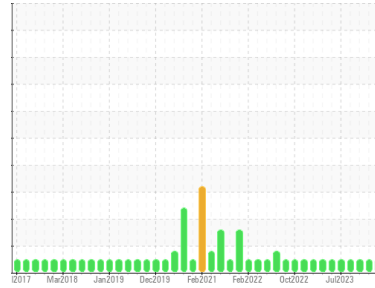




# OIL ANALYSIS REPORT

Sample Rating Trend



**NORMAL**



Machine Id  
**NOVA BUS 173**

Component  
**Rear Diesel Engine**

Fluid  
**ESSO XD-3 EXTRA 15W40 (--- LTR)**

## DIAGNOSIS

### Recommendation

Resample at the next service interval to monitor.

### Wear

All component wear rates are normal.

### Contamination

There is no indication of any contamination in the oil.

### Fluid Condition

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

## SAMPLE INFORMATION

|               | method      | limit/base  | current            | history1    | history2    |
|---------------|-------------|-------------|--------------------|-------------|-------------|
| Sample Number | Client Info |             | <b>WC0889035</b>   | WC0866636   | WC0816382   |
| Sample Date   | Client Info |             | <b>22 Mar 2024</b> | 15 Nov 2023 | 04 Oct 2023 |
| Machine Age   | kms         | Client Info | <b>0</b>           | 0           | 0           |
| Oil Age       | kms         | Client Info | <b>9183</b>        | 9216        | 10308       |
| Oil Changed   | Client Info |             | <b>Changed</b>     | Changed     | Changed     |
| Sample Status |             |             | <b>NORMAL</b>      | NORMAL      | NORMAL      |

## CONTAMINATION

|        | method    | limit/base | current        | history1 | history2 |
|--------|-----------|------------|----------------|----------|----------|
| Fuel   | WC Method | >3.0       | <b>&lt;1.0</b> | <1.0     | <1.0     |
| Water  | WC Method | >0.2       | <b>NEG</b>     | NEG      | NEG      |
| Glycol | WC Method |            | <b>NEG</b>     | NEG      | NEG      |

## WEAR METALS

|           | method | limit/base    | current | history1     | history2 |    |
|-----------|--------|---------------|---------|--------------|----------|----|
| Iron      | ppm    | ASTM D5185(m) | >90     | <b>25</b>    | 14       | 17 |
| Chromium  | ppm    | ASTM D5185(m) | >20     | <b>1</b>     | <1       | <1 |
| Nickel    | ppm    | ASTM D5185(m) | >2      | <b>&lt;1</b> | 0        | <1 |
| Titanium  | ppm    | ASTM D5185(m) | >2      | <b>0</b>     | 0        | 0  |
| Silver    | ppm    | ASTM D5185(m) | >2      | <b>0</b>     | <1       | <1 |
| Aluminum  | ppm    | ASTM D5185(m) | >20     | <b>2</b>     | 1        | 1  |
| Lead      | ppm    | ASTM D5185(m) | >40     | <b>0</b>     | <1       | <1 |
| Copper    | ppm    | ASTM D5185(m) | >330    | <b>3</b>     | 4        | 5  |
| Tin       | ppm    | ASTM D5185(m) | >15     | <b>0</b>     | 0        | 0  |
| Antimony  | ppm    | ASTM D5185(m) |         | <b>0</b>     | 0        | 0  |
| Vanadium  | ppm    | ASTM D5185(m) |         | <b>0</b>     | 0        | 0  |
| Beryllium | ppm    | ASTM D5185(m) |         | <b>0</b>     | 0        | 0  |
| Cadmium   | ppm    | ASTM D5185(m) |         | <b>0</b>     | 0        | 0  |

## ADDITIVES

|            | method | limit/base    | current | history1     | history2 |      |
|------------|--------|---------------|---------|--------------|----------|------|
| Boron      | ppm    | ASTM D5185(m) |         | <b>71</b>    | 75       | 52   |
| Barium     | ppm    | ASTM D5185(m) |         | <b>0</b>     | <1       | <1   |
| Molybdenum | ppm    | ASTM D5185(m) |         | <b>0</b>     | 0        | <1   |
| Manganese  | ppm    | ASTM D5185(m) |         | <b>0</b>     | 0        | 0    |
| Magnesium  | ppm    | ASTM D5185(m) |         | <b>14</b>    | 13       | 17   |
| Calcium    | ppm    | ASTM D5185(m) | 3780    | <b>2213</b>  | 2245     | 2205 |
| Phosphorus | ppm    | ASTM D5185(m) | 1370    | <b>932</b>   | 968      | 883  |
| Zinc       | ppm    | ASTM D5185(m) | 1500    | <b>1139</b>  | 1157     | 1076 |
| Sulfur     | ppm    | ASTM D5185(m) | 3800    | <b>2759</b>  | 2894     | 2861 |
| Lithium    | ppm    | ASTM D5185(m) |         | <b>&lt;1</b> | <1       | <1   |

## CONTAMINANTS

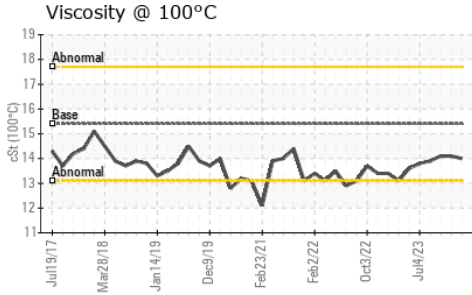
|           | method | limit/base    | current | history1 | history2 |   |
|-----------|--------|---------------|---------|----------|----------|---|
| Silicon   | ppm    | ASTM D5185(m) | >25     | <b>2</b> | 3        | 3 |
| Sodium    | ppm    | ASTM D5185(m) | >192    | <b>2</b> | 2        | 2 |
| Potassium | ppm    | ASTM D5185(m) | >20     | <b>5</b> | 4        | 4 |

## INFRA-RED

|           | method   | limit/base  | current | history1    | history2 |      |
|-----------|----------|-------------|---------|-------------|----------|------|
| Soot %    | %        | ASTM D7844* | >6      | <b>1.3</b>  | 0.9      | 1    |
| Nitration | Abs/cm   | ASTM D7624* | >20     | <b>10.2</b> | 9.1      | 10.5 |
| Sulfation | Abs./1mm | ASTM D7415* | >30     | <b>24.7</b> | 23.7     | 26.8 |



# OIL ANALYSIS REPORT

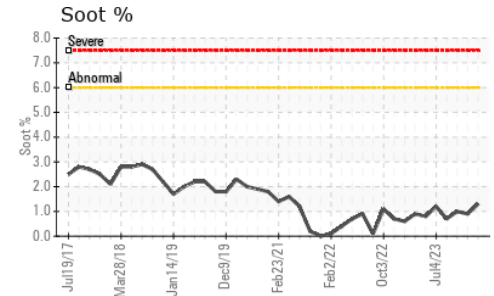
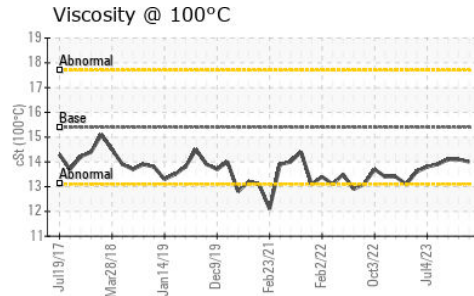
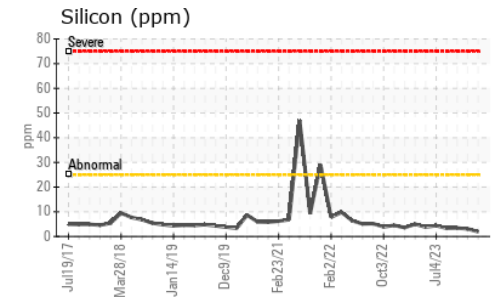
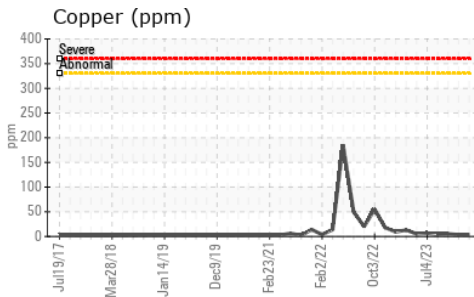
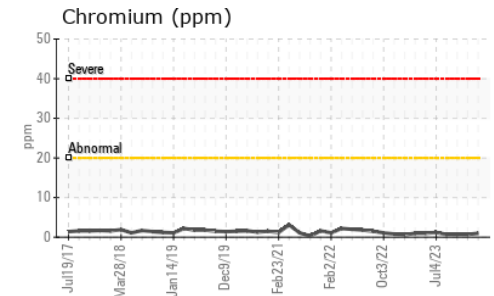
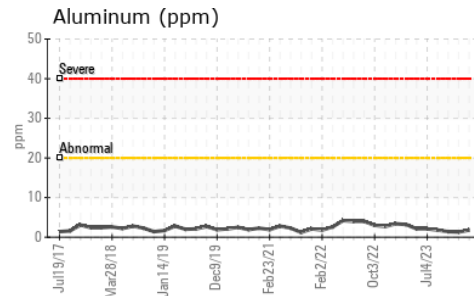
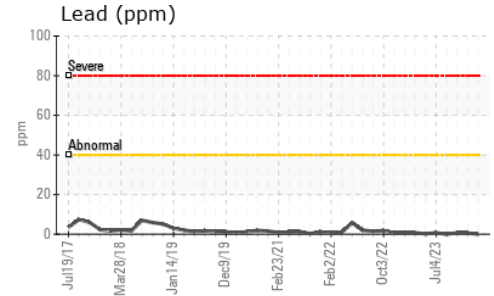
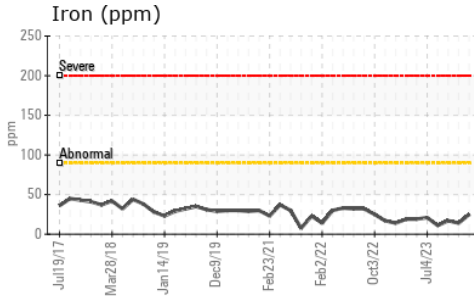


| FLUID DEGRADATION |          | method      | limit/base | current     | history1 | history2 |
|-------------------|----------|-------------|------------|-------------|----------|----------|
| Oxidation         | Abs./1mm | ASTM D7414* | >25        | <b>19.2</b> | 19.0     | 23.9     |

| VISUAL           |        | method  | limit/base | current    | history1 | history2 |
|------------------|--------|---------|------------|------------|----------|----------|
| Emulsified Water | scalar | Visual* | >0.2       | <b>NEG</b> | NEG      | NEG      |
| Free Water       | scalar | Visual* |            | <b>NEG</b> | NEG      | NEG      |

| FLUID PROPERTIES |     | method        | limit/base | current     | history1 | history2 |
|------------------|-----|---------------|------------|-------------|----------|----------|
| Visc @ 100°C     | cSt | ASTM D7279(m) | 15.4       | <b>14.0</b> | 14.1     | 14.1     |

## GRAPHS



**Laboratory** : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9  
**Sample No.** : WC0889035  
**Lab Number** : **02624919**  
**Unique Number** : 5750038  
**Test Package** : MOB 1  
**Received** : 27 Mar 2024  
**Tested** : 27 Mar 2024  
**Diagnosed** : 27 Mar 2024 - Wes Davis

**CITY OF THUNDER BAY**  
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 F: (807)344-0237

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.