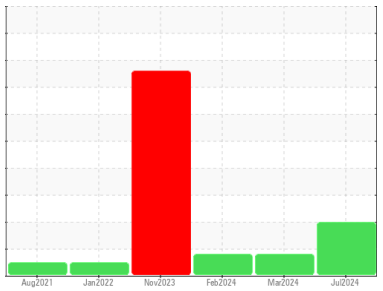
OIL ANALYSIS REPORT

Sample Rating Trend



WEAR

Area
(C-GIMW)
Machine Id
[C-GIMW] DIAMOND DA40F L-40158-36A
Component
Piston Aircraft Engine
Fluid
SHELL AEROSHELL W 80 (8 LTR)

DIAGNOSIS

Recommendation
We advise that you check the engine magneto timing. We advise that you monitor for an abnormal oil pressure drop and noise. We advise that you perform a compression test, and a borescope exam. The oil change at the time of sampling has been noted. We recommend an early resample to monitor this condition. Provided compression test checks O.K., resample in 20 to 25 hours to monitor.

Wear
Copper and iron ppm levels are abnormal. Cylinder wear is indicated. Bearing and/or bushing wear is indicated.

Contamination
There is no indication of any contamination in the oil.

Fluid Condition
Viscosity of sample indicates oil is within SAE 50 range, advise investigate. The oil is no longer serviceable as a result of the abnormal and/or severe wear.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**WC0956614**	WC0901544	WC0901543
Sample Date		Client Info		**11 Jul 2024**	04 Mar 2024	01 Feb 2024
TSN	hrs	Client Info		**0**	0	0
TSO	hrs	Client Info		**2095**	2056	2030
Oil Age	hrs	Client Info		**39**	27	26
Oil Changed		Client Info		**Changed**	Changed	N/A
Sample Status				**ABNORMAL**	ABNORMAL	ABNORMAL

CONTAMINATION		method	limit/base	current	history1	history2
Fuel		WC Method	>4.0	**<1.0**	<1.0	<1.0
Water		WC Method	>0.1	**NEG**	NEG	NEG
Glycol		WC Method		**NEG**	NEG	NEG

WEAR METALS		method	limit/base	current	history1	history2
PQ		ASTM D8184*	>200	**69**	71	24
Iron	ppm	ASTM D5185(m)	>90	▲ **169**	▲ 99	▲ 101
Chromium	ppm	ASTM D5185(m)	>20	**12**	6	5
Nickel	ppm	ASTM D5185(m)	>15	**8**	4	4
Titanium	ppm	ASTM D5185(m)		**<1**	0	0
Silver	ppm	ASTM D5185(m)	>5	**0**	<1	<1
Aluminum	ppm	ASTM D5185(m)	>25	**21**	8	11
Lead	ppm	ASTM D5185(m)	>20000	**5121**	2981	2874
Copper	ppm	ASTM D5185(m)	>25	▲ **30**	15	20
Tin	ppm	ASTM D5185(m)	>30	**<1**	0	0
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)		**<1**	0	<1

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185(m)		**<1**	<1	<1
Barium	ppm	ASTM D5185(m)		**<1**	<1	<1
Molybdenum	ppm	ASTM D5185(m)		**6**	3	3
Manganese	ppm	ASTM D5185(m)		**<1**	0	0
Magnesium	ppm	ASTM D5185(m)		**<1**	<1	1
Calcium	ppm	ASTM D5185(m)		**3**	2	3
Phosphorus	ppm	ASTM D5185(m)		**1071**	1133	1112
Zinc	ppm	ASTM D5185(m)		**16**	10	15
Sulfur	ppm	ASTM D5185(m)	3000	**2662**	2304	2325
Lithium	ppm	ASTM D5185(m)		**<1**	<1	<1

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m)	>15	**8**	6	7
Sodium	ppm	ASTM D5185(m)		**1**	<1	1
Potassium	ppm	ASTM D5185(m)	>20	**0**	1	<1

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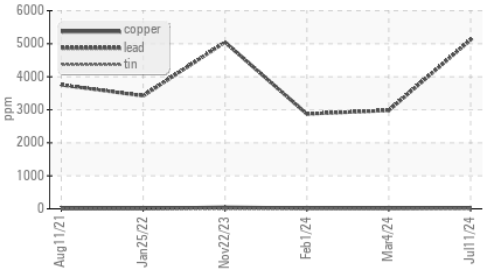
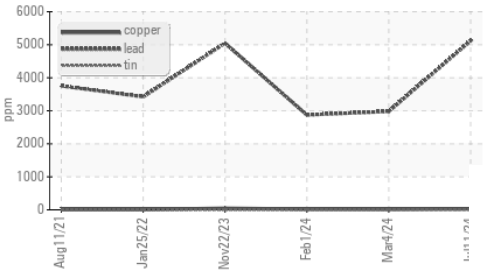
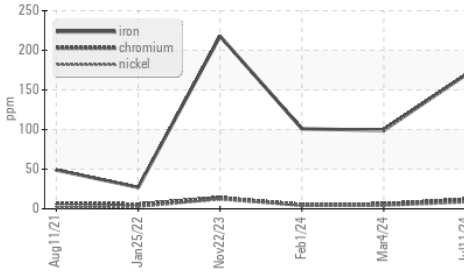
Non-ferrous Metals



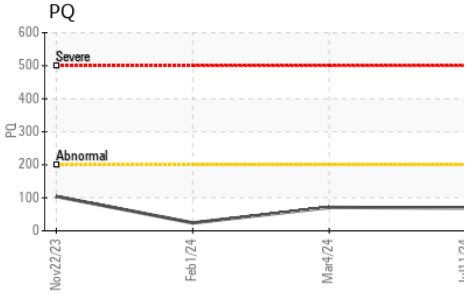
Non-ferrous Metals



Ferrous Alloys



PQ

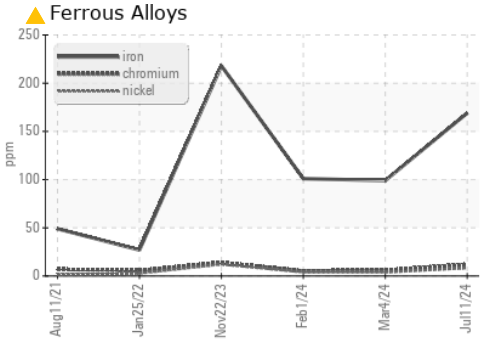


VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	Visual*	NONE	**VLITE**	NONE	NONE
Yellow Metal	scalar	Visual*	NONE	**NONE**	NONE	NONE
Precipitate	scalar	Visual*	NONE	**NONE**	NONE	NONE
Silt	scalar	Visual*	NONE	**VLITE**	NONE	NONE
Debris	scalar	Visual*	NONE	**NONE**	NONE	NONE
Sand/Dirt	scalar	Visual*	NONE	**NONE**	NONE	NONE
Appearance	scalar	Visual*	NORML	**NORML**	NORML	NORML
Odor	scalar	Visual*	NORML	**NORML**	NORML	NORML
Emulsified Water	scalar	Visual*	>0.1	**NEG**	NEG	NEG
Free Water	scalar	Visual*		**NEG**	NEG	NEG

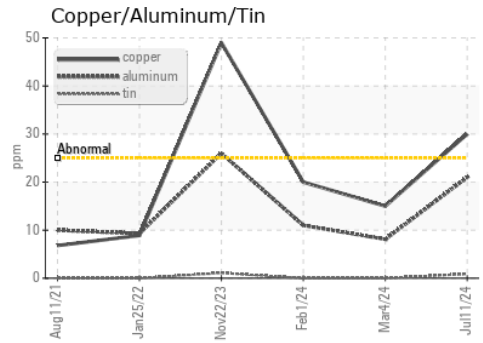
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D7279(m)	14.5	▲ **17.3**	15.2	15.5

GRAPHS

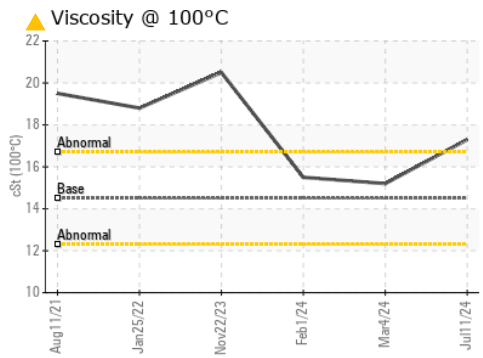
Ferrous Alloys



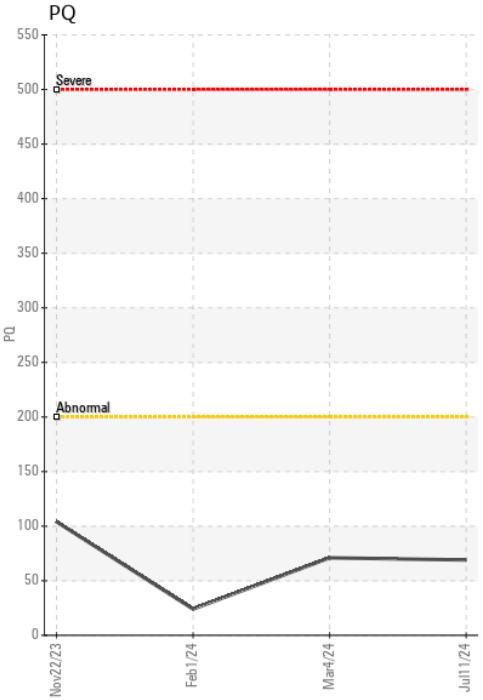
Copper/Aluminum/Tin



Viscosity @ 100°C



PQ



ISO 17025:2017 Accredited Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : WC0956614 **Received** : 12 Jul 2024
Lab Number : 02647622 **Tested** : 12 Jul 2024
Unique Number : 5813174 **Diagnosed** : 15 Jul 2024 - Kevin Marson
Test Package : AVI 1 (Additional Tests: PQ)

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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