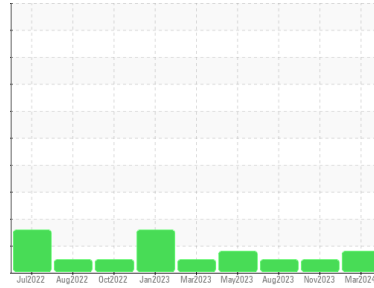




OIL ANALYSIS REPORT

Sample Rating Trend



WEAR



Area
(C-GCJH)
Machine Id
[C-GCJH] PIPER PA31-350 RL-4948-61A
Component
Left Piston Aircraft Engine
Fluid
PHILLIPS 66 AVIATION X/C OIL SAE20W50 (12 LTR)

DIAGNOSIS

▲ Recommendation

We advise that you check the engine tuning and timing. We advise that you check for excessive valve and valve guide clearance. We recommend that you drain the oil from the component if this has not already been done. We recommend an early resample to monitor this condition.

▲ Wear

Nickel ppm levels are abnormal. Exhaust valve wear is indicated.

Contamination

There is no indication of any contamination in the oil.

Fluid Condition

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		WC0886707	WC0754573	WC0826701
Sample Date	Client Info		07 Mar 2024	06 Nov 2023	14 Aug 2023
TSN	hrs	Client Info	8993	0	0
TSO	hrs	Client Info	1372	1171	966
Oil Age	hrs	Client Info	57	44	46
Oil Changed		Client Info	N/A	Changed	Changed
Sample Status			ABNORMAL	NORMAL	NORMAL

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	
Iron	ppm	ASTM D5185(m)	>90	66	41	34
Chromium	ppm	ASTM D5185(m)	>20	15	10	8
Nickel	ppm	ASTM D5185(m)	>15	▲ 21	13	8
Titanium	ppm	ASTM D5185(m)		0	0	<1
Silver	ppm	ASTM D5185(m)	>5	<1	<1	<1
Aluminum	ppm	ASTM D5185(m)	>25	10	7	6
Lead	ppm	ASTM D5185(m)	>20000	9385	8147	6748
Copper	ppm	ASTM D5185(m)	>25	19	8	6
Tin	ppm	ASTM D5185(m)	>30	0	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)		5	5	4

ADDITIVES

	method	limit/base	current	history1	history2	
Boron	ppm	ASTM D5185(m)	0.0	0	<1	<1
Barium	ppm	ASTM D5185(m)	0.0	0	0	0
Molybdenum	ppm	ASTM D5185(m)	0.0	<1	<1	<1
Manganese	ppm	ASTM D5185(m)	0.0	0	0	0
Magnesium	ppm	ASTM D5185(m)	0.0	5	2	2
Calcium	ppm	ASTM D5185(m)	4.7	1	1	2
Phosphorus	ppm	ASTM D5185(m)	0.0	0	<1	<1
Zinc	ppm	ASTM D5185(m)	0.1	2	2	3
Sulfur	ppm	ASTM D5185(m)	848	1050	990	1002
Lithium	ppm	ASTM D5185(m)		<1	<1	<1

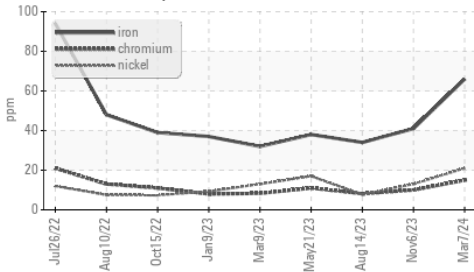
CONTAMINANTS

	method	limit/base	current	history1	history2	
Silicon	ppm	ASTM D5185(m)	>15	5	3	3
Sodium	ppm	ASTM D5185(m)		<1	<1	<1
Potassium	ppm	ASTM D5185(m)	>20	<1	0	<1

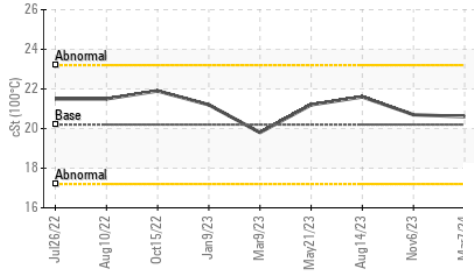


OIL ANALYSIS REPORT

▲ Ferrous Alloys



Viscosity @ 100°C

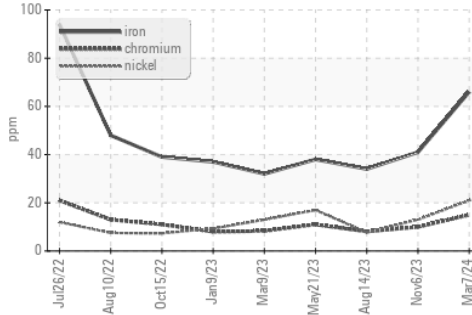


VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	Visual*	NONE	NONE	NONE
Yellow Metal	scalar	Visual*	NONE	NONE	NONE
Precipitate	scalar	Visual*	NONE	NONE	NONE
Silt	scalar	Visual*	NONE	NONE	VLITE
Debris	scalar	Visual*	NONE	NONE	VLITE
Sand/Dirt	scalar	Visual*	NONE	NONE	NONE
Appearance	scalar	Visual*	NORML	NORML	NORML
Odor	scalar	Visual*	NORML	NORML	NORML
Emulsified Water	scalar	Visual*	>0.1	NEG	.2%
Free Water	scalar	Visual*		NEG	NEG

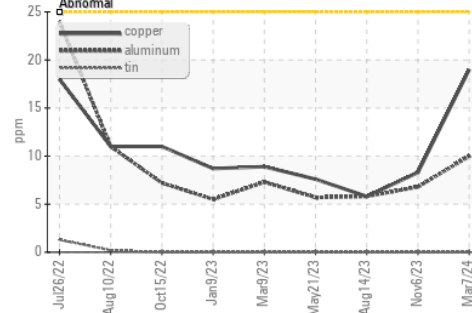
FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D7279(m)	20.2	20.6	20.7

GRAPHS

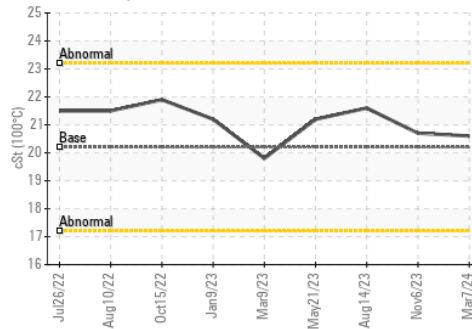
▲ Ferrous Alloys



Copper/Aluminum/Tin



Viscosity @ 100°C



ISO 17025:2017
Accredited
Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
 Sample No. : WC0886707
 Lab Number : 02621975
 Unique Number : 5747094
 Test Package : AVI 1

Received : 14 Mar 2024
 Tested : 14 Mar 2024
 Diagnosed : 14 Mar 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.

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