



Area
(62A0X16) TALLASSEE
Machine Id
925026-152580
Component
Diesel Engine
Fluid
PETRO CANADA DURON SHP 15W40 (--- LTR)

RECOMMENDATION

We advise that you check for the source of the coolant leak. Check for low coolant level. We recommend an early resample to monitor this condition.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		GFL0088610	GFL0080694	GFL0092435
Sample Date		Client Info		20 May 2024	08 Apr 2024	03 Apr 2024
Machine Age	hrs	Client Info		19557	19337	19307
Oil Age	hrs	Client Info		19557	19337	19307
Filter Age	hrs	Client Info		0	0	0
Oil Changed		Client Info		Not Changd	N/A	Not Changd
Filter Changed		Client Info		N/A	N/A	Not Changd
Sample Status				ABNORMAL	NORMAL	NORMAL

WEAR

Valve wear is indicated.

Iron	ppm	ASTM D5185m	>120	42	26	22
Chromium	ppm	ASTM D5185m	>20	<1	<1	0
Nickel	ppm	ASTM D5185m	>5	▲ 7	2	1
Titanium	ppm	ASTM D5185m	>2	0	<1	0
Silver	ppm	ASTM D5185m	>2	<1	0	0
Aluminum	ppm	ASTM D5185m	>20	8	3	3
Lead	ppm	ASTM D5185m	>40	1	<1	0
Copper	ppm	ASTM D5185m	>330	13	5	4
Tin	ppm	ASTM D5185m	>15	1	<1	0
Vanadium	ppm	ASTM D5185m		0	<1	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

Sodium and/or potassium levels are high. Elemental level of silicon (Si) above normal indicating ingress of seal material.

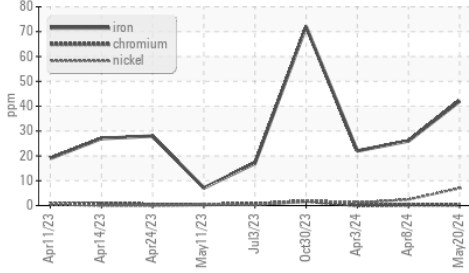
Silicon	ppm	ASTM D5185m	>25	▲ 43	9	8
Potassium	ppm	ASTM D5185m	>20	▲ 30	24	11
Fuel		WC Method	>3.0	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol	%	*ASTM D2982		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>4	0.5	0.6	0.6
Nitration	Abs/cm	*ASTM D7624	>20	8.6	6.8	6.7
Sulfation	Abs/.1mm	*ASTM D7415	>30	18.6	17.6	17.3
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

FLUID CONDITION

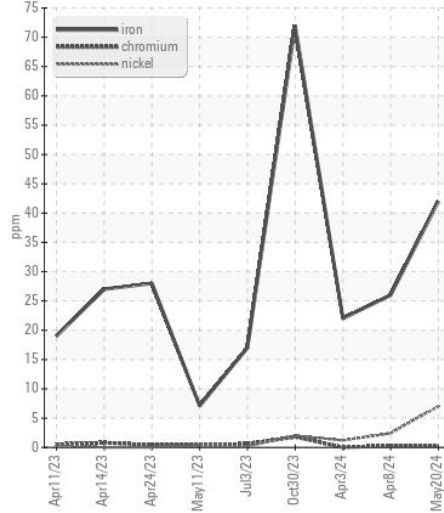
The BN result indicates that there is suitable alkalinity remaining in the oil.

Sodium	ppm	ASTM D5185m		▲ 270	67	57
Boron	ppm	ASTM D5185m	0	24	16	16
Barium	ppm	ASTM D5185m	0	0	0	0
Molybdenum	ppm	ASTM D5185m	60	75	60	62
Manganese	ppm	ASTM D5185m	0	2	<1	0
Magnesium	ppm	ASTM D5185m	1010	881	905	1024
Calcium	ppm	ASTM D5185m	1070	1110	1058	1149
Phosphorus	ppm	ASTM D5185m	1150	1030	1042	1120
Zinc	ppm	ASTM D5185m	1270	1193	1222	1350
Sulfur	ppm	ASTM D5185m	2060	3826	3737	4281
Oxidation	Abs/.1mm	*ASTM D7414	>25	15.4	14.1	14.1
Base Number (BN)	mg KOH/g	ASTM D2896	9.8	10.0	10.6	10.6
Visc @ 100°C	cSt	ASTM D445	15.4	13.7	13.6	13.1

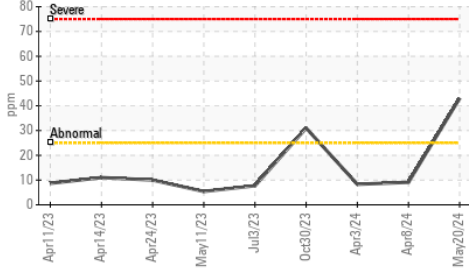
▲ Ferrous Alloys



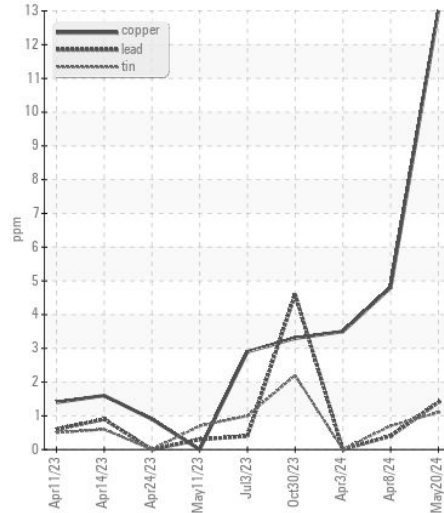
▲ Ferrous Alloys



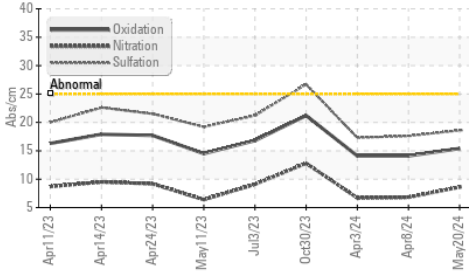
▲ Silicon (ppm)



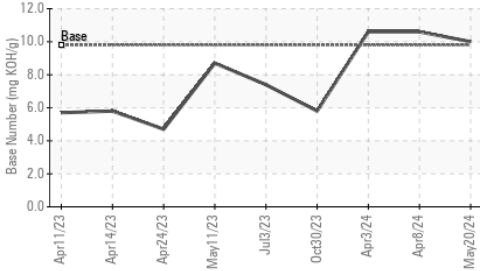
Non-ferrous Metals



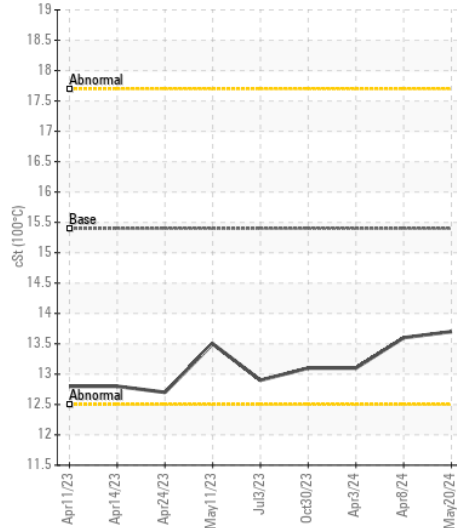
FT-IR (Direct Trend)



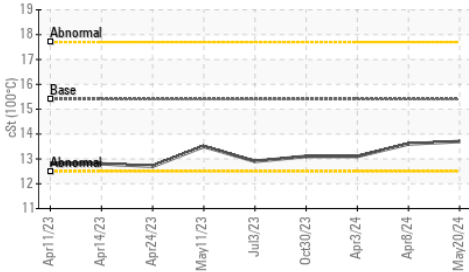
Base Number



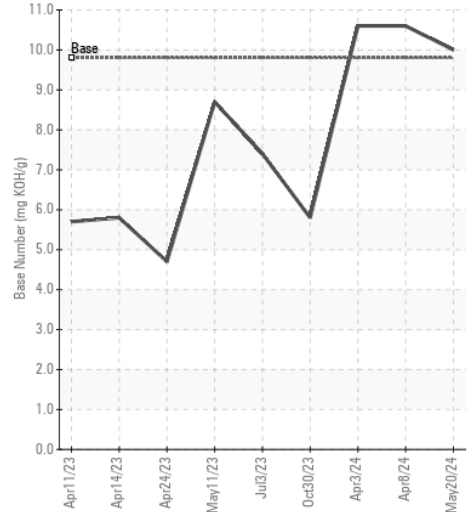
Viscosity @ 100°C



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : GFL0088610 **Received** : 21 May 2024
Lab Number : 06187184 **Tested** : 24 May 2024
Unique Number : 11043936 **Diagnosed** : 24 May 2024 - Jonathan Hester
Test Package : FLEET (Additional Tests: Glycol)

GFL Environmental - 172 - Montgomery-Alexander City-Tallahassee
 Multiple Sites
 Montgomery, AL
 US 36108
 Contact: RICHARD HATFIELD
 rhatfield@gflenv.com

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)

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F: