

OIL ANALYSIS REPORT

Sample Rating Trend

NORMAL

722024-310036

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.

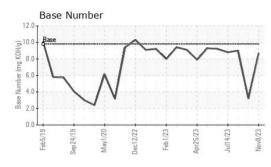
Fluid Condition

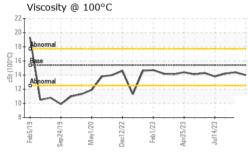
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

AL)	νάζο19 Sep2019 Mer2020 Dee2022 Feb2023 Αμε2023 Ju2023 Ver202						
SAMPLE INFOR	MATION	method	limit/base	current	history1	history2	
Sample Number		Client Info		GFL0095167	GFL0090722	GFL0087147	
Sample Date		Client Info		08 Nov 2023	27 Sep 2023	14 Aug 2023	
Machine Age	hrs	Client Info		19937	19745	19493	
Oil Age	hrs	Client Info		0	600	0	
Oil Changed		Client Info		Not Changd	Changed	Not Changd	
Sample Status				NORMAL	ABNORMAL	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	>110	9	19	5	
Chromium	ppm	ASTM D5185m	>4	<1	2	<1	
Nickel	ppm	ASTM D5185m	>2	<1	<1	<1	
Titanium	ppm	ASTM D5185m		<1	0	<1	
Silver	ppm	ASTM D5185m	>2	<1	0	<1	
Aluminum	ppm	ASTM D5185m	>25	2	2	2	
Lead	ppm	ASTM D5185m	>45	<1	21	<1	
Copper	ppm	ASTM D5185m	>85	<1	2	<1	
Tin	ppm	ASTM D5185m	>4	<1	2	0	
Vanadium		ASTM D5185m		4	0	<1	
vanaulum	ppm	ASTIVI DOTODITI		<1	0	< 1	
Cadmium	ppm	ASTM D5185m		<1 <1	0	0	
			limit/base				
Cadmium ADDITIVES		ASTM D5185m	limit/base 0	<1	0	0	
Cadmium ADDITIVES Boron	ppm	ASTM D5185m method		<1 current	0 history1	0 history2	
Cadmium ADDITIVES Boron Barium	ppm ppm	ASTM D5185m method ASTM D5185m	0	<1 current 5	0 history1 10	0 history2 13	
Cadmium ADDITIVES Boron Barium Molybdenum	ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m	0	<1 current 5 0	0 history1 10 0	0 history2 13 0	
Cadmium ADDITIVES Boron Barium Molybdenum Manganese	ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	<1 current 5 0 61	0 history1 10 0 61	0 history2 13 0 58	
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	<1 current 5 0 61 <1	0 history1 10 0 61 1	0 history2 13 0 58 <1	
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	<1 current 5 0 61 <1 891	0 history1 10 0 61 1 677	0 history2 13 0 58 <1 921	
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070	<1 current 5 0 61 <1 891 1081	0 history1 10 0 61 1 677 1799	0 history2 13 0 58 <1 921 1134	
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150	<1 current 5 0 61 <1 891 1081 1023	0 history1 10 0 61 1 677 1799 808	0 history2 13 0 58 <1 921 1134 972	
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	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	0 0 60 0 1010 1070 1150 1270	<1 current 5 0 61 <1 891 1081 1023 1202	0 history1 10 0 61 1 677 1799 808 1075	0 history2 13 0 58 <1 921 1134 972 1196	
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	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 ASTM D5185m	0 0 60 1010 1070 1150 1270 2060 limit/base	<1 current 5 0 61 <1 891 1081 1023 1202 3121	0 history1 10 0 61 1 677 1799 808 1075 2553	0 history2 13 0 58 <1 921 1134 972 1196 3550	
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	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 ASTM D5185m ASTM D5185m	0 0 60 1010 1070 1150 1270 2060 limit/base	<1 current 5 0 61 <1 891 1081 1023 1202 3121 current	0 history1 10 0 61 1 677 1799 808 1075 2553 history1	0 history2 13 0 58 <1 921 1134 972 1196 3550 history2	
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	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 ASTM D5185m method	0 0 60 0 1010 1070 1150 1270 2060 limit/base >30	<1 current 5 0 61 <1 891 1081 1023 1202 3121 current 3	0 history1 10 0 61 1 677 1799 808 1075 2553 history1 5	0 history2 13 0 58 <1 921 1134 972 1196 3550 history2 5	
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	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 ASTM D5185m method ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base >30	<1 current 5 0 61 <1 891 1081 1023 1202 3121 current 3 0	0 history1 10 0 61 1 677 1799 808 1075 2553 history1 5 9	0 history2 13 0 58 <1 921 1134 972 1196 3550 history2 5 3	
Cadmium ADDITIVES 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 method ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base >30	<1 current 5 0 61 <1 891 1081 1023 1202 3121 current 3 0 3	0 history1 10 0 61 1 677 1799 808 1075 2553 history1 5 9 1	0 history2 13 0 58 <1 921 1134 972 1196 3550 history2 5 3 4	
Cadmium ADDITIVES 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 method ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 limit/base >30 	<1 current 5 0 61 <1 891 1081 1023 1202 3121 current 3 0 3 current 	0 history1 10 0 61 1 677 1799 808 1075 2553 history1 5 9 1 1 <i>history</i> 1	0 history2 13 0 58 <1 921 1134 972 1196 3550 history2 5 3 4 4	
Cadmium ADDITIVES 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 ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 limit/base >30 	<1 current 5 0 61 <1 891 1081 1023 1202 3121 Current 3 0 3 current 0.5 	0 history1 10 0 61 1 677 1799 808 1075 2553 history1 5 9 1 1 history1 0	0 history2 13 0 58 <1 921 1134 972 1196 3550 history2 5 3 4 4 history2 0.3	
Cadmium ADDITIVES 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 ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 imit/base >30 imit/base >20	<1 current 5 0 61 <1 891 1081 1023 1202 3121 current 3 0 3 current 0.5 6.4 	0 history1 10 0 61 1 677 1799 808 1075 2553 history1 5 9 1 5 9 1 1 history1 0 0 11.3	0 history2 13 0 58 <1 921 1134 972 1196 3550 history2 5 3 4 4 history2 0.3 5.3	
Cadmium ADDITIVES 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	0 0 0 1010 1070 1150 1270 2060 imit/base >30 imit/base >3 >20 >30	<1 current 5 0 61 <1 891 1081 1023 1202 3121 current 3 0 3 current 0.5 6.4 19.4 	0 history1 10 0 61 1 677 1799 808 1075 2553 history1 5 9 1 5 9 1 1 history1 0 11.3 25.4	0 history2 13 0 58 <1 921 1134 972 1196 3550 history2 5 3 4 5 3 4 history2 0.3 5.3 18.1	

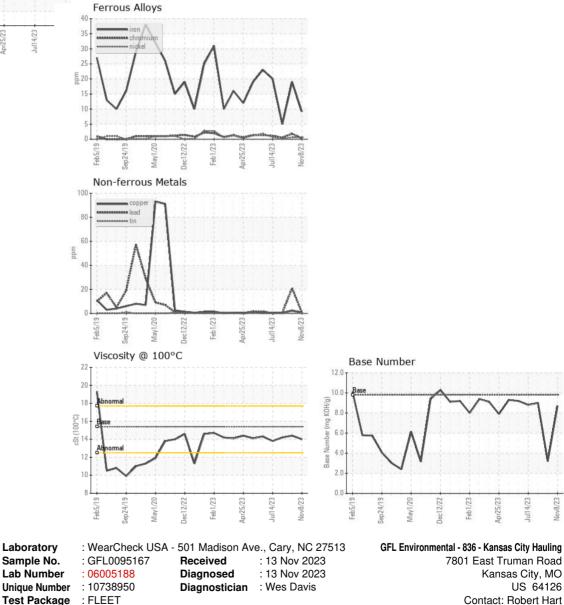


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VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*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	14.0	14.4	14.2
GRAPHS						



To discuss this sample report, contact Customer Service at 1-800-237-1369.

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

Certificate L2367

Contact/Location: See also GFL823, 834, 837, 840 - Robert Hart - GFL836

rhart@gflenv.com

T: (580)461-1509

Nov8/23 -

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^{* -} Denotes test methods that are outside of the ISO 17025 scope of accreditation.