TRAAP
Texas Refinery Advanced Analysis Program

# OIL ANALYSIS REPORT

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

Machine Id
**BOBCAT 232512601**
Component
**Diesel Engine**
Fluid
**TRC PRO-SPEC III SYNTHETIC BLEND 15W40 (8 LTR)**

## RECOMMENDATION

Resample at the next service interval to monitor.

## WEAR

Metal levels are typical for a new component breaking in.

## CONTAMINATION

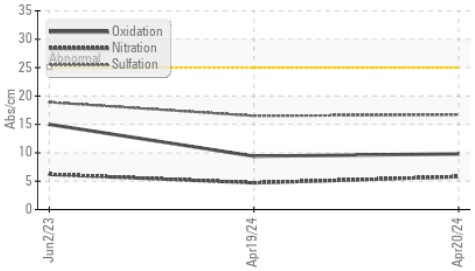
There is no indication of any contamination in the oil.

## FLUID CONDITION

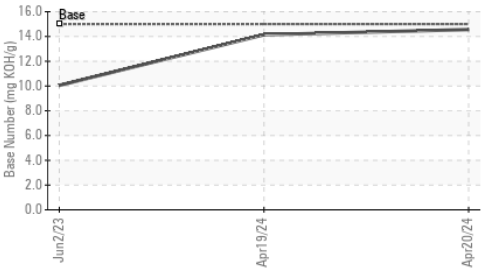
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

| Test | UOM | Method | Limit/Abn | Current | History1 | History2 |
|---|---|---|---|---|---|---|
| Sample Number | | Client Info | | TR02632485 | TR02632484 | TR02570313 |
| Sample Date | | Client Info | | 20 Apr 2024 | 19 Apr 2024 | 02 Jun 2023 |
| Machine Age | hrs | Client Info | | 627 | 627 | 600 |
| Oil Age | hrs | Client Info | | 0 | 0 | 0 |
| Filter Age | hrs | Client Info | | 0 | 0 | 0 |
| Oil Changed | | Client Info | | Changed | Changed | Changed |
| Filter Changed | | Client Info | | Changed | Changed | Changed |
| Sample Status | | | | NORMAL | NORMAL | NORMAL |
| Iron | ppm | ASTM D5185(m) | >100 | 6 | 7 | 9 |
| Chromium | ppm | ASTM D5185(m) | >20 | 0 | <1 | 2 |
| Nickel | ppm | ASTM D5185(m) | >4 | 0 | 0 | 0 |
| Titanium | ppm | ASTM D5185(m) | | 0 | 0 | 0 |
| Silver | ppm | ASTM D5185(m) | >3 | 0 | 0 | 0 |
| Aluminum | ppm | ASTM D5185(m) | >20 | 2 | 3 | 2 |
| Lead | ppm | ASTM D5185(m) | >40 | 0 | 0 | 0 |
| 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 | 3 | 7 | 7 |
| Potassium | ppm | ASTM D5185(m) | >20 | 1 | 1 | 5 |
| 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 | 0 | 0.2 |
| Nitration | Abs/cm | ASTM D7624* | >20 | 5.8 | 4.7 | 6.2 |
| Sulfation | Abs/.1mm | ASTM D7415* | >30 | 16.7 | 16.5 | 18.9 |
| Emulsified Water | scalar | Visual* | >0.2 | NEG | NEG | NEG |
| Sodium | ppm | ASTM D5185(m) | | 2 | 2 | 6 |
| Boron | ppm | ASTM D5185(m) | | 2 | 5 | 29 |
| Barium | ppm | ASTM D5185(m) | | 0 | 0 | 0 |
| Molybdenum | ppm | ASTM D5185(m) | | 33 | 0 | <1 |
| Manganese | ppm | ASTM D5185(m) | | 0 | 0 | <1 |
| Magnesium | ppm | ASTM D5185(m) | | 17 | 17 | 11 |
| Calcium | ppm | ASTM D5185(m) | 4500 | 4705 | 4492 | 2634 |
| Phosphorus | ppm | ASTM D5185(m) | | 955 | 879 | 966 |
| Zinc | ppm | ASTM D5185(m) | 1400 | 1061 | 993 | 1091 |
| Sulfur | ppm | ASTM D5185(m) | | 3514 | 3268 | 3078 |
| Oxidation | Abs/.1mm | ASTM D7414* | >25 | 9.8 | 9.4 | 15.0 |
| Base Number (BN) | mg KOH/g | ASTM D2896* | 15 | 14.56 | 14.14 | 10.05 |
| Visc @ 100°C | cSt | ASTM D7279(m) | 15.5 | 14.0 | 14.2 | 15.8 |

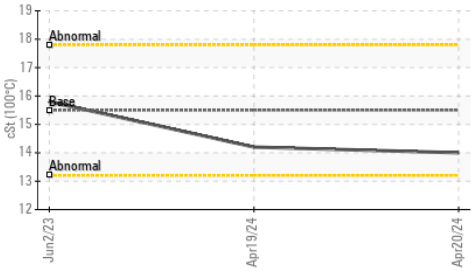
FT-IR (Direct Trend)



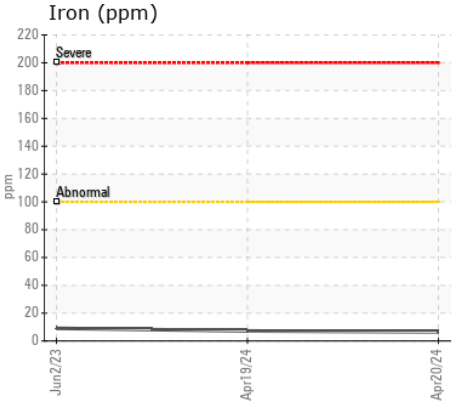

Base Number



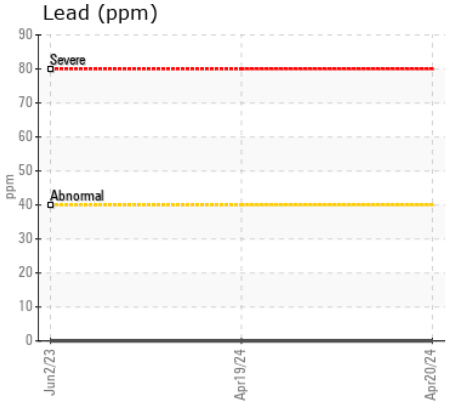

Viscosity @ 100°C



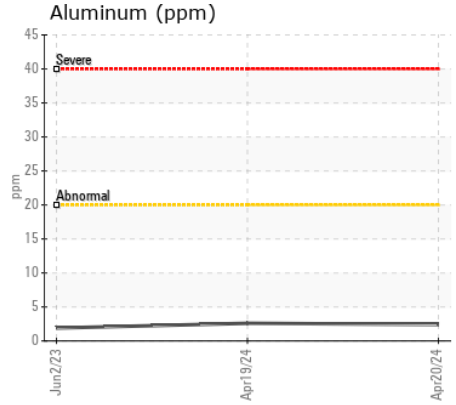

Iron (ppm)



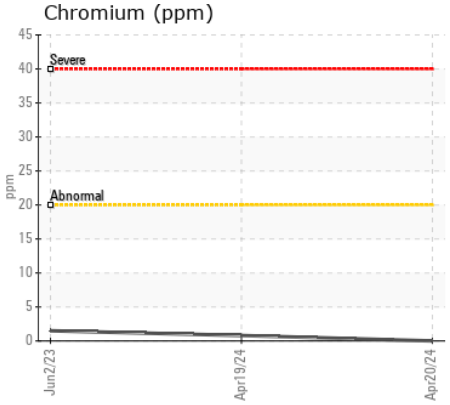

Lead (ppm)



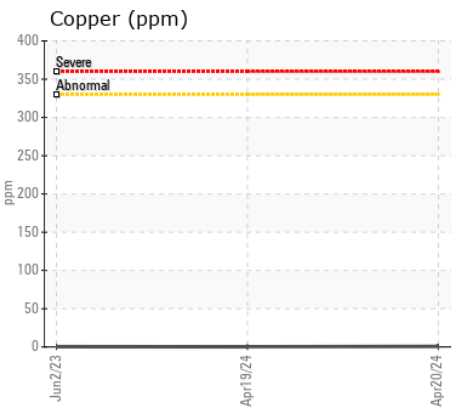

Aluminum (ppm)



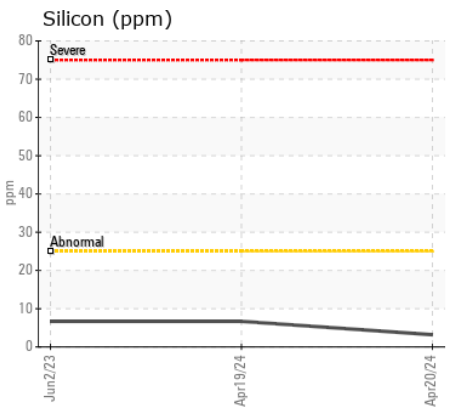

Chromium (ppm)



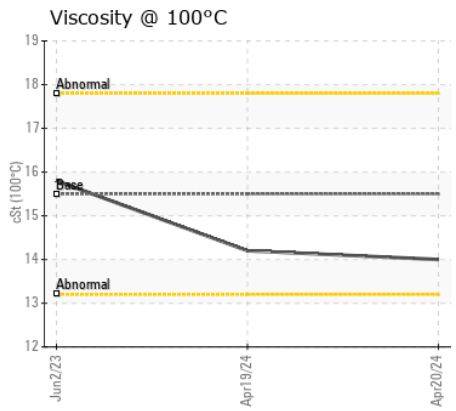

Copper (ppm)



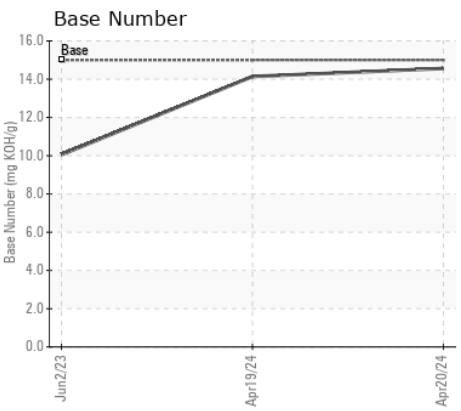

Silicon (ppm)




Viscosity @ 100°C




Base Number




ISO 17025:2017 Accredited Laboratory

**Laboratory** : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
**Sample No.** : TR02632485
**Lab Number** : 02632485
**Unique Number** : 5773638
**Test Package** : MOB 2

**Received** : 01 May 2024
**Tested** : 02 May 2024
**Diagnosed** : 02 May 2024 - Wes Davis

*To discuss this sample report, contact Customer Service at 1-800-827-0711.*
** - 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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