
Oil Age	hrs	Client Info		0	0	0
Oil Changed	1115	Client Info		Not Changd	Changed	Not Changd
•		Client Inio		NORMAL	NORMAL	NORMAL
Sample Status				NORMAL		
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<1.0	<1.0	<1.0
Glycol		WC Method		NEG	NEG	NEG
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	12	17	14
Chromium	ppm	ASTM D5185m	>20	<1	<1	<1
Nickel	ppm	ASTM D5185m	>4	<1	0	0
Titanium	ppm	ASTM D5185m		0	<1	<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	2
Tin	ppm	ASTM D5185m	>15	0	0	<1
Vanadium	ppm	ASTM D5185m		0	<1	0
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base 0	current 7	history1 3	history2 6
	ppm ppm		0			
Boron		ASTM D5185m	0	7	3	6
Boron Barium	ppm	ASTM D5185m ASTM D5185m	0 0 60	7 0	3 0	6 0
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	7 0 78	3 0 63	6 0 61
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	7 0 78 <1	3 0 63 <1	6 0 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	7 0 78 <1 1131	3 0 63 <1 973	6 0 61 <1 979
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 1150	7 0 78 <1 1131 1258	3 0 63 <1 973 1144	6 0 61 <1 979 1085
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	7 0 78 <1 1131 1258 1213	3 0 63 <1 973 1144 1028	6 0 61 <1 979 1085 1029
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	7 0 78 <1 1131 1258 1213 1460 3913	3 0 63 <1 973 1144 1028 1274	6 0 61 <1 979 1085 1029 1311
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	0 0 60 1010 1070 1150 1270 2060	7 0 78 <1 1131 1258 1213 1460 3913	3 0 63 <1 973 1144 1028 1274 3489	6 0 61 <1 979 1085 1029 1311 3679
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	7 0 78 <1 1131 1258 1213 1460 3913 current	3 0 63 <1 973 1144 1028 1274 3489 history1	6 0 61 <1 979 1085 1029 1311 3679 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	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	0 0 60 1010 1070 1150 1270 2060 kimit/base >25	7 0 78 <1 1131 1258 1213 1460 3913 current 8	3 0 63 <1 973 1144 1028 1274 3489 history1 4	6 0 61 <1 979 1085 1029 1311 3679 history2 4
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm 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 kimit/base >25	7 0 78 <1 1131 1258 1213 1460 3913 <u>current</u> 8 6	3 0 63 <1 973 1144 1028 1274 3489 history1 4 7	6 0 61 <1 979 1085 1029 1311 3679 history2 4 5
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 limit/base >25	7 0 78 <1 1131 1258 1213 1460 3913 current 8 6 1	3 0 63 <1 973 1144 1028 1274 3489 history1 4 7 <1	6 0 61 <1 979 1085 1029 1311 3679 history2 4 5 2
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 ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 225 >25 >20 20	7 0 78 <1 1131 1258 1213 1460 3913 current 8 6 1 1 current 0.4	3 0 63 <1 973 1144 1028 1274 3489 history1 4 7 <1 4 7 <1 history1 0.7	6 0 61 <1 979 1085 1029 1311 3679 history2 4 5 2 history2 0.6
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	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base >3 >20	7 0 78 <1 1131 1258 1213 1460 3913 current 8 6 1 1	3 0 63 <1 973 1144 1028 1274 3489 history1 4 7 <1 history1	6 0 61 <1 979 1085 1029 1311 3679 history2 4 5 2 2 history2
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 limit/base >25 >20 limit/base >3 >20	7 0 78 <1 1131 1258 1213 1460 3913 <i>current</i> 8 6 1 <i>current</i> 0.4 7.1	3 0 63 <1 973 1144 1028 1274 3489 history1 4 7 <1 4 7 <1 history1 0.7 9.4	6 0 61 <1 979 1085 1029 1311 3679 history2 4 5 2 history2 0.6 9.4
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 D7844 *ASTM D7844 *ASTM D7844	0 0 0 1010 1070 1150 1270 2060 2060 225 20 220 220 20 3 20 20 3 3 20 20 3 3 20 20 20 20 20 20 20 20 20 20 20 20 20	7 0 78 <1 1131 1258 1213 1460 3913 Current 8 6 1 Current 0.4 7.1 18.9 Current	3 0 63 <1 973 1144 1028 1274 3489 history1 4 7 <1 4 7 <1 0.7 9.4 20.2 history1	6 0 61 <1 979 1085 1029 1311 3679 history2 4 5 2 history2 0.6 9.4 20.0 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRAE	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 2060 225 20 220 20 20 20 20 20 20 20 20 20 20 20	7 0 78 <1 1131 1258 1213 1460 3913 current 8 6 1 1 current 0.4 7.1 18.9	3 0 63 <1 973 1144 1028 1274 3489 history1 4 7 <1 4 7 <1 0.7 9.4 20.2	6 0 61 <1 979 1085 1029 1311 3679 history2 4 5 2 2 history2 0.6 9.4 20.0

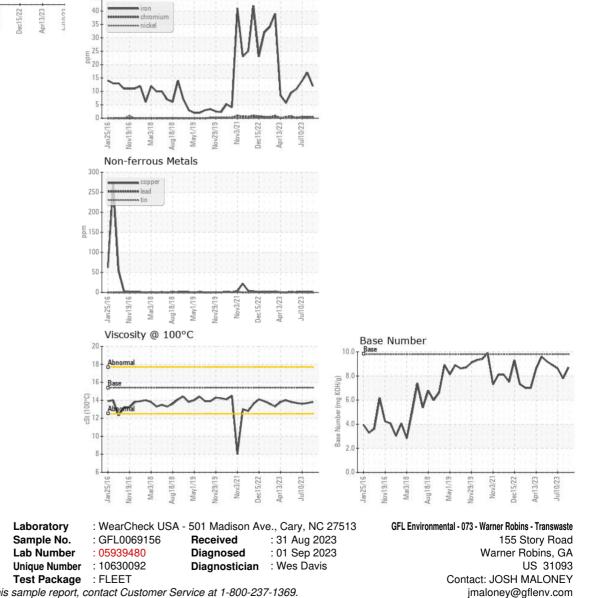


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VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*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	13.8	13.7	13.6
GRAPHS						
Ferrous Alloys						



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)

Certificate L2367

Submitted By: JOSH MALONEY

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