



WEAR	ABNORMAL
CONTAMINATION	ABNORMAL
FLUID CONDITION	NORMAL



Area
(YA152761)
Machine Id
12067
Component
Diesel Engine
Fluid
PETRO CANADA DURON SHP 15W40 (32 QTS)

RECOMMENDATION

We advise that you check the air filter, air induction system, and any areas where dirt may enter the component. Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		GFL0109743	GFL0092727	GFL0071535
Sample Date		Client Info		08 Feb 2024	03 Nov 2023	26 Apr 2023
Machine Age	hrs	Client Info		15602	8116	8116
Oil Age	hrs	Client Info		497	246	600
Filter Age	hrs	Client Info		497	0	600
Oil Changed		Client Info		Changed	Not Changed	Changed
Filter Changed		Client Info		Changed	Not Changed	Changed
Sample Status				ABNORMAL	NORMAL	ABNORMAL

WEAR

Cylinder, crank, or cam shaft wear is indicated. Exhaust valve wear is indicated.

Iron	ppm	ASTM D5185m	>90	▲ 129	25	15
Chromium	ppm	ASTM D5185m	>20	4	1	<1
Nickel	ppm	ASTM D5185m	>2	▲ 4	<1	0
Titanium	ppm	ASTM D5185m	>2	1	<1	0
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>20	▲ 24	7	3
Lead	ppm	ASTM D5185m	>40	0	0	0
Copper	ppm	ASTM D5185m	>330	60	8	1
Tin	ppm	ASTM D5185m	>15	2	3	0
Vanadium	ppm	ASTM D5185m		<1	<1	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

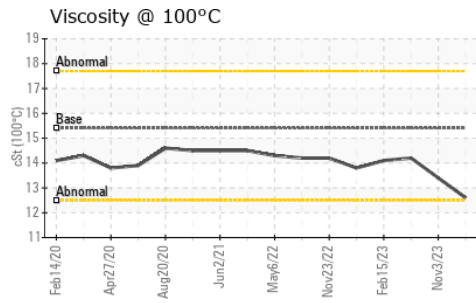
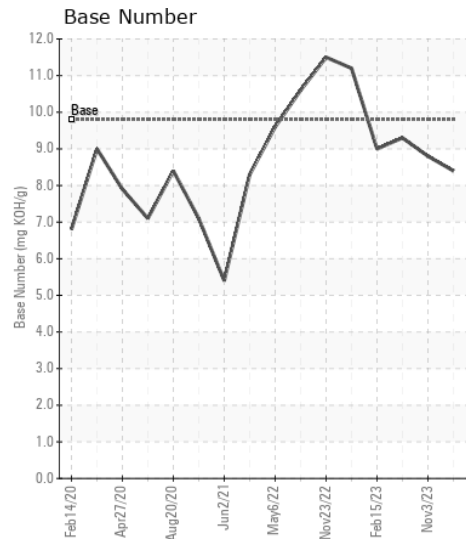
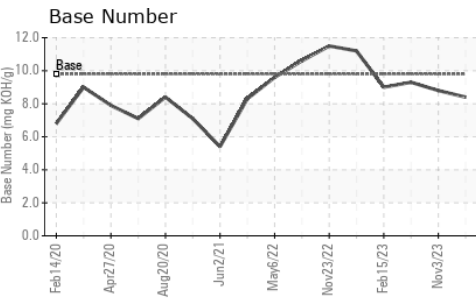
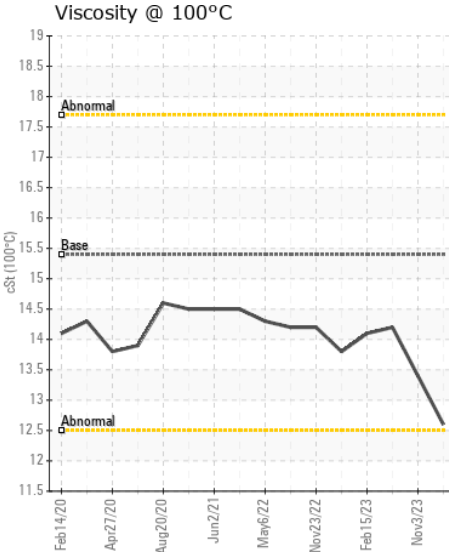
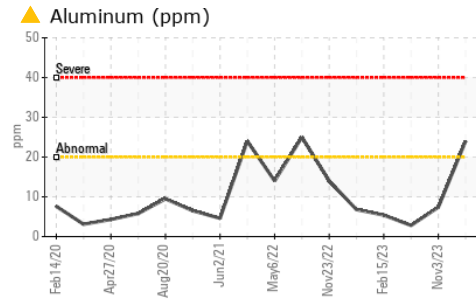
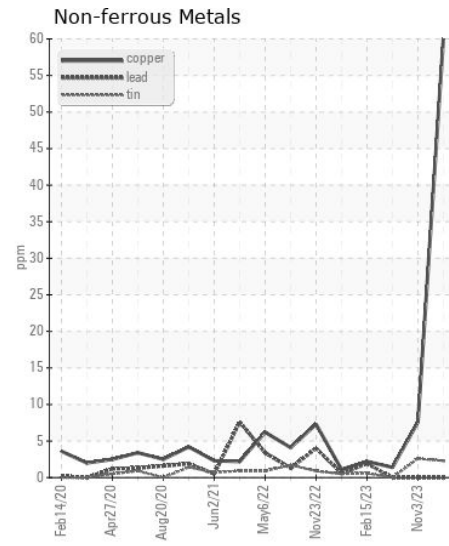
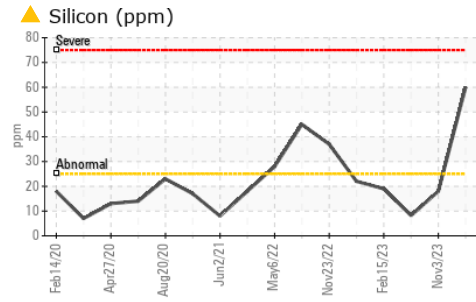
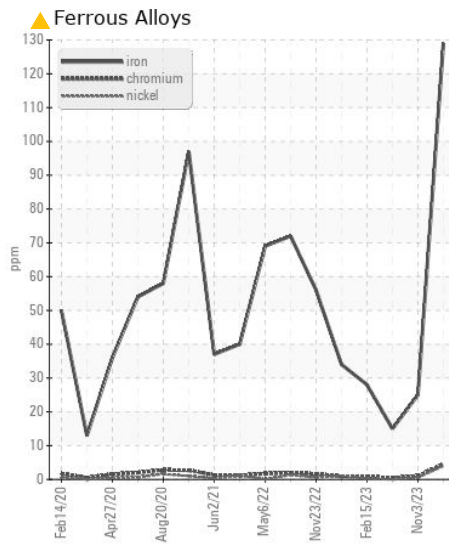
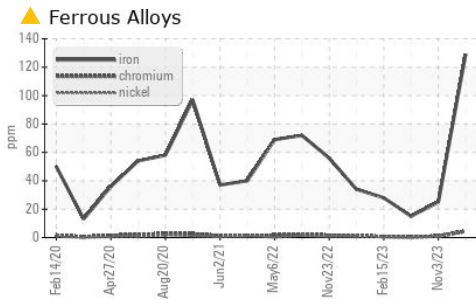
Elemental levels of silicon (Si) and aluminum (Al) indicate alumina-silicate (coarse dirt) ingress.

Silicon	ppm	ASTM D5185m	>25	▲ 60	18	8
Potassium	ppm	ASTM D5185m	>20	27	6	▲ 166
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
Soot %	%	*ASTM D7844	>6	0.9	0.5	0.3
Nitration	Abs/cm	*ASTM D7624	>20	11.5	6.1	7.3
Sulfation	Abs/.1mm	*ASTM D7415	>30	23.7	20.9	19.5
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. The condition of the oil is acceptable for the time in service.

Sodium	ppm	ASTM D5185m		29	7	▲ 208
Boron	ppm	ASTM D5185m	0	25	41	4
Barium	ppm	ASTM D5185m	0	0	0	0
Molybdenum	ppm	ASTM D5185m	60	42	50	69
Manganese	ppm	ASTM D5185m	0	2	<1	<1
Magnesium	ppm	ASTM D5185m	1010	470	730	1028
Calcium	ppm	ASTM D5185m	1070	1403	1586	1171
Phosphorus	ppm	ASTM D5185m	1150	704	921	1081
Zinc	ppm	ASTM D5185m	1270	839	1174	1376
Sulfur	ppm	ASTM D5185m	2060	2042	2993	3615
Oxidation	Abs/.1mm	*ASTM D7414	>25	23.8	17.6	15.0
Base Number (BN)	mg KOH/g	ASTM D2896	9.8	8.4	8.8	9.3
Visc @ 100°C	cSt	ASTM D445	15.4	12.6	13.4	14.2



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : GFL0109743
Lab Number : 06086892
Unique Number : 10874337
Test Package : FLEET

GFL Environmental - 005 - Wilson/Tri-East(CNG)
 2810 Contentnea Road S
 Wilson, NC
 US 27893-8501
 Contact: SPENCER LIGGON
 spencer.liggon@gflenv.com
 T: (800)207-6618
 F:

Certificate L2367
 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)