

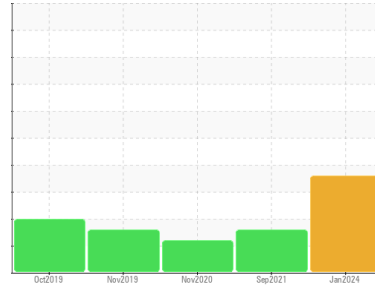


OIL ANALYSIS REPORT

Sample Rating Trend

DEGRADATION

Area
EQUIPEMENTS LAFONTAINE [02621867]
 Machine Id
HITACHI ZX-380LC-6 2362 (S/N 640055)
 Component
Hydraulic System
 Fluid
PANOLIN HLP SYNTH 46 (340 LTR)



DIAGNOSIS

Recommendation

Nous vous recommandons de remplacer le filtre et d'utiliser un système de filtrage hors-ligne afin d'améliorer la propreté du fluide. Nous vous recommandons d'échantillonner de nouveau dès que possible afin de contrôler la situation. L'indice d'acidité (AN) indique que votre fluide approche de sa fin de vie utile, veuillez échantillonner à intervalles rapprochées de 250 heures.

Wear

Les taux d'usure de tous les composants sont normaux.

Contamination

Il y a une quantité modérée de matières particulières (2 à 100 µm de taille) présente dans l'huile. Il y a une faible concentration (<5.0%) d'huile minérale présente dans le fluide. La teneur en eau est négligeable. La propreté du système est supérieure à la limite acceptable pour votre objectif de propreté ISO 4406.

Fluid Condition

Le niveau de AN est supérieur à la limite recommandée. l'huile peut encore servir si la contamination peut être réduite à un niveau acceptable.

SAMPLE INFORMATION

| method | limit/base | current | history1 | history2 |
|---------------|-------------|--------------------|-------------|-------------|
| Sample Number | Client Info | WC0893400 | WC | WC |
| Sample Date | Client Info | 31 Jan 2024 | 27 Sep 2021 | 25 Nov 2020 |
| Machine Age | hrs | 6705 | 10964 | 1880 |
| Oil Age | hrs | 0 | 0 | 0 |
| Oil Changed | Client Info | N/A | N/A | N/A |
| Sample Status | | ABNORMAL | ABNORMAL | ATTENTION |

WEAR METALS

| method | limit/base | current | history1 | history2 | |
|-----------|------------|-------------------|--------------|----------|----|
| Iron | ppm | ASTM D5185(m) >20 | 18 | 15 | 7 |
| Chromium | ppm | ASTM D5185(m) >10 | 4 | 2 | <1 |
| Nickel | ppm | ASTM D5185(m) >10 | <1 | <1 | 0 |
| Titanium | ppm | ASTM D5185(m) | 0 | <1 | <1 |
| Silver | ppm | ASTM D5185(m) | 0 | <1 | 0 |
| Aluminum | ppm | ASTM D5185(m) >10 | <1 | <1 | <1 |
| Lead | ppm | ASTM D5185(m) >10 | 0 | <1 | 0 |
| Copper | ppm | ASTM D5185(m) >75 | <1 | <1 | <1 |
| Tin | ppm | ASTM D5185(m) >10 | 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) | 0 | 0 | 0 |

ADDITIVES

| method | limit/base | current | history1 | history2 | |
|------------|------------|--------------------|--------------|----------|------|
| Boron | ppm | ASTM D5185(m) 0 | <1 | 2 | <1 |
| Barium | ppm | ASTM D5185(m) 0 | 0 | 0 | 0 |
| Molybdenum | ppm | ASTM D5185(m) 0 | 0 | 0 | 0 |
| Manganese | ppm | ASTM D5185(m) 0 | 0 | 0 | <1 |
| Magnesium | ppm | ASTM D5185(m) 0 | 1 | 0 | <1 |
| Calcium | ppm | ASTM D5185(m) 0 | 5 | <1 | 1 |
| Phosphorus | ppm | ASTM D5185(m) 1700 | 1483 | 1561 | 1464 |
| Zinc | ppm | ASTM D5185(m) 0 | 72 | 133 | 50 |
| Sulfur | ppm | ASTM D5185(m) 1350 | 1330 | 1273 | 1263 |
| Lithium | ppm | ASTM D5185(m) | <1 | <1 | <1 |

CONTAMINANTS

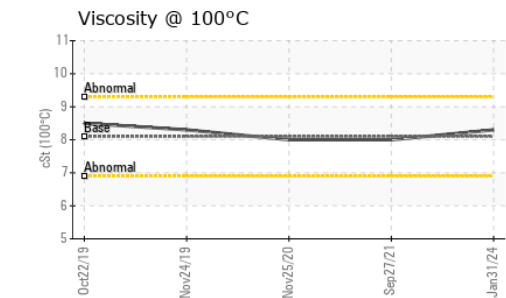
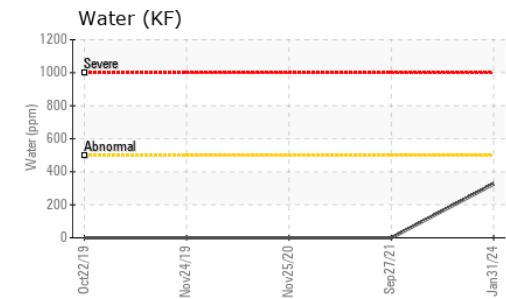
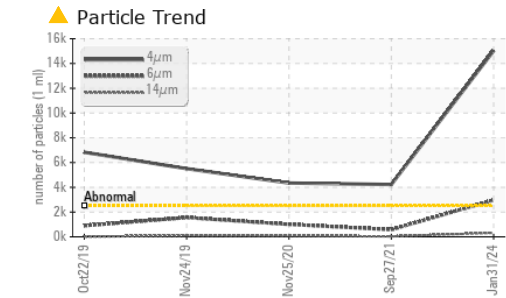
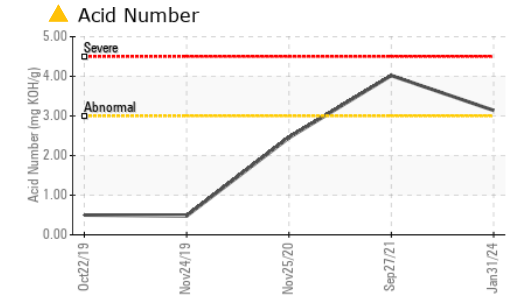
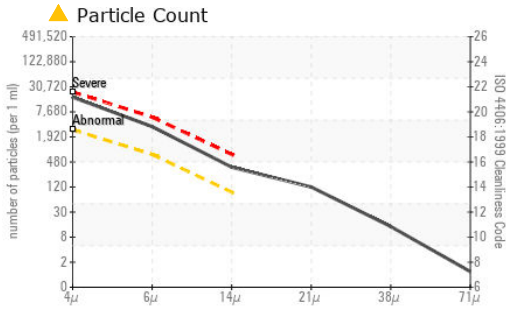
| method | limit/base | current | history1 | history2 | |
|-----------|------------|-------------------|--------------|----------|-----|
| Silicon | ppm | ASTM D5185(m) >20 | <1 | 1 | 2 |
| Sodium | ppm | ASTM D5185(m) | 1 | 1 | 1 |
| Potassium | ppm | ASTM D5185(m) >20 | <1 | <1 | <1 |
| Water | % | ASTM D6304* >0.05 | 0.032 | --- | --- |
| ppm Water | ppm | ASTM D6304* >500 | 326 | --- | --- |

INFRA-RED

| method | limit/base | current | history1 | history2 | |
|---------------------|------------|-------------------|----------------|----------|-----|
| Soot % | % | ASTM D7844* | 0 | --- | --- |
| Nitration | Abs/cm | ASTM D7624* | 4.5 | --- | --- |
| Sulfation | Abs/.1mm | ASTM D7415* | 160.6 | --- | --- |
| Mineral Oil Content | % | ASTM D7418* <5.0% | <5.0 | 2.1 | 4.8 |



OIL ANALYSIS REPORT



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : WC0893400 **Received** : 14 Mar 2024
Lab Number : 02622170 **Tested** : 15 Mar 2024
Unique Number : 5747289 **Diagnosed** : 15 Mar 2024 - Kevin Marson
Test Package : MOB 2 (Additional Tests: TAN Man)

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.

| FLUID CLEANLINESS | method | limit/base | current | history1 | history2 |
|-------------------|--------------|------------|------------|------------|------------|
| Particles >4µm | ASTM D7647 | >2500 | ▲ 15027 | ● 4225 | ● 4344 |
| Particles >6µm | ASTM D7647 | >640 | ▲ 2971 | ● 577 | ● 1005 |
| Particles >14µm | ASTM D7647 | >80 | ▲ 317 | ● 32 | ● 82 |
| Particles >21µm | ASTM D7647 | >20 | ▲ 106 | ● 6 | ● 23 |
| Particles >38µm | ASTM D7647 | >4 | ▲ 12 | ● 0 | ● 3 |
| Particles >71µm | ASTM D7647 | >3 | ▲ 1 | ● 0 | ● 0 |
| Oil Cleanliness | ISO 4406 (c) | >18/16/13 | ▲ 21/19/15 | ● 19/16/12 | ● 19/17/14 |

| FLUID DEGRADATION | method | limit/base | current | history1 | history2 |
|-------------------|----------|-------------|---------|----------|----------|
| Oxidation | Abs./1mm | ASTM D7414* | 160.6 | --- | --- |
| Acid Number (AN) | mg KOH/g | ASTM D974* | ▲ 3.14 | ▲ 4.02 | 2.45 |

| 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 | NONE |
| Debris | scalar | Visual* | NONE | NONE | NONE |
| Sand/Dirt | scalar | Visual* | NONE | NONE | NONE |
| Appearance | scalar | Visual* | NORML | NORML | NORML |
| Odor | scalar | Visual* | NORML | NORML | NORML |
| Emulsified Water | scalar | Visual* | >0.05 | NEG | NEG |
| Free Water | scalar | Visual* | NEG | NEG | NEG |

| FLUID PROPERTIES | method | limit/base | current | history1 | history2 | |
|----------------------|--------|---------------|---------|----------|----------|------|
| Visc @ 40°C | cSt | ASTM D7279(m) | 47.0 | 45.6 | 44.2 | 45.0 |
| Visc @ 100°C | cSt | ASTM D7279(m) | 8.1 | 8.3 | 8 | 8.0 |
| Viscosity Index (VI) | Scale | ASTM D2270* | 146 | 159 | 154 | 151 |

| SAMPLE IMAGES | method | limit/base | current | history1 | history2 | |
|---------------|--------|------------|---------|----------|----------|--|
| Color | | | | | | |
| Bottom | | | | | | |



MINERAL OIL CONTENT REPORT

PASS

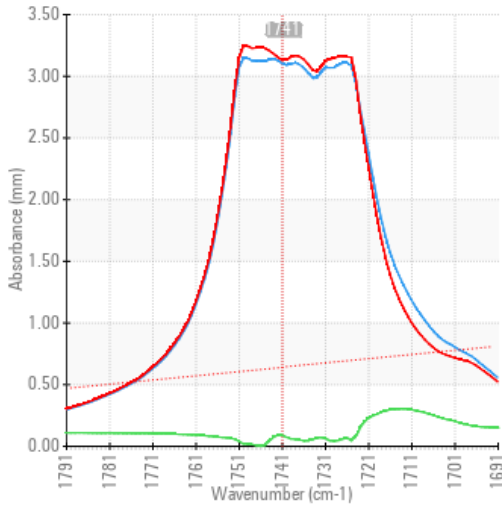


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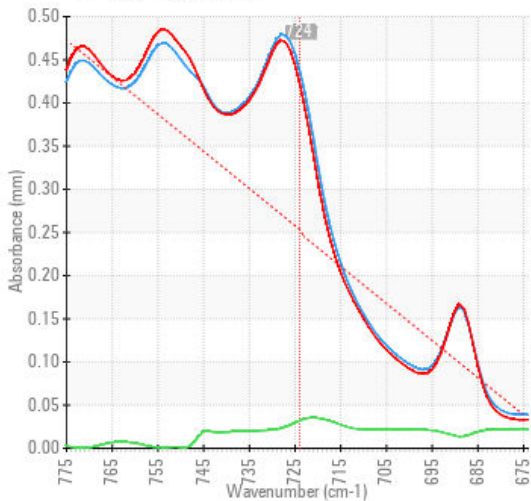
SPECTRAL ANALYSIS

| | | method | limit/base | current | history1 | history2 |
|---------------------|-----|---------------|------------|----------------|----------|----------|
| Zinc | ppm | ASTM D5185(m) | 0 | 72 | 133 | 50 |
| Mineral Oil Content | % | ASTM D7418* | <5.0% | <5.0 | 2.1 | 4.8 |

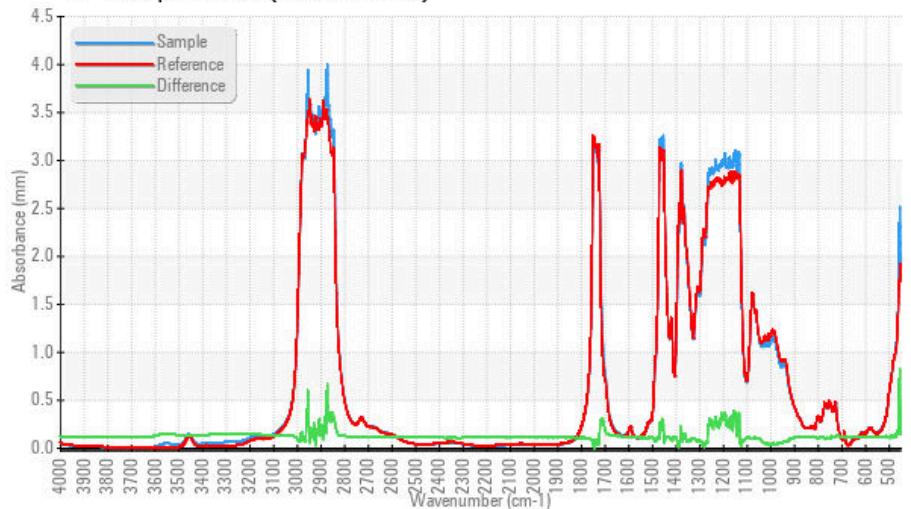
FT-IR - Esters I



FT-IR - Esters II



FT-IR Spectrum (Absorbance)



ISO 17025:2017
 Accredited
 Laboratory

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