

OIL ANALYSIS REPORT

Sample Rating Trend





Machine Id
413065
Component
Diesel Engine
Fluid

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

DIAGNOSIS Recommendation

Resample at the next service interval to monitor. (Customer Sample Comment: Engine)

Wear

All component wear rates are normal.

Contamination

There is no indication of any contamination in the oil.

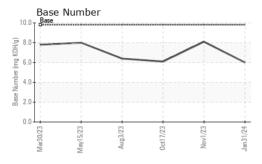
Fluid Condition

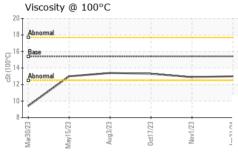
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is acceptable for the time in service.

Sample Number Client Info GFL0094109 GFL0094109 GFL0094 Sample Date Client Info 31 Jan 2024 01 Nov 2023 17 Oct 20 Machine Age mls Client Info 41276 32468 31047 Oil Age mls Client Info A1276 32468 31047 Oil Changed Client Info N/A N/A	N SHP 15W40 (GAL)	Mar2023	May2023 Aug2023	Oct2023 Nov2023	Jan 2024	
Sample Date Client Info 31 Jan 2024 01 Nov 2023 17 Oct 20	SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Machine Age mls Client Info 41276 32468 31047 Oil Age mls Client Info 14276 32468 31047 Oil Changed Client Info N/A N/A N/A N/A Sample Status NORMAL NORMAL NORMAL NORMAL NORMAL CONTAMINATION method limil/base current history1 history1 Fuel WC Method >3.0 <1.0	Sample Number		Client Info		GFL0105480	GFL0094109	GFL0094144
Oil Changed	Sample Date		Client Info		31 Jan 2024	01 Nov 2023	17 Oct 2023
Dil Changed Client Info N/A N/A N/A NORMAL NORMAL NORMAL NORMAL NORMAL	Machine Age	mls	Client Info		41276	32468	31047
NORMAL NORMAL NORMAL CONTAMINATION method limit/base current history1 history1	Oil Age	mls	Client Info		41276	32468	31047
CONTAMINATION	Oil Changed		Client Info		N/A	N/A	N/A
Water	Sample Status				NORMAL	NORMAL	NORMAL
Water WC Method >0.2 NEG NEG NEG Glycol WC Method NEG NEG NEG WEAR METALS method limit/base current history1 history1 Iron ppm ASTM D5185m >120 4 2 1 Chromium ppm ASTM D5185m >20 0 <1 <1 Nickel ppm ASTM D5185m >20 0 <1 0 Silver ppm ASTM D5185m >2 0 <1 0 Aluminum ppm ASTM D5185m >2 0 <1 0 Aluminum ppm ASTM D5185m >20 <1 2 1 Lead ppm ASTM D5185m >20 <1 0 <1 0 Copper ppm ASTM D5185m >20 <1 0 0 <1 0 Vanadium ppm ASTM D5185m 0 0 <1	CONTAMINAT	ION	method	limit/base	current	history1	history2
WEAR METALS	Fuel		WC Method	>3.0	<1.0	<1.0	<1.0
WEAR METALS	Water		WC Method	>0.2	NEG	NEG	NEG
Chromium	Glycol		WC Method		NEG	NEG	NEG
Chromium	WEAR METAL	.S	method	limit/base	current	history1	history2
Nickel	ron	ppm	ASTM D5185m	>120	4	2	1
Description	Chromium	ppm	ASTM D5185m	>20	0	<1	<1
Silver	Nickel	ppm	ASTM D5185m	>5	0	<1	0
Aluminum	Titanium	ppm	ASTM D5185m	>2	0	<1	0
Lead		ppm	ASTM D5185m	>2	0		
Copper	Aluminum	ppm	ASTM D5185m				1
Trin	Lead	ppm					
Vanadium ppm ASTM D5185m 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 0 ADDITIVES method limit/base current history1 history1 Boron ppm ASTM D5185m 0 0 0 0 Barium ppm ASTM D5185m 0 0 5 0 Molybdenum ppm ASTM D5185m 0 0 5 0 Molybdenum ppm ASTM D5185m 0 0 <1 <1 Magnesium ppm ASTM D5185m 1010 4 4 6 Calcium ppm ASTM D5185m 1070 2487 2475 2338 Phosphorus ppm ASTM D5185m 1270 1299 1162 1247 Sulfur ppm ASTM D5185m 2060 3345 3006 2806 CONTAMINANTS method limit/base current history1 <td>Copper</td> <td>ppm</td> <td>ASTM D5185m</td> <td>>330</td> <td>3</td> <td>5</td> <td>42</td>	Copper	ppm	ASTM D5185m	>330	3	5	42
ADDITIVES		ppm	ASTM D5185m	>15			0
ADDITIVES	Vanadium	ppm	ASTM D5185m				0
Boron		ppm	ASTM D5185m		0	<1	
Barium ppm ASTM D5185m 0 0 5 0 Molybdenum ppm ASTM D5185m 60 55 49 47 Manganese ppm ASTM D5185m 0 0 <1	ADDITIVES		method	limit/base			history2
Molybdenum ppm ASTM D5185m 60 55 49 47 Manganese ppm ASTM D5185m 0 0 <1 <1 Magnesium ppm ASTM D5185m 1010 4 4 6 Calcium ppm ASTM D5185m 1070 2487 2475 2338 Phosphorus ppm ASTM D5185m 1150 1120 1025 1044 Zinc ppm ASTM D5185m 1270 1299 1162 1247 Sulfur ppm ASTM D5185m 2060 3345 3006 2806 CONTAMINANTS method limit/base current history1 history1 Silicon ppm ASTM D5185m 22 7 7 6 Sodium ppm ASTM D5185m 20 2 2 4 INFRA-RED method limit/base current history1 history1 Soot % *ASTM D7844 >4 0.1		ppm					
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Silicon ppm ASTM D5185m >25 7 7 6				2060	3345		
Sodium ppm ASTM D5185m 2 0 1 Potassium ppm ASTM D5185m >20 2 2 4 INFRA-RED method limit/base current history1 history1 Soot % *ASTM D7844 >4 0.1 0.1 0.2 Nitration Abs/cm *ASTM D7624 >20 7.9 5.0 7.5 Sulfation Abs/.1mm *ASTM D7415 >30 19.9 14.9 19.7 FLUID DEGRADATION method limit/base current history1 history1 Dxidation Abs/.1mm *ASTM D7414 >25 11.6 8.4 11.6		ITS					history2
Potassium ppm ASTM D5185m >20 2 2 4 INFRA-RED method limit/base current history1 history1 Soot % % *ASTM D7844 >4 0.1 0.1 0.2 Nitration Abs/cm *ASTM D7624 >20 7.9 5.0 7.5 Sulfation Abs/.1mm *ASTM D7415 >30 19.9 14.9 19.7 FLUID DEGRADATION method limit/base current history1 history1 Oxidation Abs/.1mm *ASTM D7414 >25 11.6 8.4 11.6				>25			
INFRA-RED							
Soot % % *ASTM D7844 >4 0.1 0.1 0.2 Nitration Abs/cm *ASTM D7624 >20 7.9 5.0 7.5 Sulfation Abs/.1mm *ASTM D7415 >30 19.9 14.9 19.7 FLUID DEGRADATION method limit/base current history1 history1 history1 history1 Oxidation Abs/.1mm *ASTM D7414 >25 11.6 8.4 11.6		ppm			2		
Nitration Abs/cm *ASTM D7624 >20 7.9 5.0 7.5 Sulfation Abs/.1mm *ASTM D7415 >30 19.9 14.9 19.7 FLUID DEGRADATION method limit/base current history1 history1 history1 history1 Oxidation Abs/.1mm *ASTM D7414 >25 11.6 8.4 11.6				limit/base			history2
Sulfation Abs/.1mm *ASTM D7415 >30 19.9 14.9 19.7 FLUID DEGRADATION method limit/base current history1 history1 Oxidation Abs/.1mm *ASTM D7414 >25 11.6 8.4 11.6							
FLUID DEGRADATION method limit/base current history1 history1 Oxidation Abs/.1mm *ASTM D7414 >25 11.6 8.4 11.6				>20			
Oxidation Abs/.1mm *ASTM D7414 >25 11.6 8.4 11.6	Sulfation	Abs/.1mm		>30	19.9	14.9	
	FLUID DEGRAI	NOITAC	method	limit/base	current	history1	history2
Base Number (BN) mg KOH/g ASTM D2896 9.8 6.0 8.1 6.1		Abs/.1mm	*ASTM D7414	>25	11.6	8.4	11.6
	Base Number (BN)	mg KOH/g	ASTM D2896	9.8	6.0	8.1	6.1



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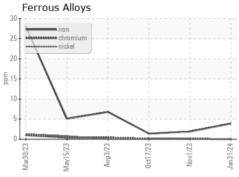


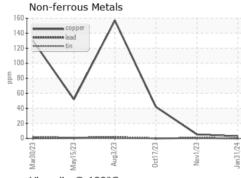


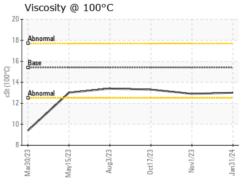
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	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

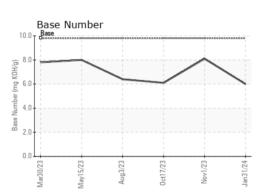
FLUID PROPI	ERTIES	method				history2
Visc @ 100°C	cSt	ASTM D445	15.4	13.0	12.9	13.3

GRAPHS













Certificate L2367

Report Id: GFL983 [WUSCAR] 06079550 (Generated: 02/07/2024 09:27:12) Rev: 1

Laboratory

Sample No. Lab Number **Unique Number** Test Package : FLEET

: GFL0105480 : 06079550 : 10861641

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

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Recieved : 05 Feb 2024 Diagnosed

: 07 Feb 2024 Diagnostician : Sean Felton

GFL Environmental - 983 - Sugar Land Hauling

16011 West Belfort Street Sugar Land, TX US 77498

Contact: Adrian Martinez adrianmartinez@gflenv.com T:

* - 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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