



WEAR	NORMAL
CONTAMINATION	ABNORMAL
FLUID CONDITION	NORMAL



Area
(LZ2431)
Machine Id
2408
Component
Diesel Engine
Fluid
PETRO CANADA DURON SHP 15W40 (42 QTS)

RECOMMENDATION

The oil change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		GFL0094897	GFL0090142	GFL0090130
Sample Date		Client Info		20 May 2024	06 May 2024	25 Jan 2024
Machine Age	hrs	Client Info		17148	17109	16586
Oil Age	hrs	Client Info		17148	17109	16586
Filter Age	hrs	Client Info		562	523	632
Oil Changed		Client Info		Changed	Not Changed	Changed
Filter Changed		Client Info		Changed	Not Changed	Changed
Sample Status				ABNORMAL	ABNORMAL	ABNORMAL

WEAR

All component wear rates are normal.

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

CONTAMINATION

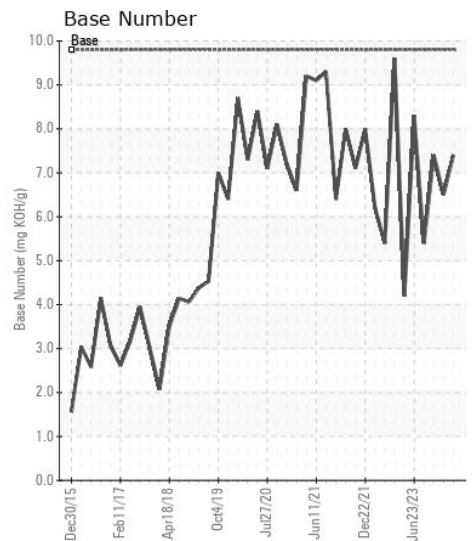
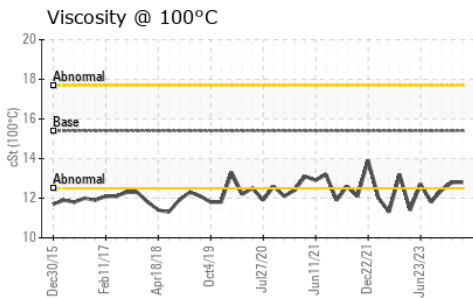
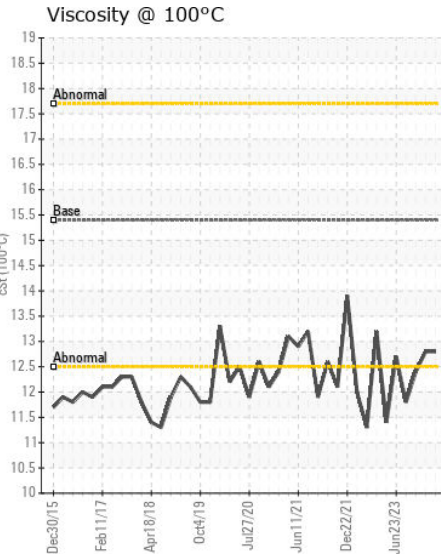
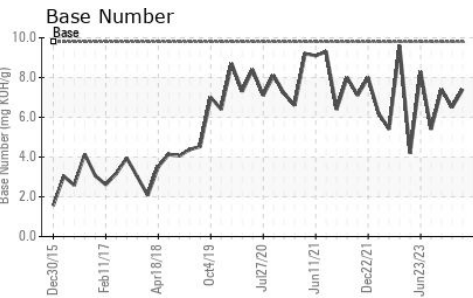
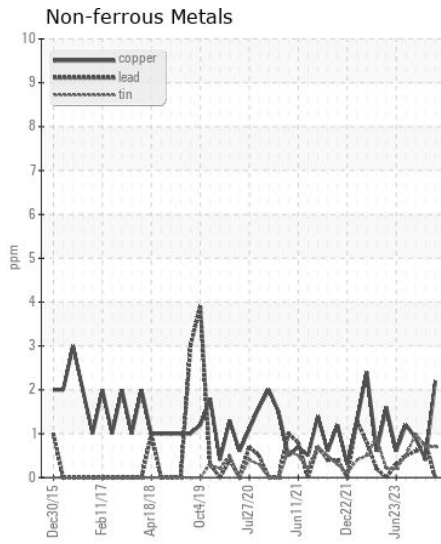
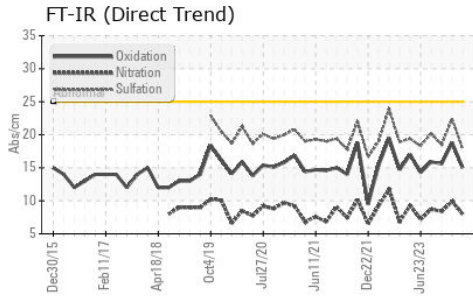
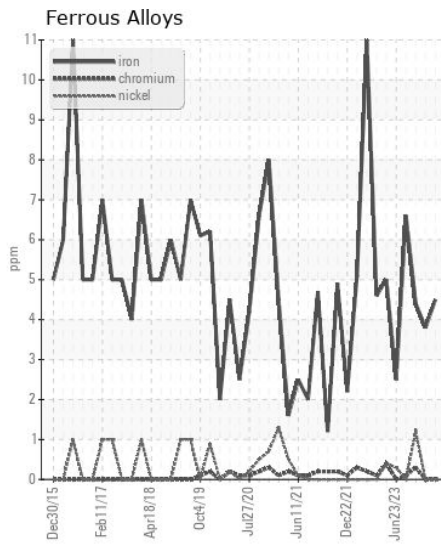
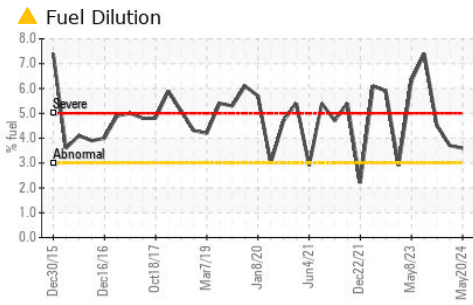
There is a moderate amount of fuel present in the oil. Tests confirm the presence of fuel in the oil.

Silicon	ppm	ASTM D5185m	>25	6	5	3
Potassium	ppm	ASTM D5185m	>20	1	2	0
Fuel	%	ASTM D3524	>3.0	▲ 3.6	▲ 3.7	▲ 4.5
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>4	0.2	0.9	0.2
Nitration	Abs/cm	*ASTM D7624	>20	8.0	9.9	8.4
Sulfation	Abs/.1mm	*ASTM D7415	>30	17.9	22.4	18.5
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 oil is no longer serviceable due to the presence of contaminants.

Sodium	ppm	ASTM D5185m		5	2	3
Boron	ppm	ASTM D5185m	0	2	3	<1
Barium	ppm	ASTM D5185m	0	0	0	0
Molybdenum	ppm	ASTM D5185m	60	58	56	54
Manganese	ppm	ASTM D5185m	0	<1	<1	<1
Magnesium	ppm	ASTM D5185m	1010	921	884	843
Calcium	ppm	ASTM D5185m	1070	1038	1011	972
Phosphorus	ppm	ASTM D5185m	1150	1015	1007	913
Zinc	ppm	ASTM D5185m	1270	1223	1192	1079
Sulfur	ppm	ASTM D5185m	2060	3461	3431	2428
Oxidation	Abs/.1mm	*ASTM D7414	>25	15.0	18.8	15.6
Base Number (BN)	mg KOH/g	ASTM D2896	9.8	7.4	6.5	7.4
Visc @ 100°C	cSt	ASTM D445	15.4	12.8	12.8	▲ 12.4



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : GFL0094897 **Received** : 21 May 2024
Lab Number : 06185828 **Tested** : 24 May 2024
Unique Number : 11042580 **Diagnosed** : 24 May 2024 - Wes Davis
Test Package : FLEET (Additional Tests: PercentFuel)

GFL Environmental - 044 - Elizabeth City
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 Elizabeth City, NC
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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)