

GLYCOL



Machine Id

0858

Component

Diesel Engine

Fluid

PETRO CANADA DURON HP 15W40 (24 LTR)

DIAGNOSIS

Recommendation

We advise that you check for the source of the coolant leak. We recommend that you drain the oil from the component if this has not already been done. We advise that you flush the component thoroughly before re-filling with oil. We recommend an early resample to monitor this condition. (Customer Sample Comment: Early oil sample to monitor condition.)

Wear

All component wear rates are normal.

Contamination

Test for glycol is positive. There is a light concentration of glycol present in the oil.

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.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number	Client Info			PC0080627	PC0082785	PC0082830
Sample Date	Client Info			29 Apr 2024	12 Mar 2024	08 Jan 2024
Machine Age	kms	Client Info		1010975	1005281	991610
Oil Age	kms	Client Info		5074	13671	15557
Oil Changed	Client Info			Not Chngd	Changed	Changed
Sample Status				ABNORMAL	SEVERE	ABNORMAL

CONTAMINATION		method	limit/base	current	history1	history2
Fuel	WC Method	>5		<1.0	0.7	1.1
Water	WC Method	>0.2		NEG	NEG	NEG

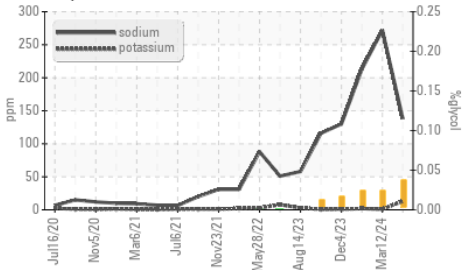
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m)	>100	39	73	77
Chromium	ppm	ASTM D5185(m)	>20	1	2	3
Nickel	ppm	ASTM D5185(m)	>4	<1	<1	<1
Titanium	ppm	ASTM D5185(m)		0	0	0
Silver	ppm	ASTM D5185(m)	>3	0	0	0
Aluminum	ppm	ASTM D5185(m)	>20	6	9	11
Lead	ppm	ASTM D5185(m)	>40	2	6	6
Copper	ppm	ASTM D5185(m)	>330	3	7	7
Tin	ppm	ASTM D5185(m)	>15	0	0	<1
Antimony	ppm	ASTM D5185(m)		0	0	0
Vanadium	ppm	ASTM D5185(m)		0	0	0
Beryllium	ppm	ASTM D5185(m)		0	0	0
Cadmium	ppm	ASTM D5185(m)		0	0	0

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185(m)	0	6	10	10
Barium	ppm	ASTM D5185(m)	0	0	0	0
Molybdenum	ppm	ASTM D5185(m)	60	65	71	70
Manganese	ppm	ASTM D5185(m)	0	<1	0	<1
Magnesium	ppm	ASTM D5185(m)	1010	997	1021	1020
Calcium	ppm	ASTM D5185(m)	1070	1105	1200	1209
Phosphorus	ppm	ASTM D5185(m)	1150	1010	1042	1079
Zinc	ppm	ASTM D5185(m)	1270	1191	1249	1265
Sulfur	ppm	ASTM D5185(m)	2060	2476	2495	2669
Lithium	ppm	ASTM D5185(m)		<1	<1	<1

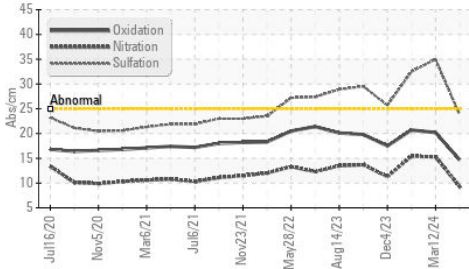
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m)	>25	5	9	9
Sodium	ppm	ASTM D5185(m)		138	272	213
Potassium	ppm	ASTM D5185(m)	>20	13	1	2
Glycol	%	ASTM D7922*		0.037	0.025	0.025

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	ASTM D7844*	>3	2.3	5.5	4.5
Nitration	Abs/cm	ASTM D7624*	>20	9.3	15.3	15.4
Sulfation	Abs./1mm	ASTM D7415*	>30	23.8	35.0	32.5

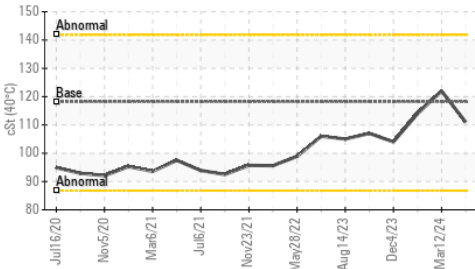
▲ Glycol Contamination



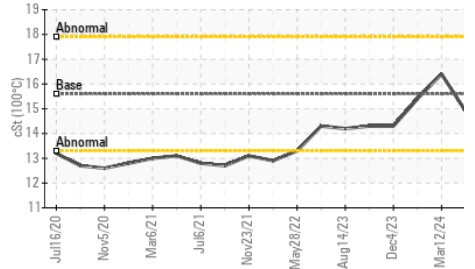
FT-IR (Direct Trend)



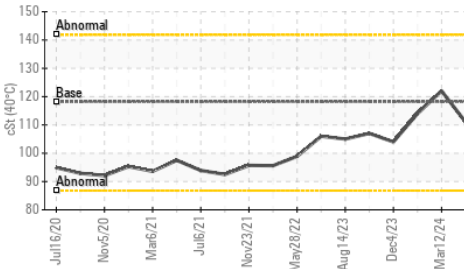
Viscosity @ 40°C



Viscosity @ 100°C



Viscosity @ 40°C



FLUID DEGRADATION

method	limit/base	current	history1	history2	
Oxidation	Abs./1mm ASTM D7414*	>25	14.7	20.2	20.7
Base Number (BN)	mg KOH/g ASTM D2896*	9.8	10.18	---	---

VISUAL

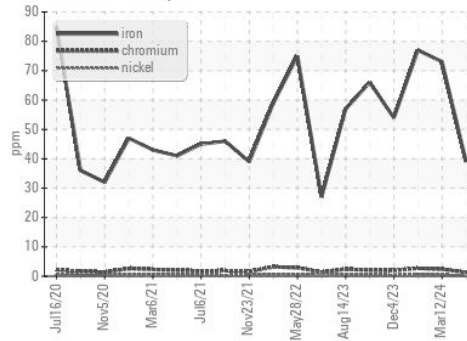
method	limit/base	current	history1	history2	
Emulsified Water	scalar Visual*	>0.2	NEG	NEG	NEG
Free Water	scalar Visual*		NEG	NEG	NEG

FLUID PROPERTIES

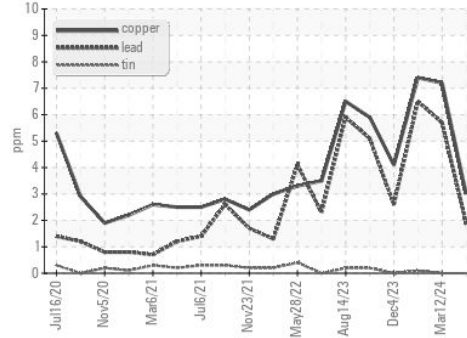
method	limit/base	current	history1	history2	
Visc @ 40°C	cSt ASTM D7279(m)	118.2	111	122	114
Visc @ 100°C	cSt ASTM D7279(m)	15.6	14.9	16.4	15.4
Viscosity Index (VI)	Scale ASTM D2270*	139	139	144	141

GRAPHS

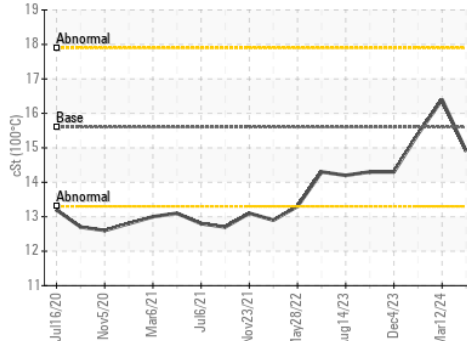
Ferrous Alloys



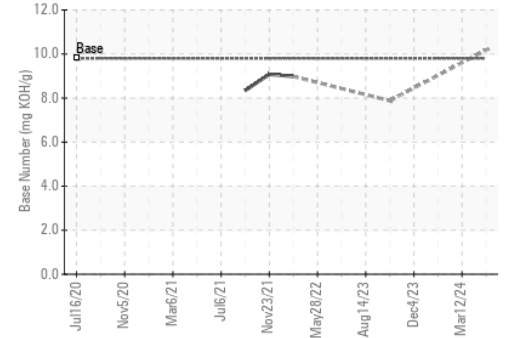
Non-ferrous Metals



Viscosity @ 100°C



Base Number



ISO 17025:2017
Accredited
Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : PC0080627
Lab Number : 02633048
Unique Number : 5774201
Test Package : IND 2 (Additional Tests: Glycol, KV40, VI)
Received : 03 May 2024
Tested : 06 May 2024
Diagnosed : 06 May 2024 - Kevin Marson

To discuss this sample report, contact Customer Service at 1-800-268-2131.
 Test denoted (*) outside scope of accreditation, (m) method modified, (e) tested at external lab.
 Validity of results and interpretation are based on the sample and information as supplied.

Metrobus Transit
 25 Messenger Drive
 St. John's, NL
 CA A1B 0H6
 Contact: Danny Oliver
 danny.oliver@metrobus.com
 T: (709)570-2025
 F: