

OIL ANALYSIS REPORT

Sample Rating Trend





Machine Id 910091

Fluid

Component Diesel Engine

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

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

Wear

Metal levels are typical for a new component breaking in.

Contamination

There is no indication of any contamination in the oil.

Fluid Condition

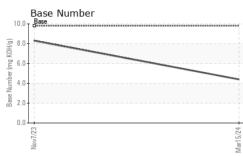
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

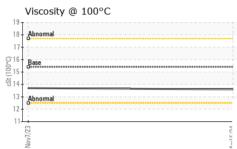
N SHP 150040 (····-,		Nov2023	Mar2024		
SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0104413	GFL0059147	
Sample Date		Client Info		15 Mar 2024	07 Nov 2023	
Machine Age	mls	Client Info		67707	65823	
Oil Age	mls	Client Info		0	0	
Oil Changed		Client Info		Changed	N/A	
Sample Status				NORMAL	NORMAL	
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>3.0	<1.0	<1.0	
Water		WC Method	>0.2	NEG	NEG	
Glycol		WC Method		NEG	NEG	
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>120	31	5	
Chromium	ppm	ASTM D5185m	>20	2	<1	
Nickel	ppm	ASTM D5185m	>5	7	0	
Titanium	ppm	ASTM D5185m	>2	<1	0	
Silver	ppm	ASTM D5185m	>2	0	<1	
Aluminum	ppm	ASTM D5185m	>20	2	2	
Lead	ppm	ASTM D5185m	>40	<1	<1	
Copper	ppm	ASTM D5185m	>330	3	3	
Tin	ppm	ASTM D5185m	>15	2	0	
Vanadium	ppm	ASTM D5185m		0	0	
Cadmium	ppm	ASTM D5185m		0	0	
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base 0	current 2	history1 3	history2
	ppm ppm					
Boron		ASTM D5185m	0	2	3	
Boron Barium	ppm	ASTM D5185m ASTM D5185m	0	2 0	3 6	
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	2 0 58	3 6 62	
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	2 0 58 1	3 6 62 0	
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	2 0 58 1 906	3 6 62 0 876	
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	2 0 58 1 906 1076	3 6 62 0 876 1057	
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	2 0 58 1 906 1076 990	3 6 62 0 876 1057 1014	
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	2 0 58 1 906 1076 990 1246	3 6 62 0 876 1057 1014 1164	
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 0 1010 1070 1150 1270 2060	2 0 58 1 906 1076 990 1246 2614	3 6 62 0 876 1057 1014 1164 3553	
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	2 0 58 1 906 1076 990 1246 2614 current	3 6 62 0 876 1057 1014 1164 3553 history1	
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 ASTM D5185m	0 0 60 1010 1070 1150 1270 2060	2 0 58 1 906 1076 990 1246 2614 <i>current</i> 6	3 6 62 0 876 1057 1014 1164 3553 history1 4	 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base	2 0 58 1 906 1076 990 1246 2614 <u>current</u> 6 13	3 6 62 0 876 1057 1014 1164 3553 history1 4 0	 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	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	2 0 58 1 906 1076 990 1246 2614 <i>current</i> 6 13 3	3 6 62 0 876 1057 1014 1164 3553 history1 4 0 2	 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus 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 2060 225 >25	2 0 58 1 906 1076 990 1246 2614 <i>current</i> 6 13 3 <i>current</i>	3 6 62 0 876 1057 1014 1164 3553 history1 4 0 2 2 history1	 history2 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	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	2 0 58 1 906 1076 990 1246 2614 <i>current</i> 6 13 3 <i>current</i> 1.1	3 6 62 0 876 1057 1014 1164 3553 history1 4 0 2 <u>history1</u> 0.3	 history2 history2 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 2060 225 225 220 220 1imit/base >22 20	2 0 58 1 906 1076 990 1246 2614 <i>current</i> 6 13 3 <i>current</i> 1.1 9.8	3 6 62 0 876 1057 1014 1164 3553 history1 4 0 2 history1 0.3 7.4	 history2 history2 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	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 225 20 225 20 20 20 20 20 20 20 20 20 20 20 20 20	2 0 58 1 906 1076 990 1246 2614 <i>current</i> 6 13 3 <i>current</i> 1.1 9.8 23.5	3 6 62 0 876 1057 1014 1164 3553 history1 4 0 2 <u>history1</u> 0.3 7.4 18.5	 history2 history2 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	ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D7415	0 0 0 1010 1070 1150 1270 2060 2060 225 20 225 20 220 20 20 20 20 20 20 20 20 20 20 20	2 0 58 1 906 1076 990 1246 2614 <i>current</i> 6 13 3 <i>current</i> 1.1 9.8 23.5 <i>current</i>	3 6 62 0 876 1057 1014 1164 3553 history1 4 0 2 history1 0.3 7.4 18.5 history1	 history2 history2 history2



OIL ANALYSIS REPORT

VISUAI





VISUAL		method	limit/base	current	history1	history
White Metal	scalar	*Visual	NONE	NONE	NONE	
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	
Precipitate	scalar	*Visual	NONE	NONE	NONE	
Silt	scalar	*Visual	NONE	NONE	NONE	
Debris	scalar	*Visual	NONE	NONE	NONE	
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	
Appearance	scalar	*Visual	NORML	NORML	NORML	
Odor	scalar	*Visual	NORML	NORML	NORML	
Emulsified Wa		*Visual	>0.2	NEG	NEG	
Free Water	scalar	*Visual		NEG	NEG	
FLUID PF	ROPERTIES	method	limit/base	current	history1	history
Visc @ 100°C		ASTM D445	15.4	13.6	13.7	
GRAPHS						
Ferrous Allo	ys					
iron	1					
30 - chromiu	um	/				
25 -		/				
e ²⁰	/					
E 20						
10						
5	and a strate designation of the strate of th					
	7.7.4.4.5.5.5.5.6.6.6.6.6.6.6.6.6.6.6.6.6.6					
Nov7/23			Mar15/24			
No			Mar			
Non-ferrous	6 Metals					
¹⁰ T3						
copper						
8 - tin	J					
6						
udd .						
4						
2 -		in the second	No. of Concession, Name			
			Manager			
0			24 +			
Nov7/23			Mar15/24			
Viscosity @	100°C		Z			
¹⁹ T	100 C		10.0	Base Number	•	
18 - Abnormal			10.1			
17				0		
			KOH/ç			
(),16 (),00 (),15 (),15 (),15 (),15 (),16)			B 6.0	0		
1 (1) (1)			mber			
			H 4.0	ut		
13 - Abnormal			2 P	0		
12-			2.1			
11			0.0			
7/23			5/24	7/23		
Nov			Mar1	Nov		
Abnormal 12 12 12 12 12 12 12 12 12 12				USA - 501 Madison Ave., Cary, NC 27513	USA - 501 Madison Ave., Cary, NC 27513 GFL En	USA - 501 Madison Ave., Cary, NC 27513 GFL Environmental - 410
VearCheck US GFL0104413	SA - 501 Madisc Rece	ived : 19	9 Mar 2024	GFL En	vironmental - 410 3900	
06122123	Teste) Mar 2024			Way
10936274	Diagr) Mar 2024 - W	les Davis		US 48



Unique Number : 10936274 Diagnosed : 20 Mar 2024 - Wes Davis Test Package : FLEET Contact: Belal Dgheish Certificate L2367 To discuss this sample report, contact Customer Service at 1-800-237-1369. bdgheish@gflenv.com * - 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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