

OIL ANALYSIS REPORT

Sample Rating Trend





Machine Id 913091

Fluid

Component Diesel Engine

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

	SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
	Sample Number		Client Info		GFL0105601	GFL0101541	GFL0081378
or.	Sample Date		Client Info		12 Dec 2023	17 Nov 2023	23 May 2023
	Machine Age	hrs	Client Info		2939	2745	1204
	Oil Age	hrs	Client Info		2745	1204	609
	Oil Changed		Client Info		Changed	N/A	Changed
he	Sample Status				NORMAL	NORMAL	NORMAL
	CONTAMINAT	ION	method	limit/base	current	history1	history2
	Fuel		WC Method	>3.0	<1.0	<1.0	<1.0
he	Water		WC Method	>0.2	NEG	NEG	NEG
ne	Glycol		WC Method		NEG	NEG	NEG
	WEAR METAL	S	method	limit/base	current	history1	history2
	Iron	ppm	ASTM D5185m	>120	13	10	28
	Chromium	ppm	ASTM D5185m		<1	<1	2
	Nickel	ppm	ASTM D5185m		3	3	4
	Titanium	ppm	ASTM D5185m		0	<1	<1
	Silver		ASTM D5185m	>2	۰ <1	0	1
	Aluminum	ppm			<1	2	1
		ppm	ASTM D5185m				
	Lead	ppm	ASTM D5185m		0	<1	2
	Copper	ppm	ASTM D5185m		6	7	123
	Tin	ppm	ASTM D5185m	>15	<1	<1	2
	Vanadium	ppm	ASTM D5185m		0	0	<1
	Cadmium	ppm	ASTM D5185m		0	<1	0
	ADDITIVES		method	limit/base	current	history1	history2
	Boron	ppm	ASTM D5185m	0	3	0	7
	Barium	ppm	ASTM D5185m	0	0	9	0
	Molybdenum	ppm	ASTM D5185m	60	56	61	62
	Manganese	ppm	ASTM D5185m	0	<1	<1	1
	Magnesium	ppm	ASTM D5185m	1010	916	896	940
	Calcium	ppm	ASTM D5185m	1070	1063	1102	1090
	Phosphorus	ppm	ASTM D5185m	1150	1000	1029	937
	Zinc	ppm	ASTM D5185m	1270	1264	1199	1200
	Sulfur	ppm	ASTM D5185m		2893	2883	2637
	CONTAMINAN	TS	method	limit/base	current	history1	history2
	Silicon	ppm	ASTM D5185m	>25	4	4	11
	o "	nnm	ASTM D5185m		<1	<1	5
	Sodium	ppm					Ũ
	Potassium	ppm	ASTM D5185m	>20	<1	3	2
				>20 limit/base		3 history1	
	Potassium		ASTM D5185m		<1		2
	Potassium INFRA-RED Soot %	ppm	ASTM D5185m method *ASTM D7844	limit/base >4	<1 current 0.6	history1 0.4	2 history2
	Potassium INFRA-RED	ppm %	ASTM D5185m method	limit/base >4 >20	<1 current	history1	2 history2 0.6
	Potassium INFRA-RED Soot % Nitration	ppm % Abs/cm Abs/.1mm	ASTM D5185m method *ASTM D7844 *ASTM D7624 *ASTM D7415	limit/base >4 >20	<1 current 0.6 8.3	history1 0.4 7.0	2 history2 0.6 9.0
	Potassium INFRA-RED Soot % Nitration Sulfation	% Abs/cm Abs/.1mm DATION	ASTM D5185m method *ASTM D7844 *ASTM D7624 *ASTM D7415	limit/base >4 >20 >30 limit/base	<1 current 0.6 8.3 19.7	history1 0.4 7.0 19.0	2 history2 0.6 9.0 21.1

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

Contamination

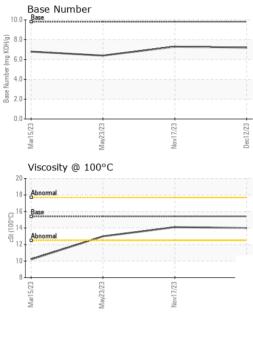
There is no indication of any contamination in the oil.

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.



OIL ANALYSIS REPORT



VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
	scalar	*Visual	NONE	NONE	NONE	NONE
			NONE		NONE	NONE
						NONE
						NONE
						NORML
Odor				-		NORML
0401						NEG
			>0.2			
			Parch /Income			NEG
						history2 13.0
	COL	A31101 D443	15.4	14.0	14.1	13.0
40 I						
35 - chromium						
30 - nickel						
25 -						
툡 20 -						
15						
10						
5-						
0						
15/23		17/23	12/23			
Mar	5	Nov	Deci			
Non-ferrous Me	etals					
140 T						
120 - Lead						
100 -	\					
80	\mathbf{i}					
ud						
40 -	· · · · · · · · · · · · · · · · · · ·					
20-		\ \				
0		<u> </u>				
15/23		17/23	12/23			
Mar		Nov	Dec			
	0°C			Base Number		
19 18 Abnormal		1	10.0			
17-			- 8.0	ļ.		
16 Base			B/HO			
015		1	Ĕ 6.0			
			nber (
0		1	4.0 Z	1+		
11			ee 2.0			
10						
9	1	~				2
		2/11/2	12/2	15/2	23/2	C7// IADM
		Nov17/23	Dec12/23	Mar15/23	May23/23	
Mar15/23 +		2				
: WearCheck USA : GFL0105601	- 501 Madis Received	on Ave., Ca : 14	Dec 2023	3 GFL Env	vironmental - 415	6200 Elmride
: WearCheck USA : GFL0105601 : 06034420	- 501 Madis Received Diagnose	on Ave., Ca : 14 d: : 15	Dec 2023 Dec 2023	3 GFL Env		6200 Elmrido ling Heights, I
: WearCheck USA : GFL0105601 : 06034420 or : 10789649	- 501 Madis Received	on Ave., Ca : 14 d: : 15	Dec 2023	3 GFL Env	Ster	6200 Elmrido ling Heights, N US 4831
: WearCheck USA : GFL0105601 : 06034420	- 501 Madis Received Diagnose Diagnosti	on Ave., Ca : 14 d: : 15 cian: : We	Dec 2023 Dec 2023 s Davis	3 GFL En	Ster Conta	6200 Elmrido ling Heights, I
	White Metal Yellow Metal Precipitate Silt Debris Sand/Dirt Appearance Odor Emulsified Water Free Water Fluid PROI Visc @ 100°C GRAPHS Ferrous Alloys	White Metal scalar Yellow Metal scalar Precipitate scalar Silt scalar Debris scalar Sand/Dirt scalar Appearance scalar Codor scalar Emulsified Water scalar Free Water scalar Free Water scalar Ferrous Alloys Terrous Alloys Non-ferrous Metals Non-ferrous Metals Viscosity @ 100°C Viscosity @ 100°C	White Metal scalar *Visual Yellow Metal scalar *Visual Precipitate scalar *Visual Silt scalar *Visual Debris scalar *Visual Sand/Dirt scalar *Visual Appearance scalar *Visual Odor scalar *Visual Emulsified Water scalar *Visual Free Water scalar *Visual Mon-ferrous Alloys Correct St ASTM D445 CRAPHS Ferrous Alloys Viscosity @ 100°C Viscosity @ 100°C	White Metal scalar *Visual NONE Yellow Metal scalar *Visual NONE Precipitate scalar *Visual NONE Silt scalar *Visual NONE Sand/Dirt scalar *Visual NONE Sand/Dirt scalar *Visual NONE Sand/Dirt scalar *Visual NONE Appearance scalar *Visual NORML Odor scalar *Visual NORML Odor scalar *Visual NORML Codor scalar *Visual NORML Debris scalar *Visual NORML Odor scalar *Visual NORML Emulsified Water scalar *Visual NORML Emulsified Water scalar *Visual Sol2 Free Water Scalar *Visual Sol2 Non-ferrous Alloys Visc @ 100°C cSt ASTM D445 15.4 On-ferrous Metals Viscosity @ 100°C Viscosity @ 100°C	White Metal scalar 'Visual NONE NONE Precipitate scalar 'Visual NONE NONE Sitt scalar 'Visual NONE NONE Sand/Dirt scalar 'Visual NONE NONE Sand/Dirt scalar 'Visual NONE NONE Sand/Dirt scalar 'Visual NONE NONE Appearance scalar 'Visual NORML NORML Odor scalar 'Visual NORML NORML NORML MORML NORM Codor scalar 'Visual NORML NORML NORM Monferrous Alloys Ferrous Alloys Non-ferrous Metals Viscosity @ 100°C Viscosity @ 100°C Viscosity @ 100°C	White Metal scalar 'Visual NONE NONE NONE NONE Precipitate scalar 'Visual NONE NONE NONE Sitt scalar 'Visual NONE NONE NONE Debris scalar 'Visual NONE NONE NONE Sand/Dirt scalar 'Visual NONE NONE NONE Appearance scalar 'Visual NONE NONE NONE Codor scalar 'Visual NONE NONE NONE Emulsified Water scalar 'Visual NORML NORML NORML NORML Emulsified Water scalar 'Visual NORML NORML NORML NORML State Scalar 'Visual NORML NORML NORML NORML Sector Scalar 'Visual NORML NORML NORML NORML Emulsified Water scalar 'Visual NORML NORML NORML Sector Scalar 'Visual NORML NORML NORML NORML Sector Scalar 'Visual NORML NORML NORML NORML Sector Scalar 'Visual NORML NORML NORML NORML NORML NORML NORML NORML NORML NORML NORML NORML NORML NORML NORML NON-FERONN NON-FERONN NON-FERONN NON-FERONN NON-FERONN NON-FERONN NON-FERONN NON-FERONN NORML



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