



OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Area

CANADIAN COAST GUARD

Machine Id

AMUNDSEN (S/N 524101596)

Component

Right Diesel Engine

Fluid

PETRO CANADA DURON E XL 15W40 (300 LTR)

RECOMMENDATION

Confirm the source of the lubricant being utilized for top-up/fill. Resample at the next service interval to monitor. Please contact your representative for information regarding the proper sampling kits for your service. NOTE: We recommend using MAR 3 test kits, this testkit includes Analytical Ferrography which provides a detailed morphological analysis of wear particles present in the fluid. this testkit includes BN to determine the suitability of the oil for continued use.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		WC0829227	WA0019035	AP74749
Sample Date		Client Info		24 Oct 2023	01 Dec 2022	05 Jun 2014
Machine Age	hrs	Client Info		28456	28118	2000
Oil Age	hrs	Client Info		0	3	500
Filter Age	hrs	Client Info		28120	3	500
Oil Changed		Client Info		Not Changd	N/A	Not Changd
Filter Changed		Client Info		N/A	N/A	N/A
Sample Status				NORMAL	NORMAL	NORMAL

WEAR

Component wear rates appear to be normal (unconfirmed).

Iron	ppm	ASTM D5185(m)	>100	3	2	3
Chromium	ppm	ASTM D5185(m)	>20	0	0	0
Nickel	ppm	ASTM D5185(m)	>4	0	0	<1
Titanium	ppm	ASTM D5185(m)		0	<1	<1
Silver	ppm	ASTM D5185(m)	>3	<1	0	0
Aluminum	ppm	ASTM D5185(m)	>20	1	2	2
Lead	ppm	ASTM D5185(m)	>40	<1	<1	<1
Copper	ppm	ASTM D5185(m)	>330	2	1	5
Tin	ppm	ASTM D5185(m)	>15	0	0	0
Vanadium	ppm	ASTM D5185(m)		0	0	0
White Metal	scalar	Visual*	NONE	NONE	---	---
Yellow Metal	scalar	Visual*	NONE	NONE	---	---

CONTAMINATION

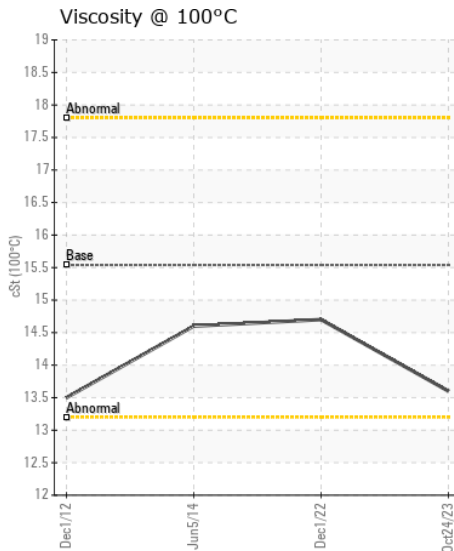
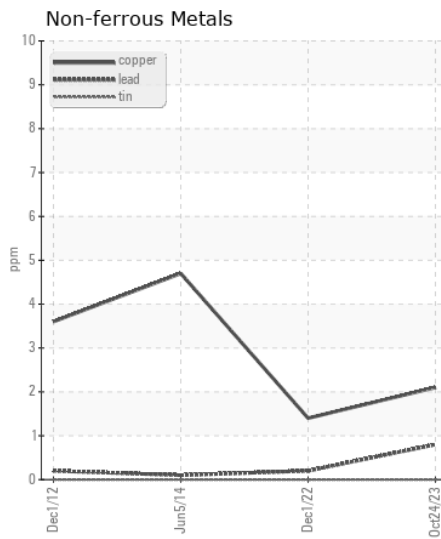
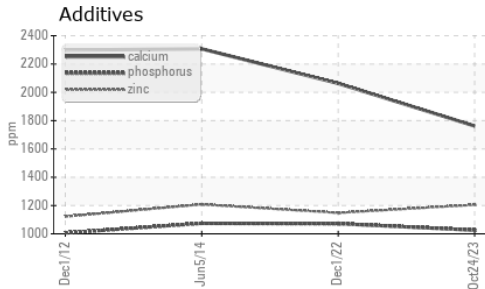
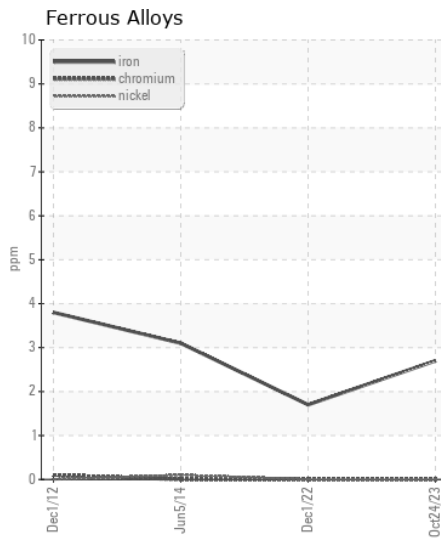
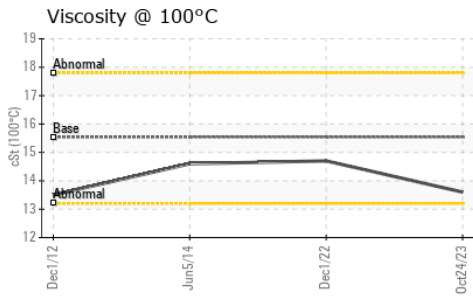
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185(m)	>25	2	5	2
Potassium	ppm	ASTM D5185(m)	>20	0	<1	1
Fuel		WC Method	>5	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	ASTM D7844*	>3	0	0	0
Nitration	Abs/cm	ASTM D7624*	>20	7.0	6.6	5.6
Sulfation	Abs/.1mm	ASTM D7415*	>30	18.2	18.2	23.5
Silt	scalar	Visual*	NONE	NONE	---	---
Debris	scalar	Visual*	NONE	NONE	---	---
Sand/Dirt	scalar	Visual*	NONE	NONE	---	---
Appearance	scalar	Visual*	NORML	NORML	---	---
Odor	scalar	Visual*	NORML	NORML	NORML	---
Emulsified Water	scalar	Visual*	>0.2	NEG	NEG	NEG

FLUID CONDITION

Additive levels indicate the addition of a different brand, or type of oil. The condition of the oil is acceptable for the time in service (unconfirmed).

Sodium	ppm	ASTM D5185(m)		1	1	3
Boron	ppm	ASTM D5185(m)	1	36	61	78
Barium	ppm	ASTM D5185(m)	0	<1	<1	<1
Molybdenum	ppm	ASTM D5185(m)	60	30	14	<1
Manganese	ppm	ASTM D5185(m)	0	0	<1	<1
Magnesium	ppm	ASTM D5185(m)	1010	475	207	9
Calcium	ppm	ASTM D5185(m)	1070	1762	2063	2307
Phosphorus	ppm	ASTM D5185(m)	1150	1026	1072	1074
Zinc	ppm	ASTM D5185(m)	1270	1205	1148	1208
Sulfur	ppm	ASTM D5185(m)	2060	3014	3272	3553
Oxidation	Abs/.1mm	ASTM D7414*	>25	14.1	12.6	16.2
Visc @ 100°C	cSt	ASTM D7279(m)	15.54	13.6	14.7	14.6



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : WC0829227
Lab Number : 02593081
Unique Number : 5670160
Test Package : MAR 1
Received : 01 Nov 2023
Tested : 01 Nov 2023
Diagnosed : 01 Nov 2023 - Kevin Marson

Canadian Coast Guard
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 Quebec, QC
 CA G1K 7Y7
 Contact: Chief Engineer
 amundsense@ccgs-ngcc.gc.ca
 T: (418)953-8233
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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.