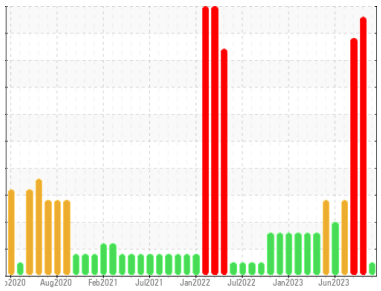
# OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL

Area
## Direct Strip Mill/Finishing
Machine Id
## RL7 COILER DRIVE LUBE SYSTEM (DSC022) (S/N 1000017430)
Component
**Gear Lube System**
Fluid
**GEAR OIL ISO 460 (3000 LTR)**

## DIAGNOSIS

**Recommendation**
Resample at the next service interval to monitor. Please specify the brand, type, and viscosity of the oil on your next sample.

**Wear**
All component wear rates are normal.

**Contamination**
The system cleanliness is acceptable for your target ISO 4406 cleanliness code. The system and fluid cleanliness is acceptable.

**Fluid Condition**
The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

| SAMPLE INFORMATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Sample Number | | Client Info | | **WC0837581** | WC0837427 | WC0837466 |
| Sample Date | | Client Info | | **18 Jan 2024** | 13 Nov 2023 | 26 Sep 2023 |
| Machine Age | hrs | Client Info | | **0** | 0 | 0 |
| Oil Age | hrs | Client Info | | **0** | 0 | 0 |
| Oil Changed | | Client Info | | **N/A** | N/A | N/A |
| Sample Status | | | | **NORMAL** | SEVERE | SEVERE |

| CONTAMINATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Water | | WC Method | >0.1 | **NEG** | NEG | NEG |

| WEAR METALS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Iron | ppm | ASTM D5185(m) | >150 | **28** | ▲ 194 | ▲ 226 |
| Chromium | ppm | ASTM D5185(m) | >10 | **0** | 1 | 2 |
| Nickel | ppm | ASTM D5185(m) | >10 | **<1** | 2 | 2 |
| Titanium | ppm | ASTM D5185(m) | | **0** | 0 | 0 |
| Silver | ppm | ASTM D5185(m) | | **0** | <1 | <1 |
| Aluminum | ppm | ASTM D5185(m) | >25 | **9** | ⬢ 81 | ⬢ 95 |
| Lead | ppm | ASTM D5185(m) | >100 | **0** | <1 | <1 |
| Copper | ppm | ASTM D5185(m) | >50 | **<1** | 1 | 2 |
| Tin | ppm | ASTM D5185(m) | >10 | **0** | 0 | 0 |
| Antimony | ppm | ASTM D5185(m) | >5 | **4** | ⬢ 44 | ⬢ 54 |
| 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) | 50 | **<1** | <1 | <1 |
| Barium | ppm | ASTM D5185(m) | 15 | **0** | 0 | <1 |
| Molybdenum | ppm | ASTM D5185(m) | 15 | **2** | 36 | 44 |
| Manganese | ppm | ASTM D5185(m) | | **0** | 2 | 2 |
| Magnesium | ppm | ASTM D5185(m) | 50 | **<1** | 0 | 0 |
| Calcium | ppm | ASTM D5185(m) | 50 | **2** | 3 | 4 |
| Phosphorus | ppm | ASTM D5185(m) | 350 | **196** | 125 | 162 |
| Zinc | ppm | ASTM D5185(m) | 100 | **4** | 2 | 3 |
| Sulfur | ppm | ASTM D5185(m) | 12500 | **9237** | 7744 | 8488 |
| Lithium | ppm | ASTM D5185(m) | | **<1** | <1 | <1 |

| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Silicon | ppm | ASTM D5185(m) | >50 | **2** | 2 | 2 |
| Sodium | ppm | ASTM D5185(m) | | **8** | 77 | 83 |
| Potassium | ppm | ASTM D5185(m) | >20 | **<1** | 2 | 2 |

| INFRA-RED | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Soot % | % | ASTM D7844* | | **0** | --- | --- |
| Nitration | Abs/cm | ASTM D7624* | | **3.5** | --- | --- |
| Sulfation | Abs/.1mm | ASTM D7415* | | **12.3** | --- | --- |

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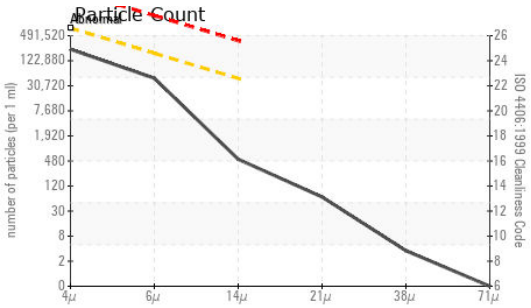
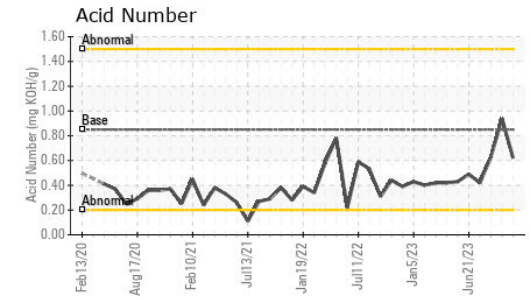
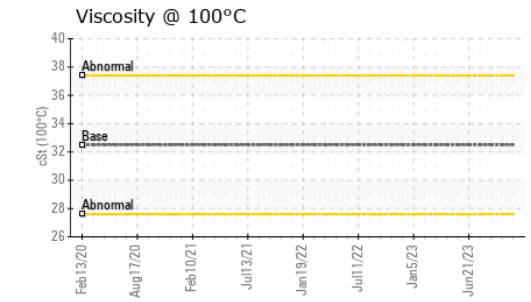
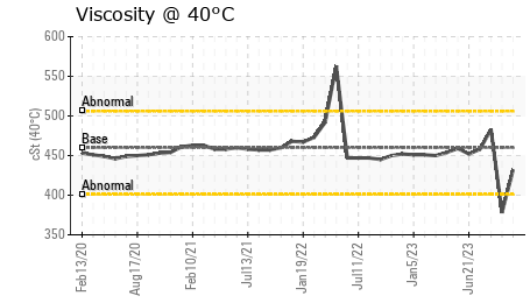
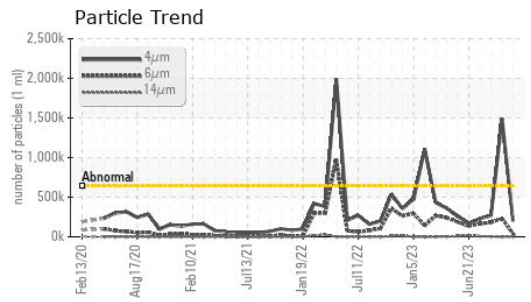


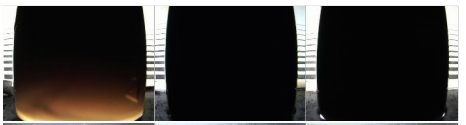




| FLUID CLEANLINESS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Particles >4µm | | ASTM D7647 | >640000 | **199467** | ▲ 1491692 | 269318 |
| Particles >6µm | | ASTM D7647 | >160000 | **40435** | ▲ 230133 | ▲ 183509 |
| Particles >14µm | | ASTM D7647 | >40000 | **464** | 465 | 4934 |
| Particles >21µm | | ASTM D7647 | >10000 | **58** | 23 | 186 |
| Particles >38µm | | ASTM D7647 | >2500 | **3** | 2 | 2 |
| Particles >71µm | | ASTM D7647 | >640 | **0** | 0 | 1 |
| Oil Cleanliness | | ISO 4406 (c) | >26/24/22 | **25/23/16** | ▲ 28/25/16 | ▲ 25/25/19 |

| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Oxidation | Abs/.1mm | ASTM D7414* | | **3.1** | --- | --- |
| Acid Number (AN) | mg KOH/g | ASTM D974* | 0.85 | **0.62** | 0.94 | 0.63 |

| VISUAL | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| White Metal | scalar | Visual* | NONE | **NONE** | NONE | VLITE |
| Yellow Metal | scalar | Visual* | NONE | **NONE** | NONE | NONE |
| Precipitate | scalar | Visual* | NONE | **NONE** | NONE | NONE |
| Silt | scalar | Visual* | NONE | **NONE** | NONE | NONE |
| Debris | scalar | Visual* | NONE | **NONE** | NONE | NONE |
| 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** | NEG | NEG |
| Free Water | scalar | Visual* | | **NEG** | NEG | NEG |

| FLUID PROPERTIES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Visc @ 40°C | cSt | ASTM D7279(m) | 460 | **432** | ▲ 378 | 483 |
| Visc @ 100°C | cSt | ASTM D7279(m) | 32.5 | **28.9** | --- | --- |
| Viscosity Index (VI) | Scale | ASTM D2270* | 103 | **94** | --- | --- |

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

ISO 17025:2017 Accredited Laboratory

**Laboratory** : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9 **ALGOMA STEEL INC. - STORES DEPT.**
**Sample No.** : WC0837581 **Recieved** : 22 Jan 2024 301 WALLACE TERRACE
**Lab Number** : 02610454 **Diagnosed** : 24 Jan 2024 SAULT STE MARIE, ON
**Unique Number** : 5711540 **Diagnostician** : Wes Davis CA P6C 1K8
**Test Package** : IND 2 ( Additional Tests: FT-IR, KV100, TAN Man, VI ) Contact: Algoma Reliability

*To discuss this sample report, contact Customer Service at 1-800-268-2131.* algomareliability@algoma.com
*Test denoted (*) outside scope of accreditation, (m) method modified, (e) tested at external lab.* T: (705)206-1059
*Validity of results and interpretation are based on the sample and information as supplied.* F: (705)945-3585