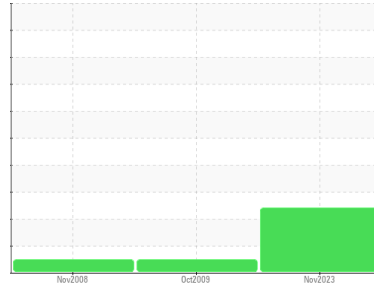


Area
[450219426]

Machine Id
Emergency Starting Oil (S/N Sample Tag CD-63207-S1)

Component
Diesel Engine

Fluid
PETRO CANADA DURON HP 15W40 (--- LTR)



DIAGNOSIS

Recommendation

We advise that you check for the source of water entry. We recommend that you change the oil at the next available stoppage or outage. We recommend an early resample to monitor this condition. Please specify the component make and model with your next sample.

Wear

All component wear rates are normal.

Contamination

Light fuel dilution occurring. There is a moderate concentration of water present in the oil. Free water present. Test for glycol is negative. No other contaminants were detected 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			PC	WC	PC
Sample Date	Client Info			24 Nov 2023	17 Oct 2009	02 Nov 2008
Machine Age	hrs	Client Info		0	0	0
Oil Age	hrs	Client Info		0	0	0
Oil Changed	Client Info			N/A	N/A	N/A
Sample Status				ABNORMAL	NORMAL	NORMAL

CONTAMINATION		method	limit/base	current	history1	history2
Water	WC Method		>0.2	NEG	NEG	NEG

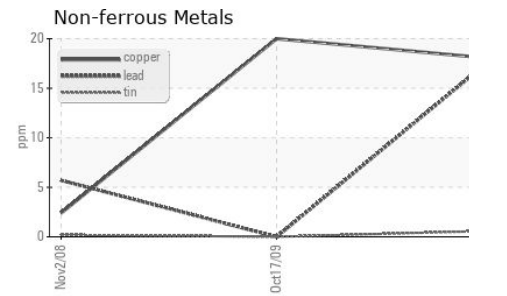
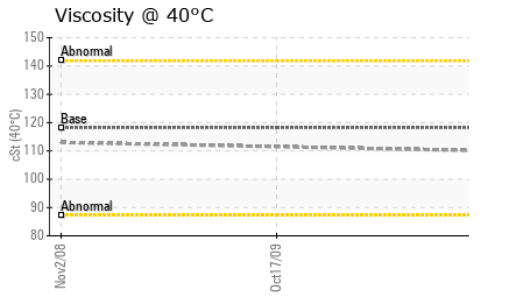
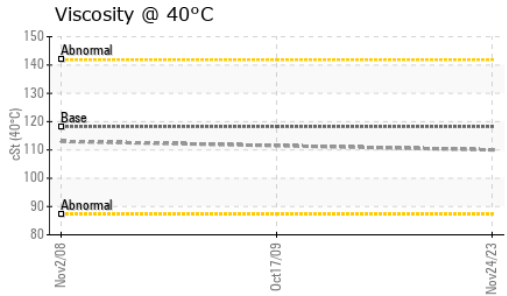
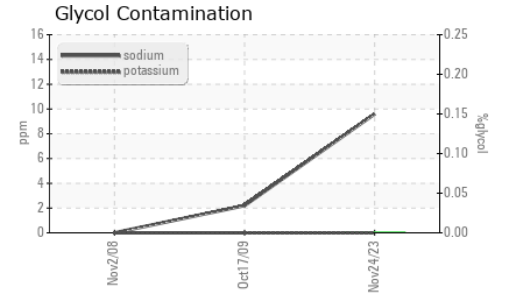
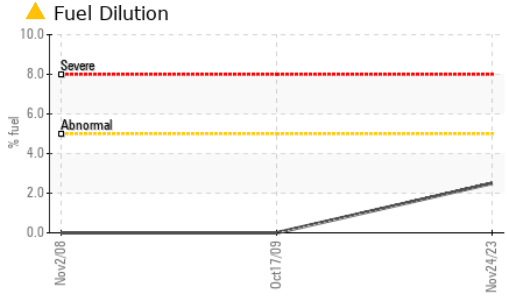
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m)	>100	56	16	6
Chromium	ppm	ASTM D5185(m)	>20	4	<1	<1
Nickel	ppm	ASTM D5185(m)	>4	<1	0	0
Titanium	ppm	ASTM D5185(m)		0	<1	<1
Silver	ppm	ASTM D5185(m)	>3	0	<1	<1
Aluminum	ppm	ASTM D5185(m)	>20	4	1	2
Lead	ppm	ASTM D5185(m)	>40	18	0	6
Copper	ppm	ASTM D5185(m)	>330	18	20	2
Tin	ppm	ASTM D5185(m)	>15	<1	0	<1
Antimony	ppm	ASTM D5185(m)		0	---	---
Vanadium	ppm	ASTM D5185(m)		0	0	<1
Beryllium	ppm	ASTM D5185(m)		0	---	---
Cadmium	ppm	ASTM D5185(m)		0	---	---

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185(m)	0	3	2	2
Barium	ppm	ASTM D5185(m)	0	0	<1	<1
Molybdenum	ppm	ASTM D5185(m)	60	42	<1	2
Manganese	ppm	ASTM D5185(m)	0	0	<1	<1
Magnesium	ppm	ASTM D5185(m)	1010	871	8	9
Calcium	ppm	ASTM D5185(m)	1070	955	2424	3318
Phosphorus	ppm	ASTM D5185(m)	1150	1010	1065	1186
Zinc	ppm	ASTM D5185(m)	1270	1086	1235	1336
Sulfur	ppm	ASTM D5185(m)	2060	2786	3311	4009
Lithium	ppm	ASTM D5185(m)		<1	---	---

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m)	>25	10	5	10
Sodium	ppm	ASTM D5185(m)		10	2	0
Potassium	ppm	ASTM D5185(m)	>20	0	0	0
Fuel	%	ASTM D7593*	>5	▲ 2.5	<1.0	<1.0
Glycol	%	ASTM D7922*		0.0	NEG	NEG

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	ASTM D7844*	>3	0.1	0	0
Nitration	Abs/cm	ASTM D7624*	>20	8.0	5.4	4.1
Sulfation	Abs/.1mm	ASTM D7415*	>30	13.1	20.6	19.1

OIL ANALYSIS REPORT

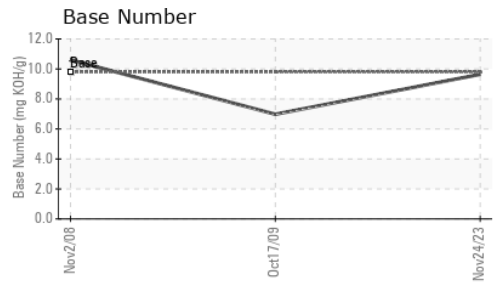
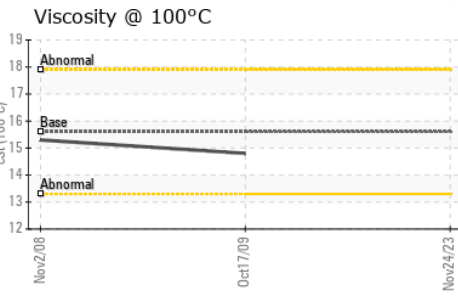
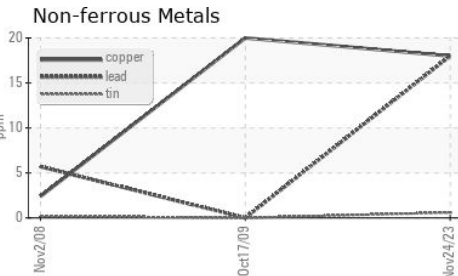
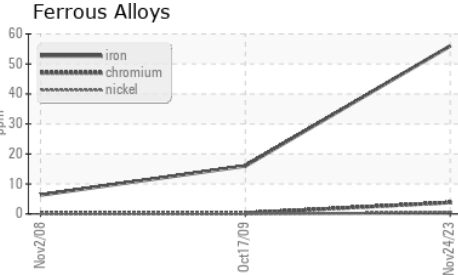


FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs./1mm	ASTM D7414*	>25	12.3	13.7	12.7
Base Number (BN)	mg KOH/g	ASTM D2896*	9.8	9.64	6.98	10.6

VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	Visual*	NONE	NONE	VLITE	LIGHT
Yellow Metal	scalar	Visual*	NONE	NONE	NONE	NONE
Precipitate	scalar	Visual*	NONE	NONE	NONE	NONE
Silt	scalar	Visual*	NONE	NONE	NONE	NONE
Debris	scalar	Visual*	NONE	NONE	VLITE	VLITE
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	▲ 1%	NEG	NEG
Free Water	scalar	Visual*		▲ 5%	NEG	NEG

FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D7279(m)	118.2	110	---	113
Visc @ 100°C	cSt	ASTM D7279(m)	15.6	---	14.8	15.3
Viscosity Index (VI)	Scale	ASTM D2270*	139	---	---	141

GRAPHS



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : PC
Lab Number : 02605525
Unique Number : 5698610
Test Package : MAR 2 (Additional Tests: FuelDilution, Glycol, KV40, PercentFuel, VI, Visual)
*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.*

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