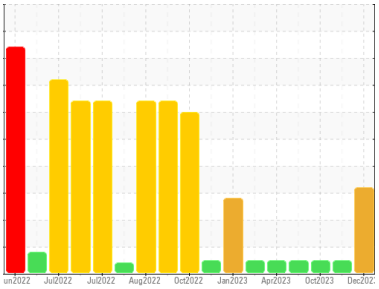
PROBLEM SUMMARY

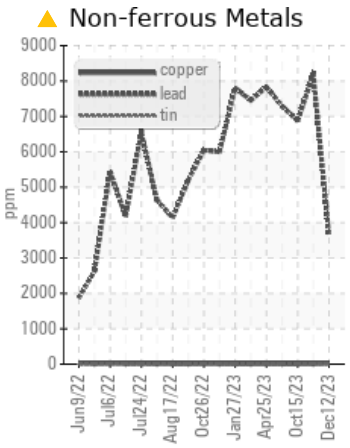
Sample Rating Trend

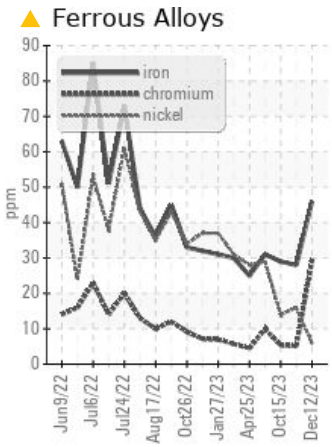


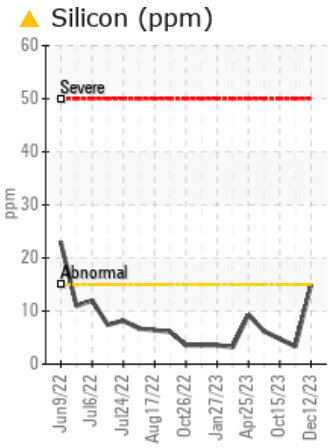
DIRT

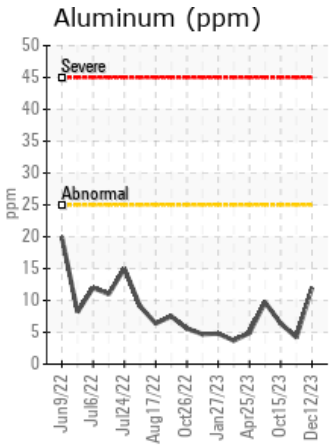
Area
(C-GJHX)
Machine Id
[C-GJHX] PIPER PA31-350 L-1340-68A
Component
Right Piston Aircraft Engine
Fluid
PHILLIPS 66 AVIATION X/C OIL SAE20W50 (12 LTR)

COMPONENT CONDITION SUMMARY









RECOMMENDATION

We advise that you check the air filter, air induction system, and any areas where dirt may enter the component. We advise that you check the engine magneto timing. We advise that you monitor for an abnormal oil pressure drop and noise. We recommend that you drain the oil from the component if this has not already been done. We recommend you service the filters on this component. We recommend an early resample to monitor this condition.

PROBLEMATIC TEST RESULTS

Sample Status				**ABNORMAL**	NORMAL	NORMAL
Chromium	ppm	ASTM D5185(m)	>20	▲ **29**	5	5
Copper	ppm	ASTM D5185(m)	>25	▲ **26**	6	6
Silicon	ppm	ASTM D5185(m)	>15	▲ **15**	3	5

Customer Id: SKYSIO
Sample No.: WC0838454
Lab Number: 02603182
Test Package: AVI 1

To manage this report scan the QR code

To discuss the diagnosis or test data:
Kevin Marson +1 (289)291-4644 x4644
Kevin.Marson@wearcheck.com

To change component or sample information:
Gloria Gonzalez +1 (289)291-4643 x4643
gloria.gonzalez@wearcheck.com

RECOMMENDED ACTIONS

Action	Status	Date	Done By	Description
Monitor	---	---	?	We advise that you monitor for an abnormal oil pressure drop and noise.
Change Fluid	---	---	?	We recommend that you drain the oil from the component if this has not already been done.
Change Filter	---	---	?	We recommend you service the filters on this component.
Resample	---	---	?	We recommend an early resample to monitor this condition.
Check Dirt Access	---	---	?	We advise that you check the air filter, air induction system, and any areas where dirt may enter the component.
Check Timing	---	---	?	We advise that you check the engine magneto timing.

HISTORICAL DIAGNOSIS

22 Nov 2023 Diag: Kevin Marson

NORMAL

Resample at the next service interval to monitor.All component wear rates are normal. The water content is negligible. There is no indication of any contamination in the oil. The condition of the oil is acceptable for the time in service.

view report

15 Oct 2023 Diag: Kevin Marson

NORMAL

Resample at the next service interval to monitor. Please note that this is a corrected copy for data entry updates.All component wear rates are normal. The water content is negligible. There is no indication of any contamination in the oil. The condition of the oil is acceptable for the time in service.

view report

11 Jul 2023 Diag: Kevin Marson

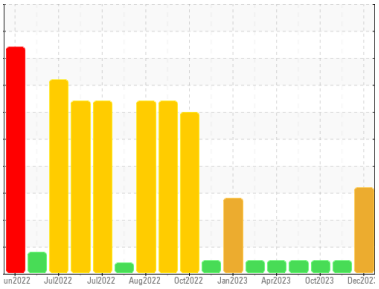
NORMAL

Resample at the next service interval to monitor.All component wear rates are normal. There is no indication of any contamination in the oil. The condition of the oil is acceptable for the time in service.

view report

OIL ANALYSIS REPORT

Sample Rating Trend



DIRT

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Component
Right Piston Aircraft Engine
Fluid
PHILLIPS 66 AVIATION X/C OIL SAE20W50 (12 LTR)

DIAGNOSIS

Recommendation

We advise that you check the air filter, air induction system, and any areas where dirt may enter the component. We advise that you check the engine magneto timing. We advise that you monitor for an abnormal oil pressure drop and noise. We recommend that you drain the oil from the component if this has not already been done. We recommend you service the filters on this component. We recommend an early resample to monitor this condition.

Wear

Chromium and copper ppm levels are abnormal. Ring wear is indicated. Bearing and/or bushing wear is indicated.

Contamination

There is a moderate concentration of dirt present in the oil. High amount of ingressed dirt has caused abrasive wear to the component.

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		**WC0838454**	WC0838456	WC0826684
Sample Date		Client Info		**12 Dec 2023**	22 Nov 2023	15 Oct 2023
TSN	hrs	Client Info		**0**	0	0
TSO	hrs	Client Info		**1261**	1230	1110
Oil Age	hrs	Client Info		**31**	50	44
Oil Changed		Client Info		**N/A**	Changed	Not Changd
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

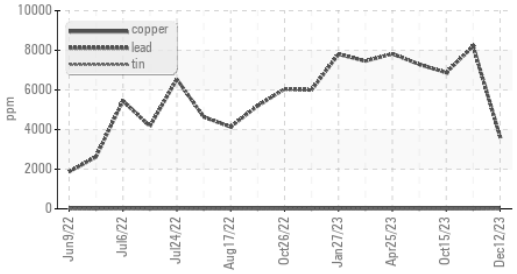
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m)	>80	**46**	28	29
Chromium	ppm	ASTM D5185(m)	>20	▲ **29**	5	5
Nickel	ppm	ASTM D5185(m)	>50	**6**	16	14
Titanium	ppm	ASTM D5185(m)		**0**	0	0
Silver	ppm	ASTM D5185(m)	>5	**<1**	<1	<1
Aluminum	ppm	ASTM D5185(m)	>25	**12**	4	6
Lead	ppm	ASTM D5185(m)	>20000	**3645**	8210	6875
Copper	ppm	ASTM D5185(m)	>25	▲ **26**	6	6
Tin	ppm	ASTM D5185(m)	>30	**2**	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	0

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185(m)	0.0	**<1**	<1	<1
Barium	ppm	ASTM D5185(m)	0.0	**<1**	0	<1
Molybdenum	ppm	ASTM D5185(m)	0.0	**1**	1	2
Manganese	ppm	ASTM D5185(m)	0.0	**<1**	0	0
Magnesium	ppm	ASTM D5185(m)	0.0	**4**	2	2
Calcium	ppm	ASTM D5185(m)	4.7	**5**	<1	<1
Phosphorus	ppm	ASTM D5185(m)	0.0	**3**	0	0
Zinc	ppm	ASTM D5185(m)	0.1	**5**	2	2
Sulfur	ppm	ASTM D5185(m)	848	**971**	983	987
Lithium	ppm	ASTM D5185(m)		**<1**	<1	<1

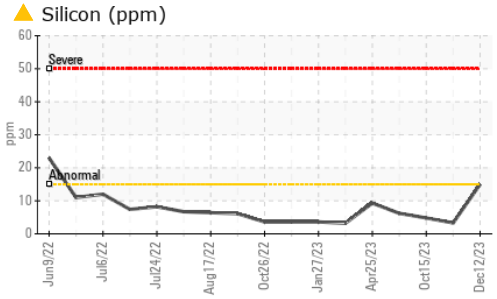
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m)	>15	▲ **15**	3	5
Sodium	ppm	ASTM D5185(m)		**13**	<1	<1
Potassium	ppm	ASTM D5185(m)	>20	**0**	0	2

OIL ANALYSIS REPORT

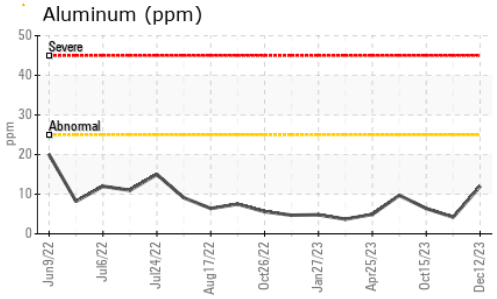
Non-ferrous Metals



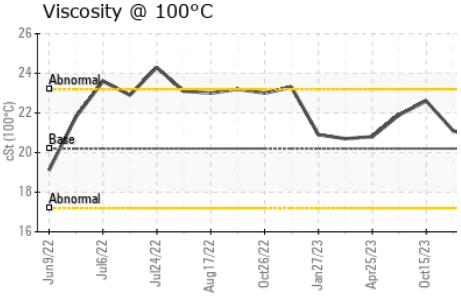
Silicon (ppm)



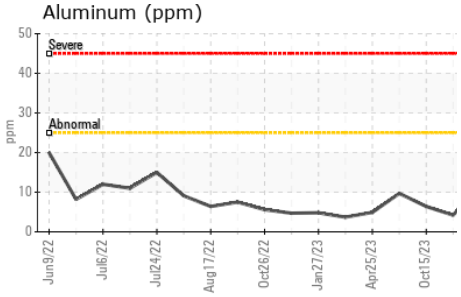
Aluminum (ppm)



Viscosity @ 100°C



Aluminum (ppm)

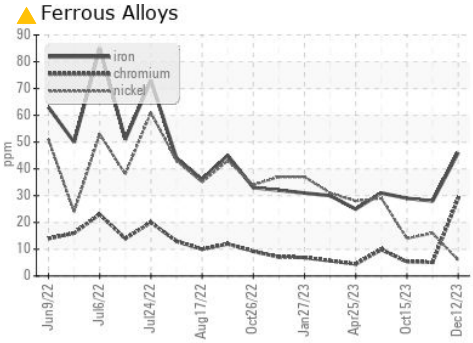


VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	Visual*	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	Visual*	NONE	**NONE**	NONE	NONE
Precipitate	scalar	Visual*	NONE	**NONE**	NONE	NONE
Silt	scalar	Visual*	NONE	**NONE**	LIGHT	LIGHT
Debris	scalar	Visual*	NONE	**NONE**	NONE	LIGHT
Sand/Dirt	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**	.2%	.2%
Free Water	scalar	Visual*		**NEG**	NEG	NEG

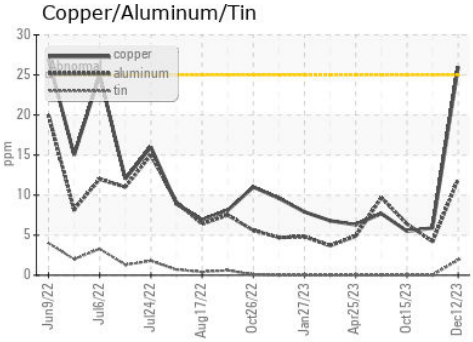
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D7279(m)	20.2	**20.7**	21.1	22.6

GRAPHS

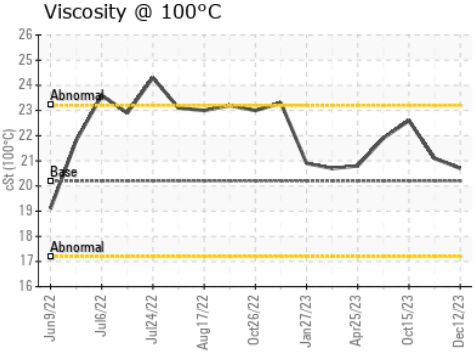
Ferrous Alloys



Copper/Aluminum/Tin



Viscosity @ 100°C



ISO 17025:2017 Accredited Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : WC0838454 **Recieved** : 14 Dec 2023
Lab Number : 02603182 **Diagnosed** : 15 Dec 2023
Unique Number : 5696267 **Diagnostician** : Kevin Marson
Test Package : AVI 1

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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