



OIL ANALYSIS REPORT

|                 |               |
|-----------------|---------------|
| WEAR            | <b>NORMAL</b> |
| CONTAMINATION   | <b>NORMAL</b> |
| FLUID CONDITION | <b>NORMAL</b> |

Area  
**GM Seattle Off Road Shop**  
 Machine Id  
**[GM Seattle Off Road Shop] 28-433**  
 Component  
**Diesel Engine**  
 Fluid  
**SHELL 15W40 (--- GAL)**

**RECOMMENDATION**

Resample at the next service interval to monitor.

| Test           | UOM | Method      | Limit/Abn | Current            | History1    | History2    |
|----------------|-----|-------------|-----------|--------------------|-------------|-------------|
| Sample Number  |     | Client Info |           | <b>PE0003085</b>   | PE0001019   | PE12290992  |
| Sample Date    |     | Client Info |           | <b>04 Jun 2024</b> | 13 Feb 2024 | 28 Jan 2022 |
| Machine Age    | hrs | Client Info |           | <b>5353</b>        | 4699        | 1539        |
| Oil Age        | hrs | Client Info |           | <b>654</b>         | 1975        | 374         |
| Filter Age     | hrs | Client Info |           | <b>0</b>           | 0           | ---         |
| Oil Changed    |     | Client Info |           | <b>Changed</b>     | Changed     | Not Changed |
| Filter Changed |     | Client Info |           | <b>Changed</b>     | Changed     | ---         |
| Sample Status  |     |             |           | <b>NORMAL</b>      | NORMAL      | NORMAL      |

**WEAR**

All component wear rates are normal.

|              |        |             |      |              |      |     |
|--------------|--------|-------------|------|--------------|------|-----|
| Iron         | ppm    | ASTM D5185m | >100 | <b>&lt;1</b> | 8    | 4   |
| Chromium     | ppm    | ASTM D5185m | >20  | <b>0</b>     | 0    | 0   |
| Nickel       | ppm    | ASTM D5185m | >4   | <b>0</b>     | 0    | 0   |
| Titanium     | ppm    | ASTM D5185m |      | <b>&lt;1</b> | 11   | 1   |
| Silver       | ppm    | ASTM D5185m | >3   | <b>0</b>     | <1   | <1  |
| Aluminum     | ppm    | ASTM D5185m | >20  | <b>&lt;1</b> | 2    | 0   |
| Lead         | ppm    | ASTM D5185m | >40  | <b>0</b>     | 2    | 1   |
| Copper       | ppm    | ASTM D5185m | >330 | <b>&lt;1</b> | 14   | 37  |
| Tin          | ppm    | ASTM D5185m | >15  | <b>0</b>     | <1   | 0   |
| Vanadium     | ppm    | ASTM D5185m |      | <b>&lt;1</b> | 0    | 0   |
| White Metal  | scalar | *Visual     | NONE | <b>NONE</b>  | NONE | --- |
| Yellow Metal | scalar | *Visual     | NONE | <b>NONE</b>  | NONE | --- |

**CONTAMINATION**

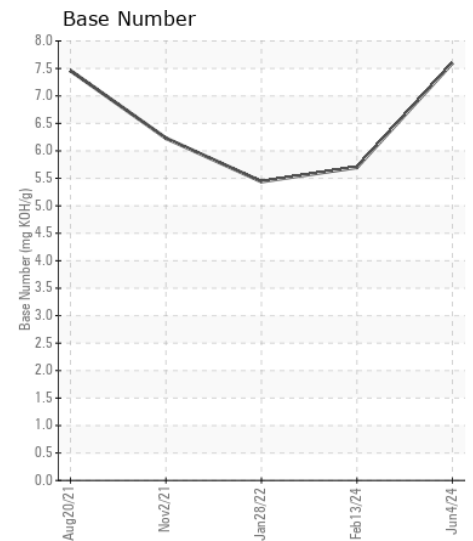
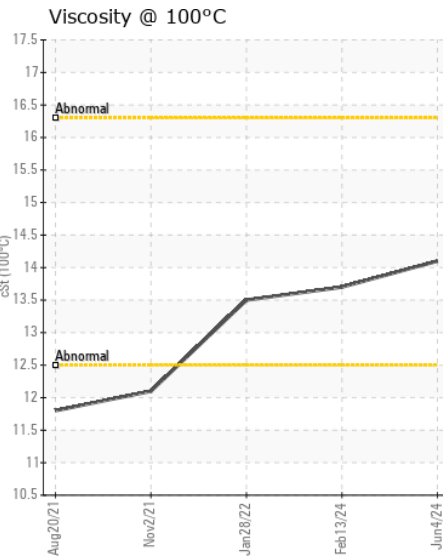
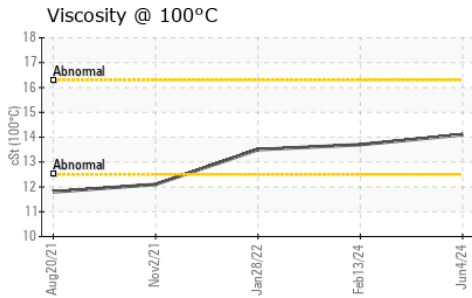
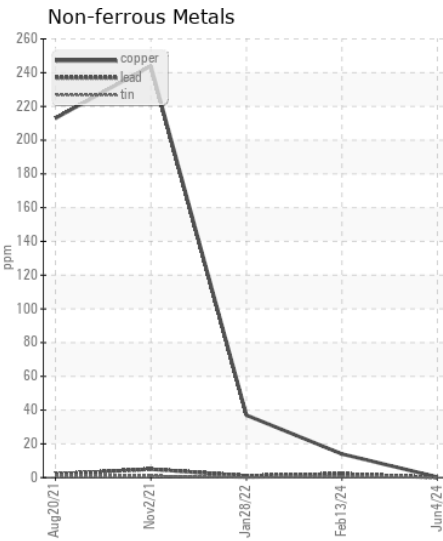
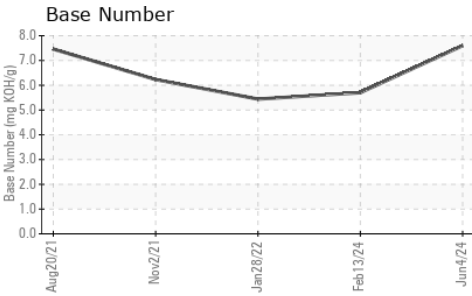
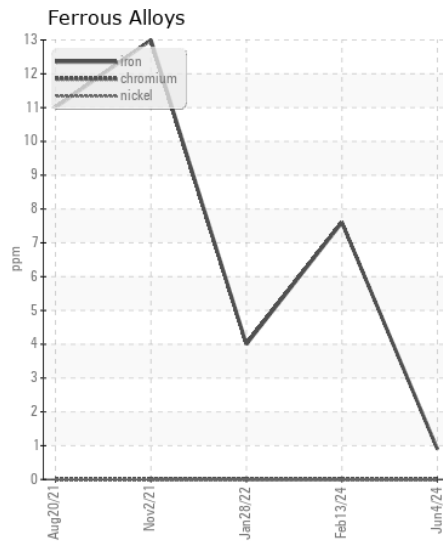
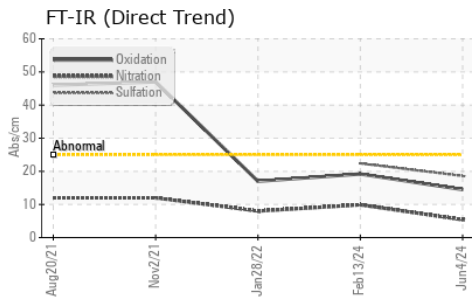
There is no indication of any contamination in the oil.

|                  |          |             |       |                |       |      |
|------------------|----------|-------------|-------|----------------|-------|------|
| Silicon          | ppm      | ASTM D5185m | >25   | <b>4</b>       | 5     | 5    |
| Potassium        | ppm      | ASTM D5185m | >20   | <b>1</b>       | <1    | 0    |
| Fuel             |          | WC Method   | >5    | <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  |
| Soot %           | %        | *ASTM D7844 | >3    | <b>0.1</b>     | 0.2   | 0.3  |
| Nitration        | Abs/cm   | *ASTM D7624 | >20   | <b>5.4</b>     | 9.9   | 8    |
| Sulfation        | Abs/.1mm | *ASTM D7415 | >30   | <b>18.6</b>    | 22.4  | ---  |
| Silt             | scalar   | *Visual     | NONE  | <b>NONE</b>    | NONE  | ---  |
| Debris           | scalar   | *Visual     | NONE  | <b>NONE</b>    | NONE  | ---  |
| Sand/Dirt        | scalar   | *Visual     | NONE  | <b>NONE</b>    | NONE  | ---  |
| Appearance       | scalar   | *Visual     | NORML | <b>NORML</b>   | NORML | ---  |
| Odor             | scalar   | *Visual     | NORML | <b>NORML</b>   | NORML | ---  |
| Emulsified Water | scalar   | *Visual     | >0.2  | <b>NEG</b>     | NEG   | ---  |

**FLUID CONDITION**

The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

|                  |          |             |      |              |      |      |
|------------------|----------|-------------|------|--------------|------|------|
| Sodium           | ppm      | ASTM D5185m | >150 | <b>&lt;1</b> | 3    | 0    |
| Boron            | ppm      | ASTM D5185m |      | <b>107</b>   | 24   | 55   |
| Barium           | ppm      | ASTM D5185m |      | <b>0</b>     | 0    | 2    |
| Molybdenum       | ppm      | ASTM D5185m |      | <b>17</b>    | 60   | 51   |
| Manganese        | ppm      | ASTM D5185m |      | <b>0</b>     | <1   | ---  |
| Magnesium        | ppm      | ASTM D5185m |      | <b>134</b>   | 298  | 783  |
| Calcium          | ppm      | ASTM D5185m |      | <b>2166</b>  | 1850 | 1805 |
| Phosphorus       | ppm      | ASTM D5185m |      | <b>1041</b>  | 1017 | 1191 |
| Zinc             | ppm      | ASTM D5185m |      | <b>1241</b>  | 1238 | 1381 |
| Sulfur           | ppm      | ASTM D5185m |      | <b>4254</b>  | 3709 | ---  |
| Oxidation        | Abs/.1mm | *ASTM D7414 | >25  | <b>14.5</b>  | 19.2 | 17   |
| Base Number (BN) | mg KOH/g | ASTM D2896  |      | <b>7.6</b>   | 5.7  | 5.44 |
| Visc @ 100°C     | cSt      | ASTM D445   |      | <b>14.1</b>  | 13.7 | 13.5 |



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : PE0003085  
**Lab Number** : 06211073  
**Unique Number** : 11083937  
**Test Package** : CONST ( Additional Tests: FT-IR, ICP, KV100, SCREEN, TBN )

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To discuss this sample report, contact Customer Service at 1-800-237-1369.

\* - Denotes test methods that are outside of the ISO 17025 scope of accreditation.

Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)