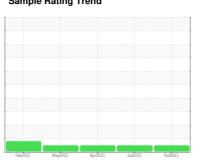


# **OIL ANALYSIS REPORT**

Sample Rating Trend



NORMAL



Machine Id **524017-905** 

Component

**Diesel Engine** 

PETRO CANADA DURON SHP 15W40 (46 GAL)

## DIAGNOSIS

### Recommendation

Resample at the next service interval to monitor.

All component wear rates are normal.

### Contamination

There is no indication of any contamination in the

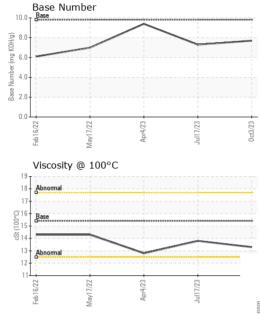
## **Fluid Condition**

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

GAL)		Feb2022	May2022	Apr2023 Jul2023	Oct2023	
SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0018759	GFL0051014	GFL0051032
Sample Date		Client Info		03 Oct 2023	17 Jul 2023	04 Apr 2023
Machine Age	hrs	Client Info		0	19414	18864
Oil Age	hrs	Client Info		600	0	354
Oil Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>3.0	<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	>165	32	54	33
Chromium	ppm	ASTM D5185m	>5	2	5	2
Nickel	ppm	ASTM D5185m	>4	0	<1	<1
Titanium	ppm	ASTM D5185m	>2	0	0	0
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>20	11	16	10
Lead	ppm	ASTM D5185m	>150	2	4	2
Copper	ppm	ASTM D5185m	>90	1	5	7
Tin	ppm	ASTM D5185m	>5	2	2	1
Vanadium	ppm	ASTM D5185m		0	0	0
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	0	6	8	76
Barium	ppm	ASTM D5185m	0	0	<1	0
Molybdenum	ppm	ASTM D5185m	60	64	66	53
Manganese	ppm	ASTM D5185m	0	<1	2	3
Magnesium	ppm	ASTM D5185m	1010	918	975	515
Calcium	ppm	ASTM D5185m	1070	1087	1298	1614
Phosphorus	ppm	ASTM D5185m	1150	985	1092	870
Zinc	ppm	ASTM D5185m	1270	1191	1346	1066
Sulfur	ppm	ASTM D5185m	2060	2867	3479	3021
CONTAMINAN	ITS	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>35	8	17	29
Sodium	ppm	ASTM D5185m		8	10	16
Potassium	ppm	ASTM D5185m	>20	27	27	29
INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>7.5	8.0	1.3	0.7
Nitration	Abs/cm	*ASTM D7624	>20	10.0	11.2	7.9
Sulfation	Abs/.1mm	*ASTM D7415	>30	20.6	23.3	23.1
FLUID DEGRA	OATION	method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	16.0	19.3	19.0
Base Number (BN)	mg KOH/g			7.7	7.3	9.4
(=14)	39					



# **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
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
<b>Emulsified Water</b>	scalar	*Visual	>0.2	NEG	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG	NEG
FLUID PROPE	RTIFS	method	limit/base	current	history1	historv2

FLUID FROF	ENTIES	method			HISTOLAL	HISTOLYZ
Visc @ 100°C	cSt	ASTM D445	15.4	13.3	13.8	12.8

	GRAPH	5									
000	Iron (ppm	)					Lead (p	om)			
300 250	Severe					300 - 250 -	Severe				
200 E	Abnormal					200 - E 150	Abnormal				
톱 150 100						톮 150- 100-	-				
50 0						50-					
0	Feb 16/22	May17/22 -	Apr4/23 -	Jul17/23 +	0ct3/23	0.1	Feb16/22	May17/22 -	Apr4/23 -	Jul17/23 -	0ct3/23
			Ap	in P	0				Ap	Jin	0
40	Aluminum	(ppm)				12 <sub>T</sub>	Chromiu	ım (ppm)			
30	Severe					10	Severe				
E 20	Abnormal					8 - Edd 6 -	Abnormal				
10						4 -					
0						0					
	Feb16/22	May17/22	Apr4/23 -	Jul17/23	Oct3/23 -		Feb 16/22	May17/22	Apr4/23 -	Jul17/23	Oct3/23 -
	Copper (p			7			Silicon (	_		7	
200	Severe C	F,				80					
150	-					60-	Severe				
튭 100	Abnormal					툆 40	Abnormal				
50		-				20-					
0	22		- 53	- 23	23	0	22				23
	Feb 16/22	May17/22	Apr4/23 -	Jul17/23	Oct3/23		Feb 16/22	May17/22	Apr4/23	Jul17/23	Oct3/23
20	Viscosity (	100°C				10.0	Base Nu	mber			
20	T :					10.0 (B/H <sub>0</sub> ) 8.0			<u></u>		
18	Abnormal					~					
18-	Abnormal Base					E 6.0	-				
18- CSt (100-C) 14-	Base					0.0 mg 4.0					
() 16 () 16 14 12	Abnormal Abnormal					3ase Number 2.0					
CSt (100°C)	Abnormal	May17/22	Apr4/23 +	Jul17/23	0¢3/23	Base Mumber (mg	Feb 16/22 +	May17/22	Apr4/23	Jul17/23	Oct3/23





Certificate L2367

Laboratory

Sample No. Lab Number

: GFL0018759 : 05969605 Unique Number : 10676156 Test Package : MOB1+

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

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 : 04 Oct 2023 Received Diagnosed : 05 Oct 2023

Diagnostician : Wes Davis

GFL Environmental - 632 - SWD Harrison 4102 Industrail Pkwy

Harrison, MI US 48625

Contact: RON TROJANEK rtrojanek@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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