

OIL ANALYSIS REPORT



Machine Id 914030

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.

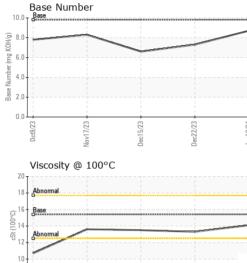
SAMPLE INFOR		method	limit/base	current	history1	history2
			iiiiii/base			
Sample Number		Client Info		GFL0048370	GFL0077273	GFL0093590
Sample Date	la un	Client Info		10 Jan 2024	22 Dec 2023	15 Dec 2023
Machine Age	hrs	Client Info		1206	1160	1120
Oil Age	hrs	Client Info		46	545	505
Oil Changed		Client Info		Not Changd	Changed	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	3	21	18
Chromium	ppm	ASTM D5185m	>20	0	<1	<1
Nickel	ppm	ASTM D5185m	>4	2	5	4
Titanium	ppm	ASTM D5185m		16	<1	<1
Silver	ppm	ASTM D5185m	>3	0	2	1
Aluminum	ppm	ASTM D5185m	>20	0	1	2
Lead	ppm	ASTM D5185m	>40	<1	0	0
Copper	ppm	ASTM D5185m	>330	26	188	135
Tin	ppm	ASTM D5185m	>15	0	<1	1
Vanadium	ppm	ASTM D5185m		0	0	0
Cadmium	ppm	ASTM D5185m		0	0	0
	pp			v	0	0
ADDITIVES	pp	method	limit/base	current	history1	history2
ADDITIVES Boron	ppm		limit/base	-		-
		method		current	history1	history2
Boron	ppm	method ASTM D5185m	0	current 24	history1 9	history2 8
Boron Barium	ppm ppm	method ASTM D5185m ASTM D5185m	0	current 24 0	history1 9 <1	history2 8 0
Boron Barium Molybdenum	ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	current 24 0 45	history1 9 <1 67	history2 8 0 61
Boron Barium Molybdenum Manganese	ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	current 24 0 45 0	history1 9 <1 67 2	history2 8 0 61 1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150	current 24 0 45 0 832	history1 9 <1 67 2 913 1071 1002	history2 8 0 61 1 914 1010 940
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070	Current 24 0 45 0 832 1132	history1 9 <1 67 2 913 1071 1002 1194	history2 8 0 61 1 914 1010 940 1191
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150	Current 24 0 45 0 832 1132 961	history1 9 <1 67 2 913 1071 1002	history2 8 0 61 1 914 1010 940
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150 1270	Current 24 0 45 0 832 1132 961 1245	history1 9 <1 67 2 913 1071 1002 1194	history2 8 0 61 1 914 1010 940 1191
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm ppm	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	Current 24 0 45 0 832 1132 961 1245 3109	history1 9 <1 67 2 913 1071 1002 1194 2540	history2 8 0 61 1 914 1010 940 1191 2653
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm ppm ppm	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	Current 24 0 45 0 832 1132 961 1245 3109 Current	history1 9 <1 67 2 913 1071 1002 1194 2540 history1	history2 8 0 61 1 914 1010 940 1191 2653 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	0 0 60 1010 1070 1150 1270 2060 limit/base >25	Current 24 0 45 0 832 1132 961 1245 3109 Current 3	history1 9 <1 67 2 913 1071 1002 1194 2540 history1 11	history2 8 0 61 1 914 1010 940 1191 2653 history2 7
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	0 0 60 1010 1070 1150 1270 2060 limit/base >25	Current 24 0 45 0 832 1132 961 1245 3109 Current 3 2	history1 9 <1 67 2 913 1071 1002 1194 2540 history1 11 6	history2 8 0 61 1 914 1010 940 1191 2653 history2 7 4
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 limit/base >25	Current 24 0 45 0 832 1132 961 1245 3109 Current 3 2 2	history1 9 <1 67 2 913 1071 1002 1194 2540 history1 11 6 2	history2 8 0 61 1 914 1010 940 1191 2653 history2 7 4 3
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	method ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 225 >25	current 24 0 45 0 832 1132 961 1245 3109 current 3 2 2 2 2 current	history1 9 <1 67 2 913 1071 1002 1194 2540 history1 11 6 2 history1	history2 8 0 61 1 914 1010 940 1191 2653 history2 7 4 3 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	method ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base	current 24 0 45 0 832 1132 961 1245 3109 current 3 2 2 current 0	history1 9 <1 67 2 913 1071 1002 1194 2540 history1 11 6 2 history1 0.5	history2 8 0 61 1 914 1010 940 1191 2653 history2 7 4 3 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	method ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base >3 >20	current 24 0 45 0 832 1132 961 1245 3109 current 3 2 2 current 0.2 5.7	history1 9 <1 67 2 913 1071 1002 1194 2540 history1 11 6 2 history1 0.5 8.0	history2 8 0 61 1 914 1010 940 1191 2653 history2 7 4 3 history2 0.4 7.6
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 TS ppm ppm ppm	method ASTM D5185m ASTM D7185m ASTM D7624 *ASTM D7624 *ASTM D7415 method	0 0 0 1010 1070 1150 1270 2060 2060 225 20 220 220 20 3 20 3 20 3 3 20 3 3 20 3 3 20 3 3 3 20 3 3 3 20 3 3 3 3	Current 24 0 45 0 832 1132 961 1245 3109 Current 3 2 2 Current 0.2 5.7 18.3 Current	history1 9 <1 67 2 913 1071 1002 1194 2540 history1 11 6 2 history1 0.5 8.0 20.3 history1	history2 8 0 61 1 914 1010 940 1191 2653 history2 7 4 3 history2 0.4 7.6 19.9 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	method ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 imit/base >25 imit/base >3 >20	Current 24 0 45 0 832 1132 961 1245 3109 current 3 2 current 0.2 5.7 18.3	history1 9 <1 67 2 913 1071 1002 1194 2540 history1 11 6 2 history1 0.5 8.0 20.3	history2 8 0 61 1 914 1010 940 1191 2653 history2 7 4 3 history2 0.4 7.6 19.9



0ct9/23

Vov17/23

OIL ANALYSIS REPORT



Dec15/23

	VISUAL		method	limit/base	e 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		
Dec22/23 Jan 10/24	Appearance	scalar	*Visual	NORML	NORML	NORML	NORML		
Jar	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		method	limit/base		history1	history2		
	Visc @ 100°C	cSt	ASTM D445	15.4	14.1	13.3	13.5		
	GRAPHS								
	Ferrous Alloys								
23	iron								
Dec22/23	25- nickel								
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	10								
	5								
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	0 - 1	(/23	//23	1/24					
	0ct9/23 Nov17/23	Dec15/23	Dec22/23	Jan 10/24					
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	0ct9/23 Nov17/23	Dec15/23	Dec22/23	Jan 10/24					
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	Viscosity @ 100°C			1	Base Number				
	18 - Abnormal		1						
	17- 16 - Page			(B/)	8.0				
	Dase			Base Number (mg KOH/g)	6.0-				
	© 15 00 14 33 13 - Abnormal			ber (m					
	Abnormal			- Nu	4.0				
	11-			Bas	2.0				
	10-								
	3/23 +	;/23 -	- 1/23		33	;/23 +	2/23 +		
	0ct9/23 Nov17/23	Dec15/23	Dec22/23	Jan 10/24	0ct9/23 Nov17/23	Dec15/23	Dec22/23 Jan 10/24		
Laboratory Sample No.	: WearCheck USA - : GFL0048370	501 Madia Recieved		ry, NC 275 Jan 2024	13 GFL Env	vironmental - 891 - Okl	ahoma City Hauling South Rockwell		
Lab Number		Diagnos		Jan 2024 Jan 2024			homa City, OK		
Unique Number	: 10823648	Diagnost		s Davis			US 73128		
Test Package	· FI FFT					Conte	act Andy Smith		



Test Package : FLEET Certificate L2367 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)

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