

# **OIL ANALYSIS REPORT**

### Sample Rating Trend









GFL029
Machine Id
Component
Diesel Engine

PETRO CANADA DURON SHP 15W40 (56 QTS)

## 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.

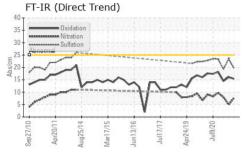
### **Fluid Condition**

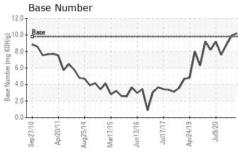
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

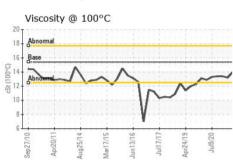
1 0111 101140 (0						
SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0019882	GFL0013444	GFL0013413
Sample Date		Client Info		17 Mar 2021	28 Dec 2020	17 Nov 2020
Machine Age	hrs	Client Info		19244	18918	18679
Oil Age	hrs	Client Info		0	0	0
Oil Changed		Client Info		Not Changd	Changed	Not Changd
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>3.0	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
WEAR METAL	.S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>120	4	5	3
Chromium	ppm	ASTM D5185m	>20	<1	<1	<1
Nickel	ppm	ASTM D5185m	>5	0	<1	2
Titanium	ppm	ASTM D5185m	>2	<1	<1	<1
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>20	3	4	2
Lead	ppm	ASTM D5185m	>40	<1	2	0
Copper	ppm	ASTM D5185m	>330	2	3	2
Tin	ppm	ASTM D5185m	>15	0	2	0
Antimony	ppm	ASTM D5185m		0	0	1
Vanadium	ppm	ASTM D5185m		0	0	0
Cadmium	ppm	ASTM D5185m		0	<1	<1
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	0	5	14	18
Barium	ppm	ASTM D5185m	0	0	0	1
Molybdenum	ppm	ASTM D5185m	60	62	61	65
Manganese	ppm	ASTM D5185m	0	<1	<1	<1
Magnesium	ppm	ASTM D5185m	1010	1034	826	950
Calcium	ppm	ASTM D5185m	1070	1123	1020	1180
Phosphorus	ppm	ASTM D5185m	1150	916	970	876
Zinc	ppm	ASTM D5185m	1270	1207	1104	1026
Sulfur	ppm	ASTM D5185m	2060	2550	2302	2382
CONTAMINAN	ITS	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>25	3	4	4
Sodium	ppm	ASTM D5185m		2	6	5
Potassium	ppm	ASTM D5185m	>20	6	0	17
INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>4	0.5	0.1	0.4
Nitration	Abs/cm	*ASTM D7624	>20	7.7	5	8
Sulfation	Abs/.1mm	*ASTM D7415	>30	19.6	23.5	19.2
FLUID DEGRAI	OATION	method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	15.4	16.1	14.5
Base Number (BN)	mg KOH/g	ASTM D2896	9.8	10.2	9.9	8.8
	. 0					



## **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 PROPI	ERHES	method			history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	14.0	13.2	13.4

Severe   S	on (pp	Aug25/14 (mdd) Aug25/14 (mdd) Aug7/15	Jun13716	Juli7/17	Apr24/19	Jul9/20
300	Apr20/11.	Aug25/14 (mdd) Aug25/14 (mdd) Aug7/15				
Severe   Sev	on (pp	Aug25/14 Mar17/15				
Abnomal  Abn	on (pp	Aug25/14 Mar17/15				
Abnormal  OO OU/LZdes  Copper (ppm)  Severe  OO OU/LZdes  Copper (ppm)  Severe  OO OU/LZdes  Copper (ppm)  Severe  OO OU/LZdes  Copper (ppm)  OO OU/LZdes  Copper (ppm)  Severe  OO OU/LZdes  Copper (ppm)	wall Apr20/11	Aug25/14 Mar17/15				
Aluminum (ppm)  Chr Severe  O O O O O O O O O O O O O O O O O O O	mal Apr20/11	Aug25/14 Mar17/15				
Aluminum (ppm)  Chr Severe  Abnormal  Approximation  Copper (ppm)  Severe  Approximation  Copper (ppm)  Copper (pp	mal Apr20/11	Aug25/14 Mar17/15				
Aluminum (ppm)  Chr  Severe  Abnormal  Abnormal  Copper (ppm)  Copper (ppm)  Abnormal  Copper (ppm)	mal Apr20/11	Aug25/14 Mar17/15				
Aluminum (ppm)  Chr Severe  Abnormal  Abnormal  Copper (ppm)  Copper (ppm)  Abnormal  Copper (ppm)	mal Apr20/11	Aug25/14 Mar17/15				
Severe   So   So   Severe   So   So   Severe   So   So   So   So   So   So   So   S	on (pp	Aug25/14 Mar17/15	Jun13/16	Jul17/17	Apr24/19	Jul9/20
Abnormal	on (pp		Jun13/16	71/71JuC	Apr24/19	Jul9/20
Copper (ppm)  Silication (ppm)  Abnormal  OUVIZAGE STATUS (ppm)  OUVIZAGE STATUS (ppm)  Silication (ppm)  Abnormal  OUVIZAGE STATUS (ppm)  OUVIZAGE STATUS (ppm)  Abnormal  OUVIZAGE STATUS (ppm)  OUVIZAGE ST	on (pp		Jun13/16	71/71lnC	Apr24/19	Jul9/20
Copper (ppm)  Septimorals  April 7/17/15  Septimorals	on (pp		Jun13/16	Juli7/17	Apr24/19	Jul9/20
September   Sept	on (pp		Jun13/16	Juli7/17	Apr24/19	Jul9/20
Copper (ppm)  Several  Approximate  Approxim	on (pp		Jun13/16	Jul17/17	Apr24/19	Jul9/20
Copper (ppm) Silic Severe Brookerd  Abno 20 Abno 20	on (pp		Jun13/	Jul17/	Apr24/	Jul9/
Copper (ppm) Silic Severe Somogra  Abno	on (pp					
Severe Storage Source S		H13				
60 E 40 20 Abno						
200 Abno				щ.		
200 Abno						
	rmal					
			~	~		
	Apr20/11.	Aug25/14	Jun13/16	Jul17/17	Apr24/19	Jul9/20
Sep27/10 Apr20/11 Aug25/14 Mar17/15 Jun13/16 Jul17/17 Apr24/19 Jul9/20	Apri	Aug2 Mar1	Jun	Jul	Apr2	Ju.
	e Numl	ber				
Abnormal (2.0   Base)						
Base 2 8.0					٨	M
Abromal August 4.0	N				1	
Abnormal (D) 10.0 - Base (D) 1		M	~	1	/	
				71/71lnC	-	
Sep27/10 - Aug25/14 - Aug25/14 - Jun13/16 - Jul3/20 - Jul3/20 - Jul3/20 - Sep27/10 - Sep27/10 - Apr24/19 - Sep27/10 - Apr24/19 - Apr24/19 - Apr24/19 - Apr24/19 - Apr24/19 - Apr24/10 - Apr	Apr20/11	Aug25/14	Jun13/16		Apr24/19	Jul9/20





Lab Number : 05210705

Sample No. : GFL0019882

: WearCheck USA - 501 Madison Ave., Cary, NC 27513

Received : 23 Mar 2021 Tested : 26 Mar 2021

Unique Number : 9434598 Test Package : MOB1+

Diagnosed : 26 Mar 2021 - Wes Davis

Certificate 12367 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)

GFL Environmental - 9999 - Moved No Longer Used Units

US

T:

F:

Contact: