

OIL ANALYSIS REPORT

Sample Rating Trend



Area MIDLAND 112 Component **Diesel Engine** NOT GIVEN (--- GAL)

DIAGNOSIS

A Recommendation

We advise that you check for possible coolant leak. Check for low coolant level. We recommend an early resample to monitor this condition.

A Wear

The lead level is abnormal. All other component wear rates are normal.

Contamination

Sodium and/or potassium levels are high. There is a moderate amount of particulates present in the oil.

Fluid Condition

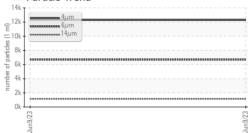
The BN result indicates that there is suitable alkalinity remaining in the oil.

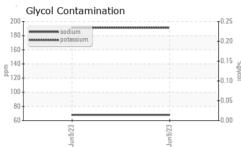
| SAMPLE INFORM | ATION | method | limit/base | current | history1 | history2 | |
|---------------|----------|-------------|------------|-------------------|----------|----------|--|
| Sample Number | | Client Info | | KL0012447 | | | |
| Sample Date | | Client Info | | 09 Jun 2023 | | | |
| Machine Age | hrs | Client Info | | 2242 | | | |
| Oil Age | hrs | Client Info | | 0 | | | |
| Oil Changed | | Client Info | | N/A | | | |
| Sample Status | | | | ABNORMAL | | | |
| CONTAMINATION | | method | limit/base | current | history1 | history2 | |
| Fuel | | WC Method | >5 | <1.0 | | | |
| WEAR METALS | | method | limit/base | current | history1 | history2 | |
| Iron | ppm | ASTM D5185m | >100 | 35 | | | |
| Chromium | ppm | ASTM D5185m | >20 | <1 | | | |
| Nickel | ppm | ASTM D5185m | >4 | 0 | | | |
| Titanium | ppm | ASTM D5185m | | 0 | | | |
| Silver | ppm | ASTM D5185m | >3 | 0 | | | |
| Aluminum | ppm | ASTM D5185m | >20 | <1 | | | |
| Lead | ppm | ASTM D5185m | >40 | <mark>/</mark> 78 | | | |
| Copper | ppm | ASTM D5185m | >330 | 2 | | | |
| Tin | ppm | ASTM D5185m | >15 | <1 | | | |
| Vanadium | ppm | ASTM D5185m | | <1 | | | |
| Cadmium | ppm | ASTM D5185m | | 0 | | | |
| ADDITIVES | | method | limit/base | current | history1 | history2 | |
| Boron | ppm | ASTM D5185m | | 75 | | | |
| Barium | ppm | ASTM D5185m | | 0 | | | |
| Molybdenum | ppm | ASTM D5185m | | 118 | | | |
| Manganese | ppm | ASTM D5185m | | <1 | | | |
| Magnesium | ppm | ASTM D5185m | | 540 | | | |
| Calcium | ppm | ASTM D5185m | | 1758 | | | |
| Phosphorus | ppm | ASTM D5185m | | 1069 | | | |
| Zinc | ppm | ASTM D5185m | | 1376 | | | |
| Sulfur | ppm | ASTM D5185m | | 3805 | | | |
| CONTAMINANTS | | method | limit/base | current | history1 | history2 | |
| Silicon | ppm | ASTM D5185m | >25 | 9 | | | |
| Sodium | ppm | ASTM D5185m | | <mark>/</mark> 68 | | | |
| Potassium | ppm | ASTM D5185m | >20 | A 191 | | | |
| Glycol | % | *ASTM D2982 | | NEG | | | |
| INFRA-RED | | method | limit/base | current | history1 | history2 | |
| Soot % | % | *ASTM D7844 | >3 | 0.4 | | | |
| Nitration | Abs/cm | *ASTM D7624 | >20 | 10.5 | | | |
| Sulfation | Abs/.1mm | *ASTM D7415 | >30 | 28.7 | | | |
| | | | | | | | |



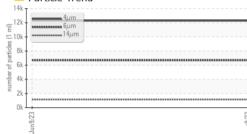
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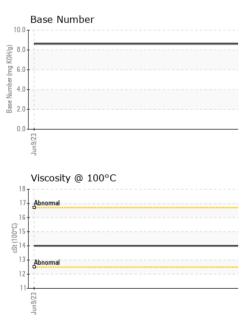






🔺 Particle Trend





| FLUID CLEANLINI | ESS | method | limit/base | | current | history1 | his | tory |
|----------------------------|----------|--------------|----------------------|------------------|--------------|----------|-----|------|
| Particles >4µm | | ASTM D7647 | | | 12275 | | | |
| Particles >6µm | | ASTM D7647 | >5000 | | 6687 | | | |
| Particles >14µm | | ASTM D7647 | >640 | | 1138 | | | |
| Particles >21µm | | ASTM D7647 | >160 | | 383 | | | |
| Particles >38µm | | ASTM D7647 | >40 | | 59 | | | |
| Particles >71µm | | ASTM D7647 | >10 | (| 6 | | | |
| Oil Cleanliness | | ISO 4406 (c) | >19/16 | | 20/17 | | | |
| FLUID DEGRADA | TION | method | limit/base | | current | history1 | his | tory |
| Oxidation | Abs/.1mm | *ASTM D7414 | >25 | : | 24.6 | | | |
| Base Number (BN) | mg KOH/g | ASTM D2896 | | 1 | 8.62 | | | |
| VISUAL | | method | limit/base | | current | history1 | his | tory |
| White Metal | scalar | *Visual | NONE | I | NONE | | | |
| Yellow Metal | scalar | *Visual | NONE | | NONE | | | |
| Precipitate | scalar | *Visual | NONE | I | NONE | | | |
| Silt | scalar | *Visual | NONE | | NONE | | | |
| Debris | scalar | *Visual | NONE | | NONE | | | |
| Sand/Dirt | scalar | *Visual | NONE | l | NONE | | | |
| Appearance | scalar | *Visual | NORML | | NORML | | | |
| Odor | scalar | *Visual | NORML | | NORML | | | |
| Emulsified Water | scalar | *Visual | >0.2 | | NEG | | | |
| Free Water | scalar | *Visual | | | NEG | | | |
| FLUID PROPERTI | ES | method | limit/base | | current | history1 | his | tor |
| Visc @ 100°C | cSt | ASTM D445 | | | 14.0 | | | |
| GRAPHS | | | | | | | | |
| Ferrous Alloys | | | | | article Cour | nt | | |
| 40 30 | | | 491,5 | | | | | |
| 20 - nickel | | | 122,8 | 80- | | | | |
| 10 | | | 30,7 | 20 | 1 | | | |
| | | | = 7.6 | 80 | | · · | | |
| Jun9/23 | | | Jun9/23 (per 1 ml | 20 | | | | |
| | | | cles (i | | | | | |
| Non-ferrous Metals 80 T | | | nono- t | 80- | | | | |
| 60 - copper | | | in a second | 20- | | | | |
| 40 - tin | | | E | 30 - | | | | |
| 20 - | | | | 8 Sien | evernal | | | 1 |
| | | | 23 | 2 | | | | |
| Jun9/23 | | | Jun9/23 | - | | | | |
| | | | - | 0 4µ | 6µ | 14µ 21µ | 38µ | 7 |
| - | | | (^B /10 | Ва 0.0 т п. п | ase Numbe | r | | |
| Viscosity @ 100°C | | | | - 1 | | | | _ |
| Viscosity @ 100°C | | | loy B | | | | | |
| Viscosity @ 100°C | | | ber (mg KO | 5.0 | | | | |
| Viscosity @ 100°C | | | Number (mg KO | 5.0- | | | | |
| Viscosity @ 100°C | | | (mg KO | | | | | |

Laboratory Sample No. : KL0012447 Received : 15 Jun 2023 4500 E TX 158 Lab Number : 05875051 Diagnosed : 19 Jun 2023 MIDLAND, TX Unique Number : 10520154 Diagnostician : Jonathan Hester US 76706 Test Package : MOB 2 (Additional Tests: Glycol, PrtCount) Contact: ABEL SALAZAR Certificate L2367 To discuss this sample report, contact Customer Service at 1-800-237-1369. abel@salazarservice.com * - Denotes test methods that are outside of the ISO 17025 scope of accreditation. T: (432)699-3500 Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

Report Id: SALMID [WUSCAR] 05875051 (Generated: 09/25/2023 16:44:57) Rev: 1

Contact/Location: ABEL SALAZAR - SALMID

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