

OIL ANALYSIS REPORT

Sample Rating Trend



Machine Id 720052

Component Diesel Engine

Fluid

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

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor. Please specify the component make and model with your next sample.

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.

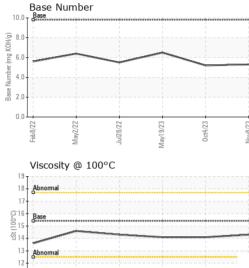
AL)		Feb2022	May2022 Jul2022	May2023 Oct2023	Nov2023	
SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0098244	GFL0083919	GFL0061467
Sample Date		Client Info		08 Nov 2023	04 Oct 2023	19 May 2023
Machine Age	hrs	Client Info		4772	4625	2300
Oil Age	hrs	Client Info		2447	4625	2300
Oil Changed		Client Info		N/A	N/A	N/A
Sample Status				NORMAL	NORMAL	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	59	55	38
Chromium	ppm	ASTM D5185m	>20	2	2	<1
Nickel	ppm	ASTM D5185m	>4	<1	<1	0
Titanium	ppm	ASTM D5185m		<1	<1	0
Silver	ppm	ASTM D5185m	>3	<1	<1	0
Aluminum	ppm	ASTM D5185m	>20	3	4	<1
Lead	ppm	ASTM D5185m	>40	<1	1	0
Copper	ppm	ASTM D5185m	>330	6	5	11
Tin	ppm	ASTM D5185m	>15	<1	<1	0
		ACTM DE10Em		4	4	0
Vanadium	ppm	ASTM D5185m		<1	<1	0
Vanadium Cadmium	ppm ppm	ASTM D5185m		<1 <1	<1	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 6	0 history1 2	0 history2 6
Cadmium ADDITIVES Boron Barium Molybdenum	ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m	0	<1 current 6 <1	0 history1 2 0	0 history2 6 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 6 <1 67	0 history1 2 0 65	0 history2 6 0 59
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	<1 current 6 <1 67 1	0 history1 2 0 65 1	0 history2 6 0 59 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	0 0 60 0 1010	<1 current 6 <1 67 1 969	0 history1 2 0 65 1 972	0 history2 6 0 59 1 824
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070	<1 current 6 <1 67 1 969 1182	0 history1 2 0 65 1 972 1118	0 history2 6 0 59 1 824 1105
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	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 6 <1 67 1 969 1182 1003	0 history1 2 0 65 1 972 1118 972	0 history2 6 0 59 1 824 1105 845
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	0 0 60 0 1010 1070 1150 1270	<1 current 6 <1 67 1 969 1182 1003 1301	0 history1 2 0 65 1 972 1118 972 1309	0 history2 6 0 59 1 824 1105 845 1129
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	<1 current 6 <1 67 1 969 1182 1003 1301 2901	0 history1 2 0 65 1 972 1118 972 1309 2715	0 history2 6 0 59 1 824 1105 845 1129 2596
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	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	<1 current 6 <1 67 1 969 1182 1003 1301 2901 current	0 history1 2 0 65 1 972 1118 972 1309 2715 history1	0 history2 6 0 59 1 824 1105 845 1129 2596 history2
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 >25	<1 current 6 <1 67 1 969 1182 1003 1301 2901 current 9	0 history1 2 0 65 1 972 1118 972 1118 972 1309 2715 history1 8	0 history2 6 0 59 1 824 1105 845 1129 2596 history2 7
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 method ASTM D5185m	0 0 60 1010 1070 1150 1270 2060 limit/base >25	<1 current 6 <1 67 1 969 1182 1003 1301 2901 current 9 4	0 history1 2 0 65 1 972 1118 972 1309 2715 history1 8 9 9	0 history2 6 0 59 1 824 1105 845 1129 2596 history2 7 7 7
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 0 1010 1070 1150 1270 2060 limit/base >25	<1 current 6 <1 67 1 969 1182 1003 1301 2901 current 9 4 7	0 history1 2 0 65 1 972 1118 972 1118 972 1309 2715 history1 8 9 9 6	0 history2 6 0 59 1 824 1105 845 1129 2596 history2 7 7 7 2
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 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base	<1 current 6 <1 67 1 969 1182 1003 1301 2901 Current 9 4 7 current 	0 history1 2 0 65 1 972 1118 972 1309 2715 history1 8 9 6 6 history1	0 history2 6 0 59 1 824 1105 845 1129 2596 history2 7 7 7 2 9 7
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 >25 >20 limit/base	<1 current 6 <1 67 1 969 1182 1003 1301 2901 current 9 4 7 current 1.1	0 history1 2 0 65 1 972 1118 972 1309 2715 history1 8 9 6 6 history1 1	0 history2 6 0 59 1 824 1105 845 1129 2596 history2 7 7 7 7 2
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 >25 imit/base >20	<1 current 6 <1 67 1 969 1182 1003 1301 2901 current 9 4 7 current 1.1 13.6 	0 history1 2 0 65 1 972 1118 972 1309 2715 history1 8 9 6 history1 1 1 1 3.3	0 history2 6 0 59 1 824 1105 845 1129 2596 history2 7 7 7 7 2 <i>history2</i> 0.7 11.4
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 >25 	<1 current 6 <1 67 1 969 1182 1003 1301 2901 0 current 9 4 7 current 1.1 13.6 26.8 	0 history1 2 0 65 1 972 1118 972 1309 2715 history1 8 9 6 kistory1 1 1 13.3 25.1	0 history2 6 0 59 1 824 1105 845 1129 2596 history2 7 7 7 2 5 6 history2 0.7 11.4 22.6



Feb 8/22

Mav2/22

OIL ANALYSIS REPORT



u128/22

May19/23

	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
0ct4/23 - Nov8/23 -	Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Nov	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	ERTIES	method	limit/base	current	history1	history2
	Visc @ 100°C	cSt	ASTM D445	15.4	14.3	14.1	14.1
	GRAPHS						
	Ferrous Alloys						
0ct4/23 -	70 - iron iron						
Oct	60 nickel						
	50-						
	튭.40 -	\sim					
	30-						
	20						
		and and a plan minutes of	And Street Street Street Street				
	Feb8/22 -	9/23 -	0ct4/23 -	Nov8/23 -			
	May May	Juico/22 May19/23	00	Nov			
	Non-ferrous Meta	ls					
	12 copper						
	10 - exercise lead	/					
	8	/					
	E 6	/	\sim				
	2-	R339 Married					
	0		AND DESCRIPTION OF THE OWNER.				
	Feb 8/22 May2/22	Juico/22 May19/23	0ct4/23	Nov8/23			
	Viscosity @ 100°	2		-			
	¹⁹		1	10.	Base Number		
	18 - Abnormal				0		
	17-			8 Base Number (mg KOH/g)			
	Base 53 14			у B б.	0		
				ang 4.	0		
				Nu asi			
	13 Abnormal		1	⁶⁶ 2.	0		
	11				0		
	Feb8/22	0/22 9/23	0ct4/23 -	Nov8/23	Feb8/22	Jul28/22 -	0ct4/23 - Nov8/23 -
	May	Jui20/22 May19/23	Oct	Nov	Feb. May	Jul28/22 May19/23	0ct Noví
Laboratory	: WearCheck USA -				3 GFL Envi		dericksburg Hauling
Sample No. Lab Number	: GFL0098244 : 06005389	Received		Nov 2023 Nov 2023			64 Houser Drive dericksburg, VA
Lab Number			tician We			FIE	

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)

Diagnostician : Wes Davis

Unique Number : 10739151

Submitted By: TECHNICIAN ACCOUNT

US 22408

T:

F:

Contact: WILLIAM MILO

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