



# OIL ANALYSIS REPORT

|                 |               |
|-----------------|---------------|
| WEAR            | <b>NORMAL</b> |
| CONTAMINATION   | <b>NORMAL</b> |
| FLUID CONDITION | <b>NORMAL</b> |

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)**

## RECOMMENDATION

Resample at the next service interval to monitor.

| Test           | UOM | Method      | Limit/Abn | Current            | History1    | History2    |
|----------------|-----|-------------|-----------|--------------------|-------------|-------------|
| Sample Number  |     | Client Info |           | <b>WC0838461</b>   | WC0886715   | WC0838454   |
| Sample Date    |     | Client Info |           | <b>27 Feb 2024</b> | 29 Dec 2023 | 12 Dec 2023 |
| TSN            | hrs | Client Info |           | <b>0</b>           | 0           | 0           |
| TSO            | hrs | Client Info |           | <b>512</b>         | 1301        | 1261        |
| Oil Age        | hrs | Client Info |           | <b>45</b>          | 19          | 31          |
| Filter Age     | hrs | Client Info |           | <b>45</b>          | 19          | 31          |
| Oil Changed    |     | Client Info |           | <b>Changed</b>     | Not Changd  | N/A         |
| Filter Changed |     | Client Info |           | <b>Not Changd</b>  | Not Changd  | N/A         |
| Sample Status  |     |             |           | <b>NORMAL</b>      | NORMAL      | ABNORMAL    |

## WEAR

All component wear rates are normal.

|              |        |               |        |              |      |      |
|--------------|--------|---------------|--------|--------------|------|------|
| Iron         | ppm    | ASTM D5185(m) | >80    | <b>35</b>    | 32   | 46   |
| Chromium     | ppm    | ASTM D5185(m) | >20    | <b>14</b>    | 16   | ▲ 29 |
| Nickel       | ppm    | ASTM D5185(m) | >50    | <b>11</b>    | 6    | 6    |
| Titanium     | ppm    | ASTM D5185(m) |        | <b>0</b>     | 0    | 0    |
| Silver       | ppm    | ASTM D5185(m) | >5     | <b>&lt;1</b> | <1   | <1   |
| Aluminum     | ppm    | ASTM D5185(m) | >25    | <b>6</b>     | 7    | 12   |
| Lead         | ppm    | ASTM D5185(m) | >20000 | <b>6515</b>  | 3642 | 3645 |
| Copper       | ppm    | ASTM D5185(m) | >25    | <b>10</b>    | 13   | ▲ 26 |
| Tin          | ppm    | ASTM D5185(m) | >30    | <b>0</b>     | 1    | 2    |
| Vanadium     | ppm    | ASTM D5185(m) |        | <b>0</b>     | 0    | 0    |
| White Metal  | scalar | Visual*       | NONE   | <b>NONE</b>  | NONE | NONE |
| Yellow Metal | scalar | Visual*       | NONE   | <b>NONE</b>  | NONE | NONE |

## CONTAMINATION

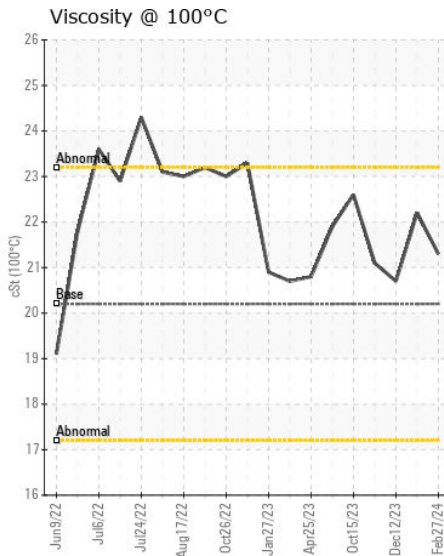
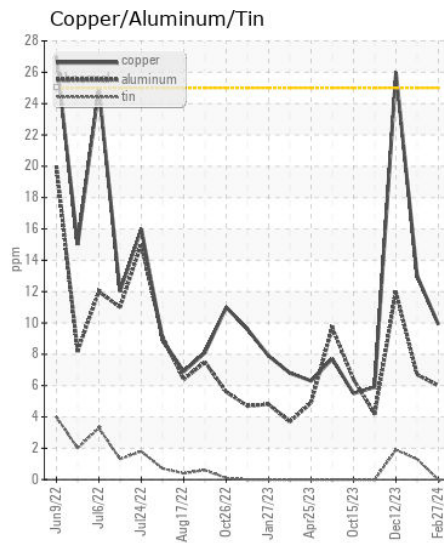
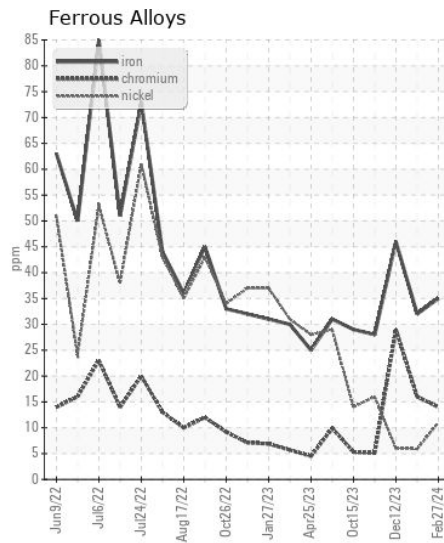
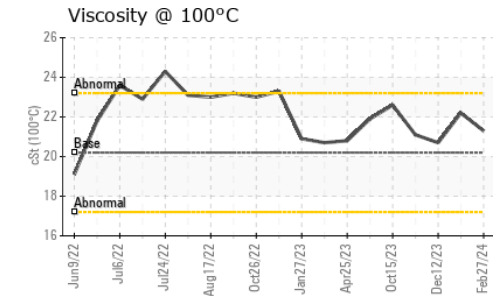
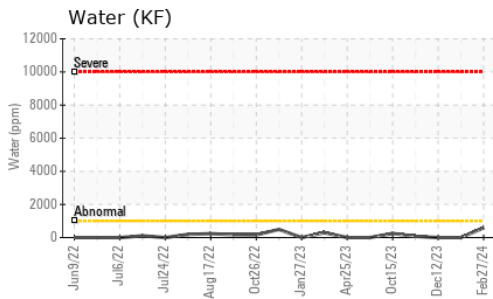
The water content is negligible. There is no indication of any contamination in the oil.

|                  |        |               |       |                |       |       |
|------------------|--------|---------------|-------|----------------|-------|-------|
| Silicon          | ppm    | ASTM D5185(m) | >15   | <b>7</b>       | 13    | ▲ 15  |
| Potassium        | ppm    | ASTM D5185(m) | >20   | <b>&lt;1</b>   | <1    | 0     |
| Fuel             |        | WC Method     | >4.0  | <b>&lt;1.0</b> | <1.0  | <1.0  |
| Water            | %      | ASTM D6304*   | >0.1  | <b>0.059</b>   | ---   | ---   |
| ppm Water        | ppm    | ASTM D6304*   | >1000 | <b>591</b>     | ---   | ---   |
| Glycol           |        | WC Method     |       | <b>NEG</b>     | NEG   | NEG   |
| Silt             | scalar | Visual*       | NONE  | <b>VLITE</b>   | VLITE | NONE  |
| Debris           | scalar | Visual*       | NONE  | <b>NONE</b>    | NONE  | NONE  |
| Sand/Dirt        | scalar | Visual*       | NONE  | <b>NONE</b>    | NONE  | NONE  |
| Appearance       | scalar | Visual*       | NORML | <b>NORML</b>   | NORML | NORML |
| Odor             | scalar | Visual*       | NORML | <b>NORML</b>   | NORML | NORML |
| Emulsified Water | scalar | Visual*       | >0.1  | <b>.2%</b>     | NEG   | NEG   |

## FLUID CONDITION

The condition of the oil is acceptable for the time in service.

|              |     |               |      |             |      |      |
|--------------|-----|---------------|------|-------------|------|------|
| Sodium       | ppm | ASTM D5185(m) |      | <b>3</b>    | 7    | 13   |
| Boron        | ppm | ASTM D5185(m) | 0.0  | <b>0</b>    | <1   | <1   |
| Barium       | ppm | ASTM D5185(m) | 0.0  | <b>0</b>    | 0    | <1   |
| Molybdenum   | ppm | ASTM D5185(m) | 0.0  | <b>0</b>    | <1   | 1    |
| Manganese    | ppm | ASTM D5185(m) | 0.0  | <b>0</b>    | 0    | <1   |
| Magnesium    | ppm | ASTM D5185(m) | 0.0  | <b>5</b>    | 4    | 4    |
| Calcium      | ppm | ASTM D5185(m) | 4.7  | <b>1</b>    | 4    | 5    |
| Phosphorus   | ppm | ASTM D5185(m) | 0.0  | <b>0</b>    | <1   | 3    |
| Zinc         | ppm | ASTM D5185(m) | 0.1  | <b>2</b>    | 4    | 5    |
| Sulfur       | ppm | ASTM D5185(m) | 848  | <b>1039</b> | 1036 | 971  |
| Visc @ 100°C | cSt | ASTM D7279(m) | 20.2 | <b>21.3</b> | 22.2 | 20.7 |



**Laboratory** : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9  
**Sample No.** : WC0838461  
**Lab Number** : 02619257  
**Unique Number** : 5736367  
**Test Package** : AVI 1 ( Additional Tests: KF )  
**Received** : 01 Mar 2024  
**Tested** : 02 Mar 2024  
**Diagnosed** : 04 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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