

WEAR NORMAL CONTAMINATION SEVERE FLUID CONDITION NORMAL

Current

Limit/Abn

History1

History2

Machine Id 2008 NOVA 148 Component Rear Diesel Engine Fluid ESSO XD-3 EXTRA 15W40 (--- GAL)

RECOMMENDATION

We advise that you check the fuel injection system. The oil change at the time of sampling has been noted. We recommend an early resample to monitor this condition. Test

UOM

Method

| WEAR | |
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| | |

All component wear rates are normal.

CONTAMINATION

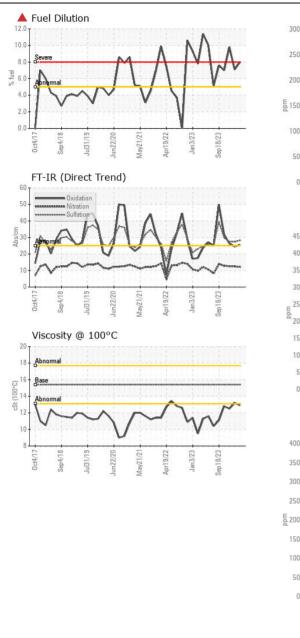
There is a high amount of fuel present in the oil. Tests confirm the presence of fuel in the oil.

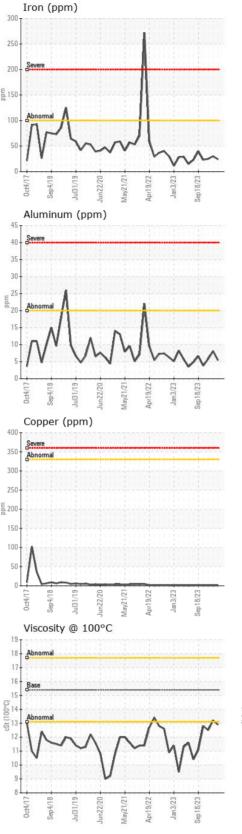
| | Sample Number | | Client Info | | WC0888969 | WC0889033 | WC0889196 |
|--|------------------|----------|--------------------------------|------|-------------|-------------|--------------|
| | Sample Date | | Client Info | | 07 May 2024 | 22 Mar 2024 | 18 Jan 2024 |
| | Machine Age | kms | Client Info | | 0 | 0 | 0 |
| | Oil Age | kms | Client Info | | 9085 | 9271 | 9385 |
| | Filter Age | kms | Client Info | | 9085 | 9271 | 9385 |
| | Oil Changed | | Client Info | | Changed | Changed | Changed |
| | Filter Changed | | Client Info | | N/A | N/A | N/A |
| | Sample Status | | | | SEVERE | ABNORMAL | SEVERE |
| | Iron | ppm | ASTM D5185(m) | >100 | 24 | 30 | 25 |
| | Chromium | ppm | ASTM D5185(m) | >20 | 1 | 1 | 2 |
| | Nickel | ppm | ASTM D5185(m) | >4 | 0 | 0 | <1 |
| | Titanium | ppm | ASTM D5185(m) | | 0 | 0 | 0 |
| | Silver | ppm | ASTM D5185(m) | >3 | 0 | 0 | 0 |
| | Aluminum | ppm | ASTM D5185(m) | >20 | 5 | 8 | 6 |
| | Lead | ppm | ASTM D5185(m) | >40 | <1 | <1 | <1 |
| | Copper | ppm | ASTM D5185(m) | >330 | <1 | 1 | <1 |
| | Tin | ppm | ASTM D5185(m) | >15 | 0 | 0 | 0 |
| | Vanadium | ppm | ASTM D5185(m) | | 0 | 0 | 0 |
| | Silicon | ppm | ASTM D5185(m) | >25 | 5 | 5 | 6 |
| | Potassium | ppm | ASTM D5185(m) | >20 | 8 | 8 | 7 |
| | Fuel | % | ASTM D3103(iii) ASTM D7593* | >5 | o ▲ 8 | 0 ▲ 7.1 | / ▲ 9.8 |
| | Water | 70 | WC Method | >0.2 | NEG | NEG | NEG |
| | Glycol | | WC Method | 20.L | NEG | NEG | NEG |
| | Soot % | % | ASTM D7844* | >3 | 1 | 1 | 0.5 |
| | Nitration | Abs/cm | ASTM D7624* | >20 | 12.2 | 12.4 | 12.6 |
| | Sulfation | Abs/.1mm | ASTM D7415* | >30 | 28.2 | 27.4 | 27.4 |
| | Emulsified Water | scalar | Visual* | >0.2 | NEG | NEG | NEG |
| | Sodium | ppm | ASTM D5185(m) | >192 | 3 | 3 | 3 |
| | Boron | ppm | ASTM D5185(m) | ZIUL | 77 | 80 | 87 |
| | Barium | ppm | ASTM D5185(m) | | 0 | 0 | 0 |
| | Molybdenum | ppm | ASTM D5185(m) | | 0 | <1 | <1 |
| | Manganese | ppm | ASTM D5185(m) | | <1 | 0 | 0 |
| | Magnesium | ppm | ASTM D5185(m) | | 16 | 19 | 16 |
| | Calcium | ppm | ASTM D5185(m) | 3780 | 2286 | 2317 | 2244 |
| | Phosphorus | ppm | ASTM D5185(m) | 1370 | 985 | 970 | 957 |
| | Zinc | ppm | ASTM D5185(m) | 1500 | 1191 | 1179 | 1165 |
| | Sulfur | ppm | ASTM D5185(m) | 3800 | 2782 | 2769 | 2949 |
| | Oxidation | Abs/.1mm | ASTM D7414* | >25 | 25.6 | 24.5 | 26.3 |
| | Visc @ 100°C | cSt | ASTM D7279(m) | 15.4 | 12.9 | 13.2 | 1 2.5 |
| | | | | | | | |

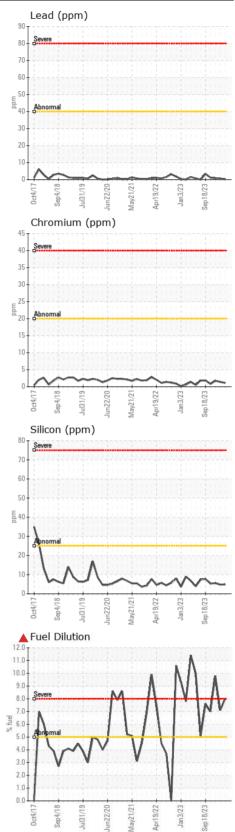
FLUID CONDITION

The oil is no longer serviceable due to the presence of contaminants.

Contact/Location: Sean Malcolm - CITTHU Page 1 of 2







CITY OF THUNDER BAY Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9 CALA Sample No. : WC0888969 Received AUTO MAINTENANCE STORES, 570 FORT WILLIAM ROAD : 13 May 2024 В. Lab Number : 02634877 Tested : 14 May 2024 THUNDER BAY, ON ISO 17025:2017 Accredited Laboratory : 14 May 2024 - Kevin Marson CA P7B 2Z8 Unique Number : 5776030 Diagnosed Test Package : MOB 1 (Additional Tests: PercentFuel) Contact: Sean Malcolm sean.malcolm@thunderbay.ca To discuss this sample report, contact Customer Service at 1-800-268-2131. T: (807)684-2716 Test denoted (*) outside scope of accreditation, (m) method modified, (e) tested at external lab. F: (807)344-0237 Validity of results and interpretation are based on the sample and information as supplied.

Contact/Location: Sean Malcolm - CITTHU Page 2 of 2