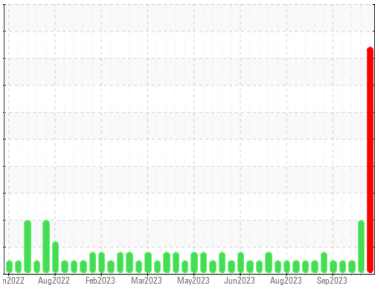
# OIL ANALYSIS REPORT

Sample Rating Trend



WEAR

Machine Id
## LIDM02BE (S/N GZJ00681)
Component
**Biogas Engine**
Fluid
**CHEVRON HDAX 6500 LFG GAS ENGINE OIL (540 LTR)**

## DIAGNOSIS

**Recommendation**

Nous avons pris note que la vidange d`huile a été effectuée au moment de l`échantillonnage. Échantillonner de nouveau l`équipement au prochain intervalle de vidange afin d`en surveiller la condition. Nous vous suggérons de confirmer les résultats de l'analyse avant toute action importante de maintenance soit entreprise. Indiquez sur le formulaire d'échantillonnage (SIF-sample information form) qu'il s'agit d'un ré-échantillonnage.

**Wear**

Usure de cylindre, de vilebrequin ou d`arbre à cames.

**Contamination**

Il n`y a aucun indice de contamination dans l`huile.

**Fluid Condition**

Le niveau de AN est supérieur à la limite recommandée. Le niveau de BN est inférieur à la normale. l`huile ne peut plus être utilisée.

| SAMPLE INFORMATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Sample Number | | Client Info | | **WC0817908** | WC0817903 | WC0772237 |
| Sample Date | | Client Info | | **18 Oct 2023** | 10 Oct 2023 | 02 Oct 2023 |
| Machine Age | hrs | Client Info | | **5627** | 5482 | 5287 |
| Oil Age | hrs | Client Info | | **620** | 475 | 280 |
| Oil Changed | | Client Info | | **Changed** | Not Changd | Not Changd |
| Sample Status | | | | **SEVERE** | ABNORMAL | NORMAL |

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

| WEAR METALS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| PQ | | ASTM D8184* | | **0** | --- | --- |
| Iron | ppm | ASTM D5185(m) | >15 | **22** | 14 | 7 |
| Chromium | ppm | ASTM D5185(m) | >4 | **<1** | 0 | 0 |
| Nickel | ppm | ASTM D5185(m) | >2 | **<1** | <1 | 0 |
| Titanium | ppm | ASTM D5185(m) | | **0** | 0 | 0 |
| Silver | ppm | ASTM D5185(m) | >5 | **<1** | <1 | <1 |
| Aluminum | ppm | ASTM D5185(m) | >6 | **2** | 2 | 2 |
| Lead | ppm | ASTM D5185(m) | >9 | **<1** | <1 | <1 |
| Copper | ppm | ASTM D5185(m) | >6 | **2** | 2 | 1 |
| Tin | ppm | ASTM D5185(m) | >4 | **2** | 2 | 1 |
| Antimony | ppm | ASTM D5185(m) | | **3** | 3 | 2 |
| Vanadium | ppm | ASTM D5185(m) | | **0** | 0 | 0 |
| Beryllium | ppm | ASTM D5185(m) | | **0** | 0 | 0 |
| Cadmium | ppm | ASTM D5185(m) | | **0** | 0 | 0 |

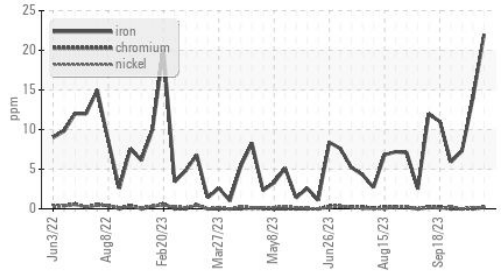
| ADDITIVES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Boron | ppm | ASTM D5185(m) | | **3** | 3 | 3 |
| Barium | ppm | ASTM D5185(m) | | **<1** | <1 | <1 |
| Molybdenum | ppm | ASTM D5185(m) | | **2** | 3 | 3 |
| Manganese | ppm | ASTM D5185(m) | | **0** | 0 | 0 |
| Magnesium | ppm | ASTM D5185(m) | | **10** | 9 | 8 |
| Calcium | ppm | ASTM D5185(m) | | **1787** | 1787 | 1754 |
| Phosphorus | ppm | ASTM D5185(m) | | **243** | 242 | 238 |
| Zinc | ppm | ASTM D5185(m) | | **292** | 289 | 281 |
| Sulfur | ppm | ASTM D5185(m) | | **2752** | 2693 | 2178 |
| Lithium | ppm | ASTM D5185(m) | | **<1** | <1 | <1 |

| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Silicon | ppm | ASTM D5185(m) | >181 | **112** | 100 | 70 |
| Sodium | ppm | ASTM D5185(m) | | **<1** | <1 | 1 |
| Potassium | ppm | ASTM D5185(m) | >20 | **1** | 1 | 2 |

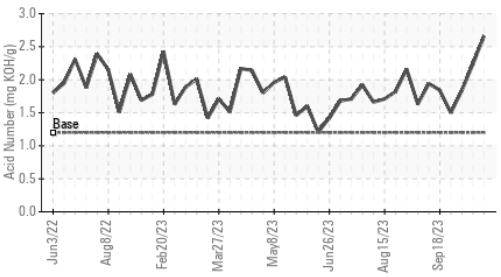
| INFRA-RED | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Soot % | % | ASTM D7844* | | **0** | 0 | 0 |
| Nitration | Abs/cm | ASTM D7624* | >20 | **4.9** | 4.9 | 4.7 |
| Sulfation | Abs/.1mm | ASTM D7415* | >30 | **22.0** | 21.7 | 18.9 |

# OIL ANALYSIS REPORT

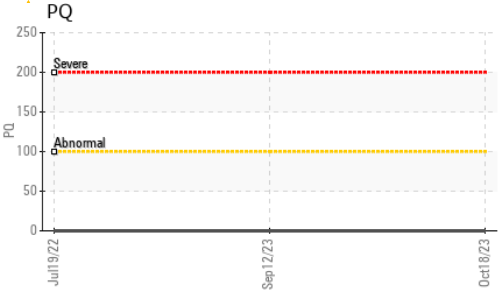
Ferrous Alloys



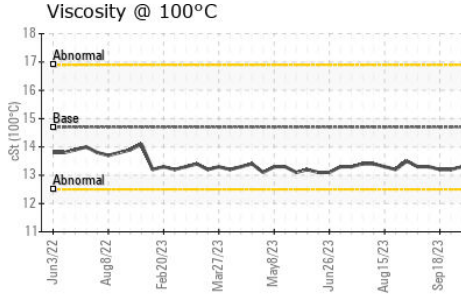

Acid Number



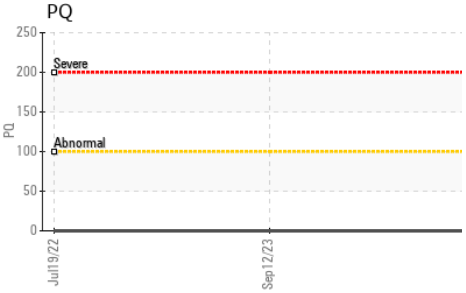

PQ




Viscosity @ 100°C




PQ



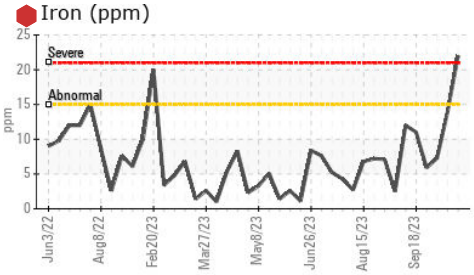

| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Oxidation | Abs/.1mm | ASTM D7414* | >25 | **10.0** | 10.2 | 8.6 |
| Acid Number (AN) | mg KOH/g | ASTM D974* | 1.2 | ▲ **2.66** | 2.24 | 1.84 |
| Base Number (BN) | mg KOH/g | ASTM D2896* | 4.5 | ▲ **2.43** | 2.33 | 3.26 |
| i-pH | Scale 0-14 | ASTM D7946* | <4.5 | **4.82** | ▲ 4.39 | 5.38 |

| VISUAL | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Emulsified Water | scalar | Visual* | >0.1 | **NEG** | NEG | NEG |
| Free Water | scalar | Visual* | | **NEG** | NEG | NEG |

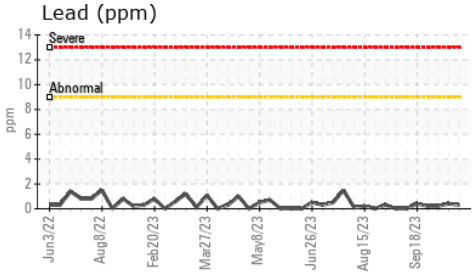
| FLUID PROPERTIES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Visc @ 100°C | cSt | ASTM D7279(m) | 14.7 | **13.3** | 13.2 | 13.3 |

## GRAPHS

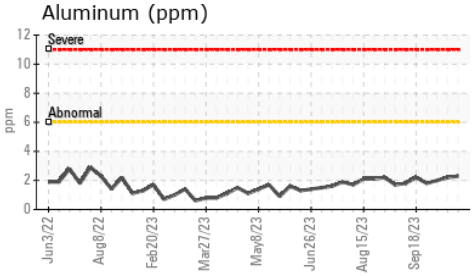
Iron (ppm)



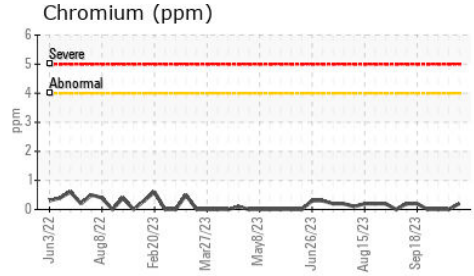

Lead (ppm)



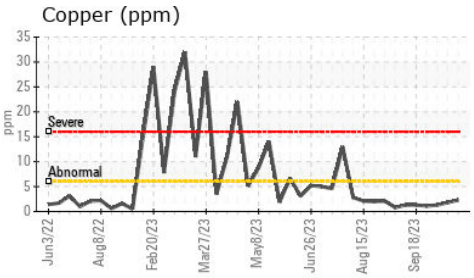

Aluminum (ppm)



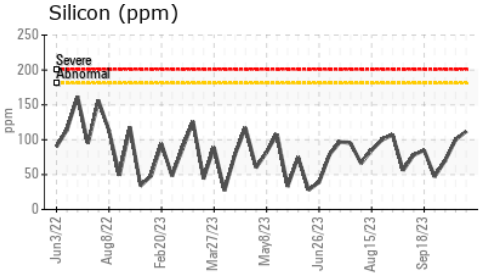

Chromium (ppm)



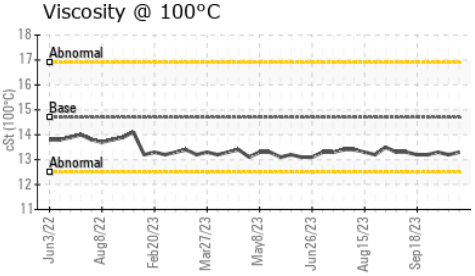

Copper (ppm)



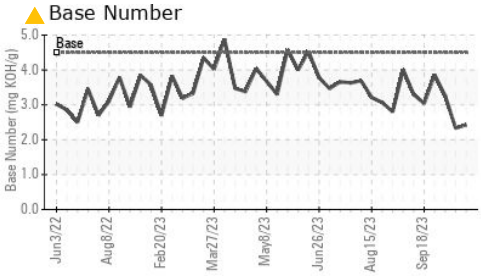

Silicon (ppm)




Viscosity @ 100°C




Base Number




ISO 17025:2017 Accredited Laboratory

**Laboratory** : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
**Sample No.** : WC0817908 **Received** : 20 Oct 2023
**Lab Number** : 02590607 **Diagnosed** : 23 Oct 2023
**Unique Number** : 5659673 **Diagnostician** : Kevin Marson
**Test Package** : MOB 2 ( Additional Tests: i-pH, PQ, TAN Auto, 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.*

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