CONST

James River Equipment

OIL ANALYSIS REPORT

| | |
|---|---|
| WEAR | NORMAL |
| CONTAMINATION | NORMAL |
| FLUID CONDITION | NORMAL |

Machine Id
**4031**
Component
**Diesel Engine**
Fluid
**SHELL ROTELLA T 15W40 (--- GAL)**

## RECOMMENDATION

Resample at the next service interval to monitor.

## WEAR

All component wear rates are normal.

## CONTAMINATION

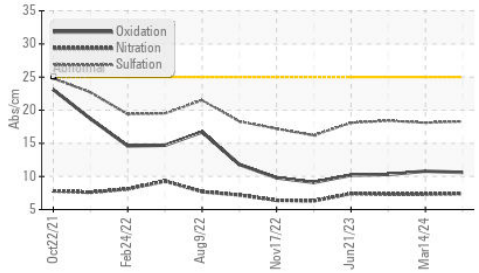
There is no indication of any contamination in the oil.

## FLUID CONDITION

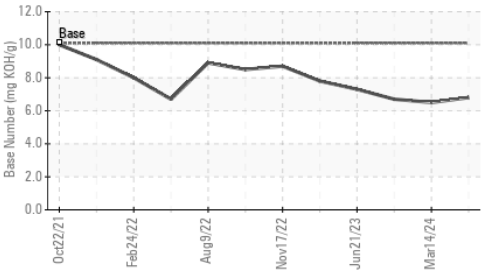
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

| Test | UOM | Method | Limit/Abn | Current | History1 | History2 |
|---|---|---|---|---|---|---|
| Sample Number | | Client Info | | **JR0221914** | JR0210326 | JR0195233 |
| Sample Date | | Client Info | | **24 Jun 2024** | 14 Mar 2024 | 14 Nov 2023 |
| Machine Age | hrs | Client Info | | **5206** | 4588 | 3966 |
| Oil Age | hrs | Client Info | | **500** | 4000 | 500 |
| Filter Age | hrs | Client Info | | **500** | 4000 | 500 |
| Oil Changed | | Client Info | | **Changed** | Changed | Changed |
| Filter Changed | | Client Info | | **Changed** | Changed | Changed |
| Sample Status | | | | **NORMAL** | NORMAL | NORMAL |
| Iron | ppm | ASTM D5185m | >100 | **21** | 16 | 12 |
| Chromium | ppm | ASTM D5185m | >20 | **<1** | <1 | <1 |
| Nickel | ppm | ASTM D5185m | >2 | **<1** | <1 | 1 |
| Titanium | ppm | ASTM D5185m | >2 | **<1** | <1 | 0 |
| Silver | ppm | ASTM D5185m | >2 | **<1** | 0 | <1 |
| Aluminum | ppm | ASTM D5185m | >25 | **3** | 2 | 2 |
| Lead | ppm | ASTM D5185m | >40 | **<1** | <1 | 0 |
| Copper | ppm | ASTM D5185m | >330 | **1** | 2 | 1 |
| Tin | ppm | ASTM D5185m | >15 | **<1** | <1 | <1 |
| Vanadium | ppm | ASTM D5185m | | **<1** | <1 | <1 |
| White Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Silicon | ppm | ASTM D5185m | >25 | **4** | 4 | 3 |
| Potassium | ppm | ASTM D5185m | >20 | **3** | 2 | 2 |
| Fuel | | WC Method | >5 | **<1.0** | <1.0 | <1.0 |
| Water | | WC Method | >0.2 | **NEG** | NEG | NEG |
| Glycol | | WC Method | | **NEG** | NEG | NEG |
| Soot % | % | *ASTM D7844 | >3 | **0.6** | 0.5 | 0.7 |
| Nitration | Abs/cm | *ASTM D7624 | >20 | **7.4** | 7.3 | 7.3 |
| Sulfation | Abs/.1mm | *ASTM D7415 | >30 | **18.3** | 18.1 | 18.4 |
| 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 | >0.2 | **NEG** | NEG | NEG |
| Sodium | ppm | ASTM D5185m | | **0** | <1 | 1 |
| Boron | ppm | ASTM D5185m | 316 | **9** | 9 | 1 |
| Barium | ppm | ASTM D5185m | 0.0 | **<1** | 0 | 0 |
| Molybdenum | ppm | ASTM D5185m | 1.2 | **5** | 4 | 1 |
| Manganese | ppm | ASTM D5185m | | **<1** | <1 | <1 |
| Magnesium | ppm | ASTM D5185m | 24 | **66** | 55 | 43 |
| Calcium | ppm | ASTM D5185m | 2292 | **2352** | 2391 | 2241 |
| Phosphorus | ppm | ASTM D5185m | 1064 | **889** | 912 | 889 |
| Zinc | ppm | ASTM D5185m | 1160 | **1073** | 1097 | 1100 |
| Sulfur | ppm | ASTM D5185m | 4996 | **3375** | 4048 | 3853 |
| Oxidation | Abs/.1mm | *ASTM D7414 | >25 | **10.6** | 10.8 | 10.3 |
| Base Number (BN) | mg KOH/g | ASTM D2896 | 10.1 | **6.8** | 6.5 | 6.7 |
| Visc @ 100°C | cSt | ASTM D445 | 15.7 | **13.6** | 13.4 | 13.7 |

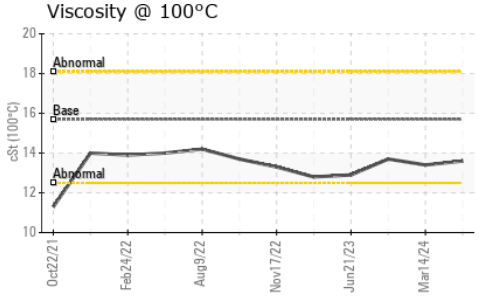
FT-IR (Direct Trend)



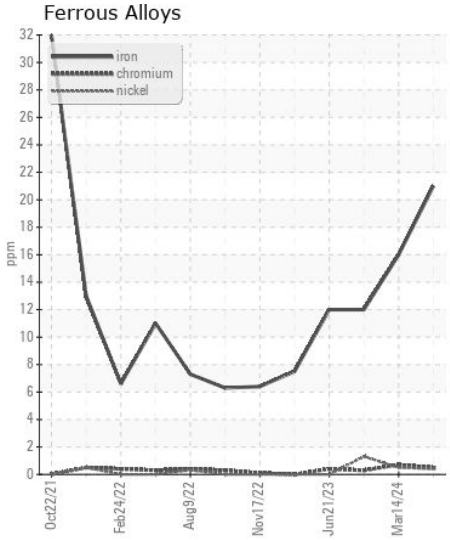

Base Number



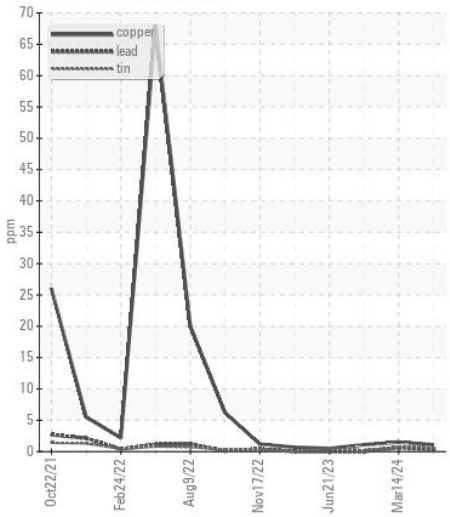

Viscosity @ 100°C



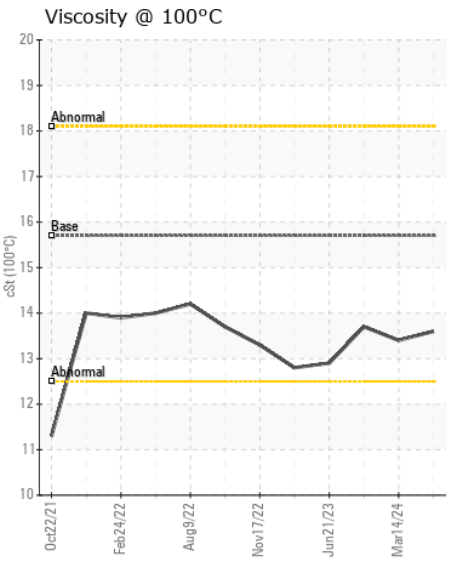

Ferrous Alloys




Non-ferrous Metals




Viscosity @ 100°C

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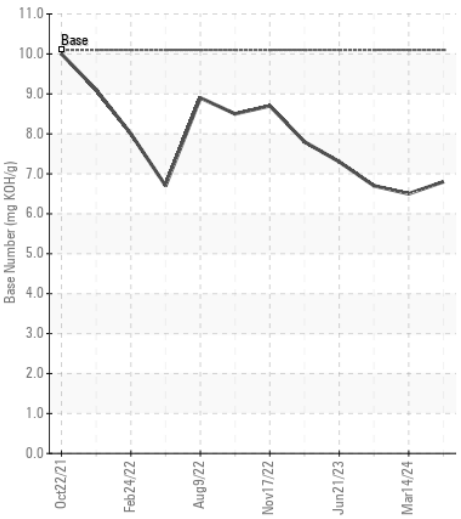


Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513
**Sample No.** : JR0221914
**Lab Number** : 06225949
**Unique Number** : 11109442
**Test Package** : CONST ( Additional Tests: TBN )

**Received** : 02 Jul 2024
**Tested** : 03 Jul 2024
**Diagnosed** : 03 Jul 2024 - Angela Borella

*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)*

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