



WEAR	NORMAL
CONTAMINATION	ABNORMAL
FLUID CONDITION	ABNORMAL

Machine Id
428068-402225.1
 Component
Diesel Engine
 Fluid
PETRO CANADA DURON SHP 15W40 (--- GAL)

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		GFL0093437	GFL0109426	GFL0095309
Sample Date		Client Info		29 May 2024	29 Apr 2024	21 Mar 2024
Machine Age	hrs	Client Info		18710	18564	18449
Oil Age	hrs	Client Info		261	115	650
Filter Age	hrs	Client Info		261	115	650
Oil Changed		Client Info		Not Changd	Not Changd	Changed
Filter Changed		Client Info		Not Changd	Not Changd	Changed
Sample Status				ABNORMAL	ABNORMAL	NORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>100	24	24	8
Chromium	ppm	ASTM D5185m	>20	1	1	1
Nickel	ppm	ASTM D5185m	>4	0	<1	<1
Titanium	ppm	ASTM D5185m		2	2	8
Silver	ppm	ASTM D5185m	>3	0	<1	<1
Aluminum	ppm	ASTM D5185m	>20	3	4	2
Lead	ppm	ASTM D5185m	>40	0	<1	1
Copper	ppm	ASTM D5185m	>330	<1	2	<1
Tin	ppm	ASTM D5185m	>15	<1	<1	1
Vanadium	ppm	ASTM D5185m		0	<1	<1
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

Sodium and/or potassium levels are high.

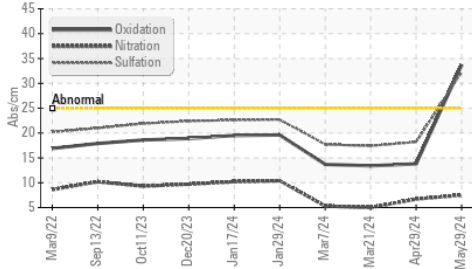
Silicon	ppm	ASTM D5185m	>25	6	8	4
Potassium	ppm	ASTM D5185m	>20	▲ 135	▲ 93	27
Fuel		WC Method	>5	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol	%	*ASTM D2982		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>3	0.4	0.3	0.1
Nitration	Abs/cm	*ASTM D7624	>20	7.5	6.7	5.0
Sulfation	Abs/.1mm	*ASTM D7415	>30	32.3	18.2	17.4
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	▲ MODER	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

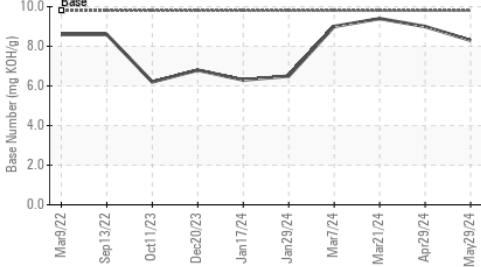
The BN result indicates that there is suitable alkalinity remaining in the oil.

Sodium	ppm	ASTM D5185m		▲ 101	▲ 74	20
Boron	ppm	ASTM D5185m	0	25	4	13
Barium	ppm	ASTM D5185m	0	0	0	1
Molybdenum	ppm	ASTM D5185m	60	64	69	59
Manganese	ppm	ASTM D5185m	0	<1	<1	1
Magnesium	ppm	ASTM D5185m	1010	805	876	900
Calcium	ppm	ASTM D5185m	1070	899	1027	1121
Phosphorus	ppm	ASTM D5185m	1150	1089	1029	1012
Zinc	ppm	ASTM D5185m	1270	1065	1181	1211
Sulfur	ppm	ASTM D5185m	2060	4348	3141	3305
Oxidation	Abs/.1mm	*ASTM D7414	>25	33.7	13.8	13.4
Base Number (BN)	mg KOH/g	ASTM D2896	9.8	8.3	9.0	9.4
Visc @ 100°C	cSt	ASTM D445	15.4	14.3	13.9	14.4

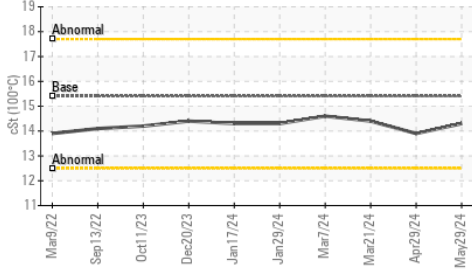
FT-IR (Direct Trend)



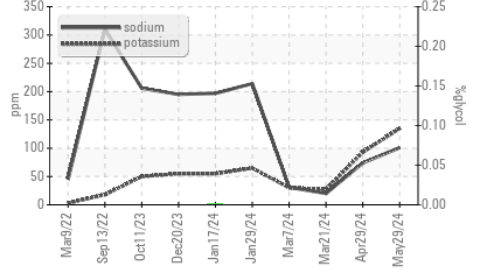
Base Number



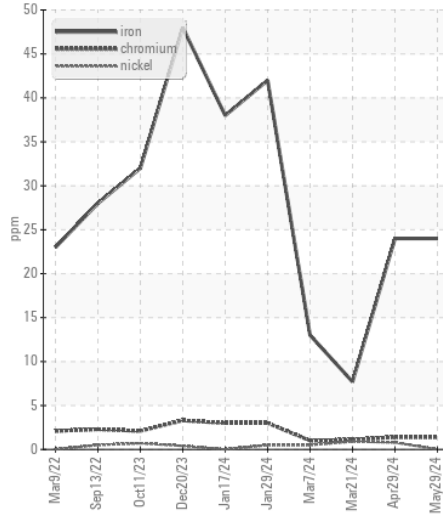
Viscosity @ 100°C



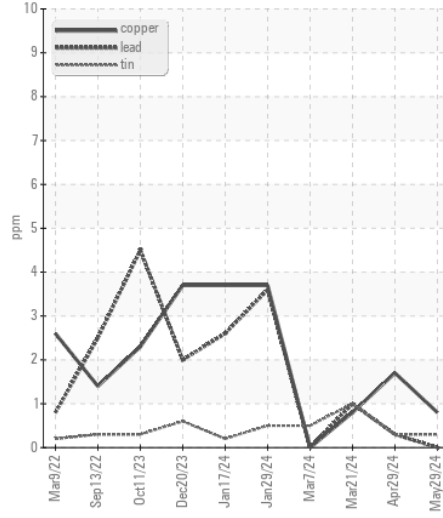
Glycol Contamination



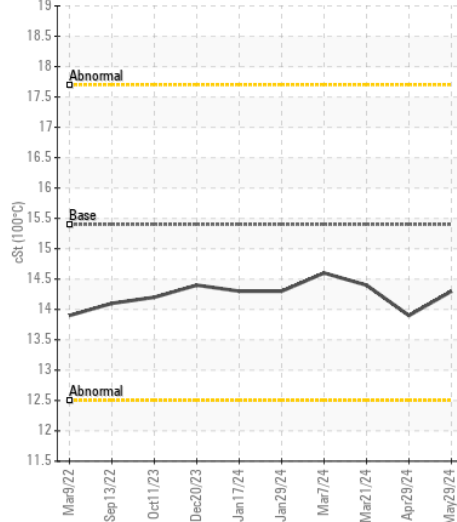
Ferrous Alloys



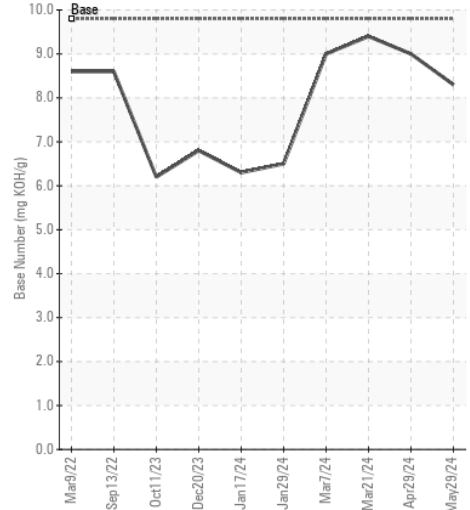
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : GFL0093437 **Received** : 31 May 2024
Lab Number : 06196427 **Tested** : 03 Jun 2024
Unique Number : 11058550 **Diagnosed** : 03 Jun 2024 - Sean Felton
Test Package : FLEET (Additional Tests: Glycol)

GFL Environmental - 891 - Oklahoma City Hauling
 1001 South Rockwell
 Oklahoma City, OK
 US 73128
 Contact: Andy Smith
 andrew.smith@gflenv.com
 T: (405)306-1651
 F:

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)