



Machine Id
724002
 Component
Diesel Engine
 Fluid
PETRO CANADA DURON SHP 15W40 (26 QTS)

RECOMMENDATION

We advise that you check the air filter, air induction system, and any areas where dirt may enter the component. The oil change at the time of sampling has been noted. We advise that you inspect for the source(s) of wear. We recommend an early resample to monitor this condition.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		GFL0121420	GFL0115832	GFL0111008
Sample Date		Client Info		16 May 2024	01 May 2024	14 Feb 2024
Machine Age	hrs	Client Info		22551	22545	22508
Oil Age	hrs	Client Info		496	490	0
Filter Age	hrs	Client Info		0	0	0
Oil Changed		Client Info		Changed	Not Changed	N/A
Filter Changed		Client Info		N/A	N/A	N/A
Sample Status				SEVERE	NORMAL	ABNORMAL

WEAR

A sharp increase in the iron and chrome levels is noted. Cylinder, crank, or cam shaft wear is indicated.

Iron	ppm	ASTM D5185m	>75	▲ 299	4	▲ 167
Chromium	ppm	ASTM D5185m	>5	▲ 11	0	5
Nickel	ppm	ASTM D5185m	>4	3	0	3
Titanium	ppm	ASTM D5185m	>2	0	0	<1
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>15	● 19	1	10
Lead	ppm	ASTM D5185m	>25	0	2	0
Copper	ppm	ASTM D5185m	>100	2	0	2
Tin	ppm	ASTM D5185m	>4	0	<1	0
Vanadium	ppm	ASTM D5185m		0	0	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

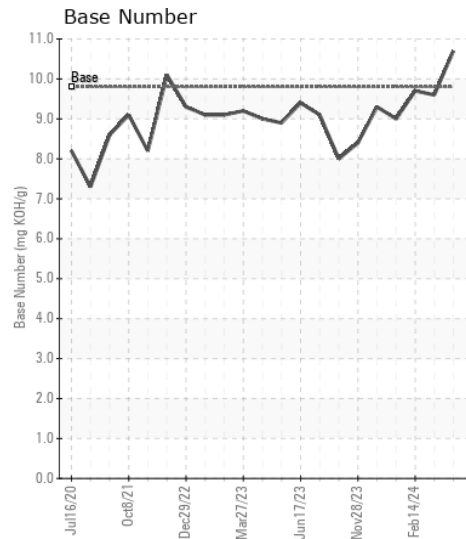
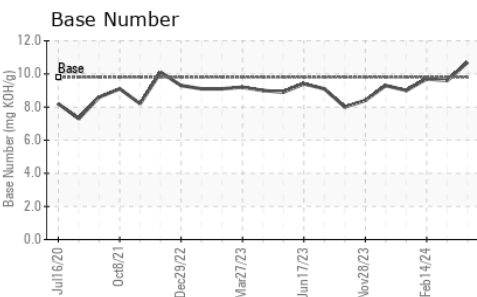
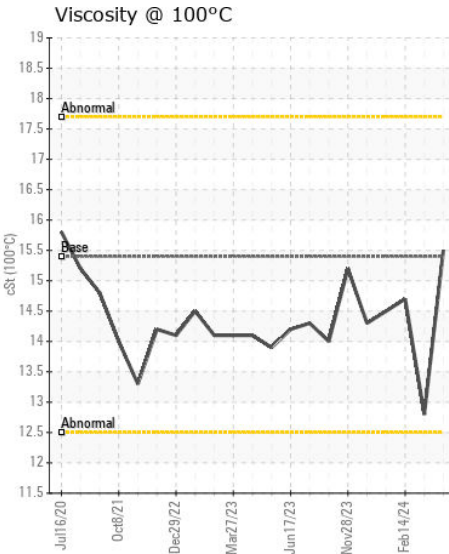
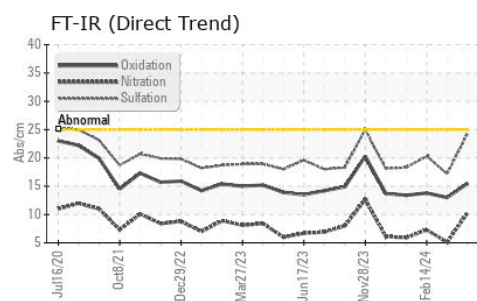
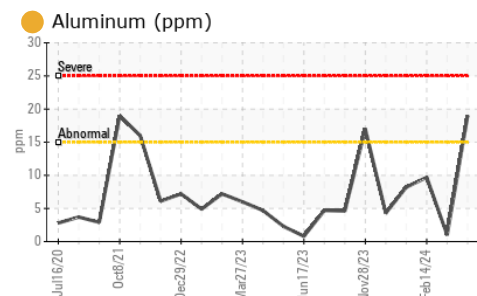
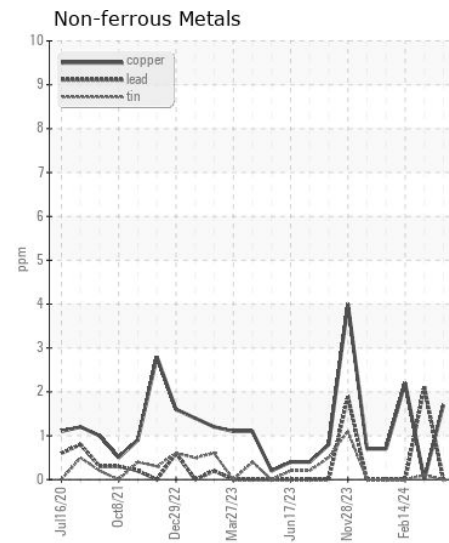
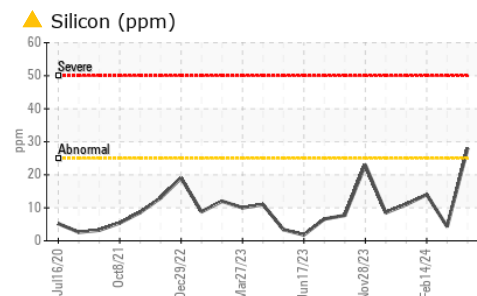
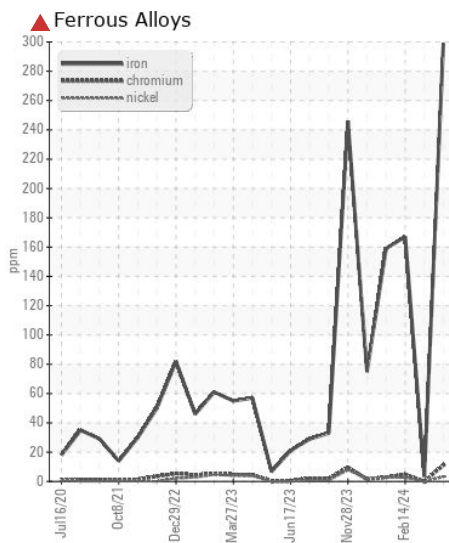
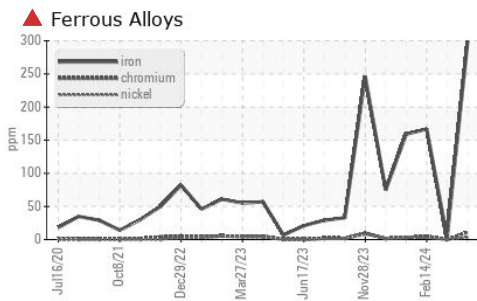
Elemental levels of silicon (Si) and aluminum (Al) indicate alumina-silicate (coarse dirt) ingress.

Silicon	ppm	ASTM D5185m	>25	▲ 28	4	14
Potassium	ppm	ASTM D5185m	>20	8	2	3
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	2.9	0.1	1.4
Nitration	Abs/cm	*ASTM D7624	>20	10.3	5.1	7.3
Sulfation	Abs/.1mm	*ASTM D7415	>30	24.3	17.2	20.3
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. The oil is no longer serviceable as a result of the abnormal and/or severe wear.

Sodium	ppm	ASTM D5185m		10	12	5
Boron	ppm	ASTM D5185m	0	1	11	6
Barium	ppm	ASTM D5185m	0	0	0	0
Molybdenum	ppm	ASTM D5185m	60	70	65	63
Manganese	ppm	ASTM D5185m	0	<1	<1	1
Magnesium	ppm	ASTM D5185m	1010	993	908	945
Calcium	ppm	ASTM D5185m	1070	1188	1033	1127
Phosphorus	ppm	ASTM D5185m	1150	1094	1040	1045
Zinc	ppm	ASTM D5185m	1270	1327	1187	1217
Sulfur	ppm	ASTM D5185m	2060	3472	3496	3068
Oxidation	Abs/.1mm	*ASTM D7414	>25	15.5	13.0	13.8
Base Number (BN)	mg KOH/g	ASTM D2896	9.8	10.7	9.6	9.7
Visc @ 100°C	cSt	ASTM D445	15.4	15.5	12.8	14.7



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : GFL0121420
Lab Number : 06187483
Unique Number : 11044235
Test Package : FLEET
Received : 22 May 2024
Tested : 23 May 2024
Diagnosed : 24 May 2024 - Don Baldrige

GFL Environmental - 868 - Childersburg Fines Hauling (Alpine)
 13737 Plant Rd
 Childersburg, AL
 US 35044
Contact: JONATHAN WILLIAMS
 jonathan.williams@gflenv.com
 T:
 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)