

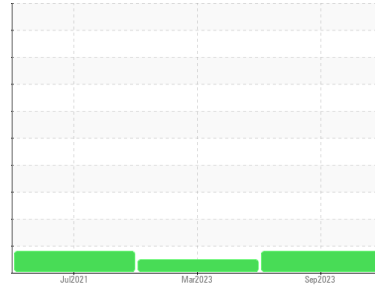


COOLANT REPORT

Sample Rating Trend

APPEARANCE

Area
Map Runner
 Machine Id
[Map Runner] Coolant - Starboard Main Engine
 Component
Coolant
 Fluid
CAT EXTENDED LIFE COOLANT (ELC) (--- GAL)



DIAGNOSIS

Recommendation

We recommend drain/flush system, and refill with 50/50 antifreeze water mixture.

Corrosion

All metal levels are normal indicating no corrosion in the cooling system.

Contaminants

Sediment present.

Coolant Condition

Carboxylate test failed. The nitrite level is acceptable. The glycol level is acceptable. The pH level of this fluid is within the acceptable limits.

SAMPLE INFORMATION

| | method | limit/base | current | history1 | history2 |
|---------------|-------------|-------------|--------------------|-------------|-------------|
| Sample Number | Client Info | | WC0805576 | RP0015800 | RP0015859 |
| Sample Date | Client Info | | 21 Sep 2023 | 15 Mar 2023 | 01 Jul 2021 |
| Machine Age | hrs | Client Info | 0 | 0 | 12238 |
| Oil Age | hrs | Client Info | 2716 | 0 | 718 |
| Oil Changed | Client Info | | N/A | N/A | Not Changd |
| Sample Status | | | ABNORMAL | NORMAL | ABNORMAL |

PHYSICAL TEST RESULTS

| | method | limit/base | current | history1 | history2 |
|------------------------|------------------------|------------|--------------|----------|----------|
| Specific Gravity | *ASTM D1298 | | 1.041 | 1.029 | --- |
| pH | Scale 0-14 ASTM D1287 | | 9.23 | 7.13 | 8.76 |
| Nitrites | ppm AP-053:2009 | | 372 | 600 | 448 |
| Reserve Alkalinity | Scale 0-20 *ASTM D1121 | | --- | --- | --- |
| Percentage Glycol | % ASTM D3321 | | 30.4 | 22.7 | 36 |
| Freezing Point | °F ASTM D3321 | | 4 | 14 | -7 |
| Total Dissolved Solids | | | 211.5 | 131.0 | 311.0 |
| Carboxylate | | | fail | fail | pass |

CORROSION INHIBITORS

| | method | limit/base | current | history1 | history2 |
|------------|----------------|------------|------------|----------|----------|
| Silicon | ppm ASTM D6130 | 0 | 20 | 31 | --- |
| Phosphorus | ppm ASTM D6130 | 0 | 0 | 0 | --- |
| Boron | ppm ASTM D6130 | 0 | 2 | 0 | --- |
| Molybdenum | ppm ASTM D6130 | 950 | 749 | 535 | --- |

CORROSION

| | method | limit/base | current | history1 | history2 |
|----------|----------------|------------|--------------|----------|----------|
| Iron | ppm ASTM D6130 | >15 | 48 | 7 | --- |
| Aluminum | ppm ASTM D6130 | >10 | 0 | 0 | --- |
| Copper | ppm ASTM D6130 | >10 | <1 | <1 | --- |
| Lead | ppm ASTM D6130 | >10 | 0 | 0 | --- |
| Tin | ppm ASTM D6130 | >10 | 0 | 0 | --- |
| Zinc | ppm ASTM D6130 | | <1 | 1 | --- |

CONTAMINANTS

| | method | limit/base | current | history1 | history2 |
|----------|----------------|------------|-----------|----------|----------|
| Chlorine | ppm ASTM D6130 | | 19 | 46 | --- |

CARRIER SALTS

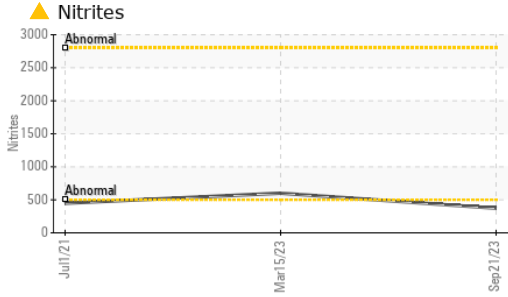
| | method | limit/base | current | history1 | history2 |
|-----------|----------------|------------|-------------|----------|----------|
| Sodium | ppm ASTM D6130 | | 4517 | 3748 | --- |
| Potassium | ppm ASTM D6130 | | 0 | 0 | --- |

SCALE POTENTIAL

| | method | limit/base | current | history1 | history2 |
|-----------|----------------|------------|--------------|----------|----------|
| Calcium | ppm ASTM D6130 | | 9 | 10 | --- |
| Magnesium | ppm ASTM D6130 | | <1 | 11 | --- |

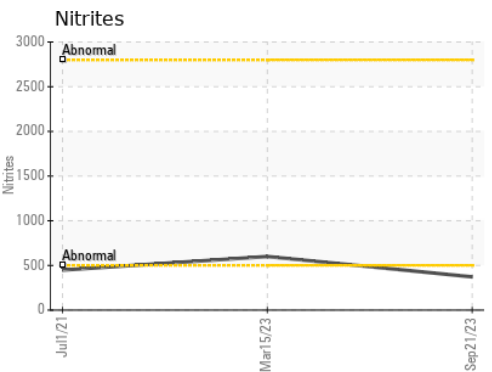
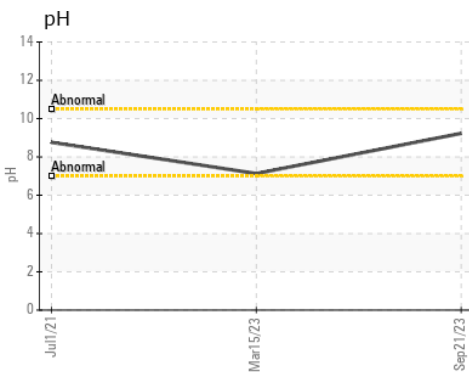
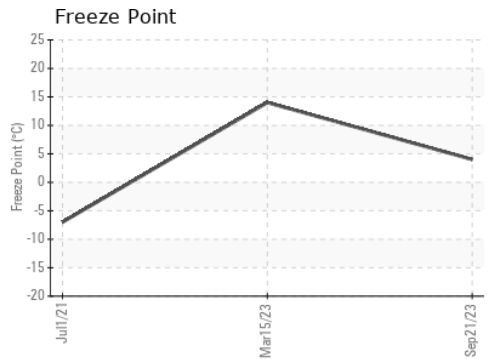
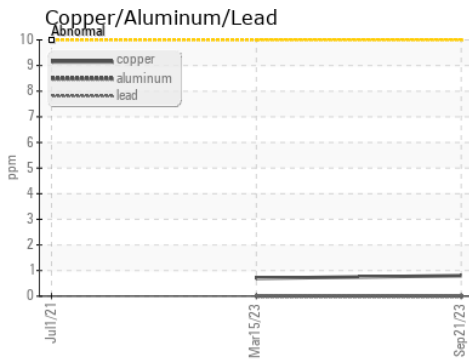
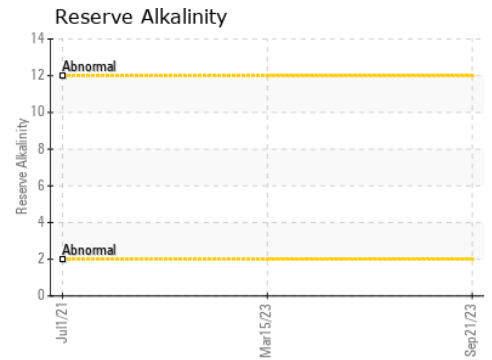
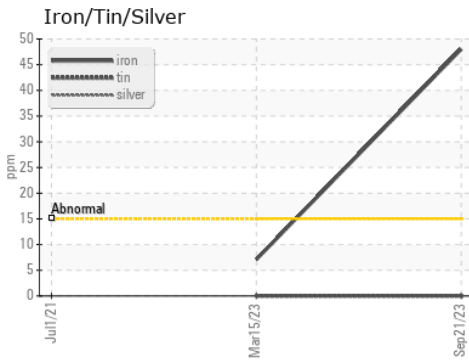


COOLANT REPORT



| VISUAL | method | limit/base | current | history1 | history2 |
|--------------------|---------|------------|------------|----------|------------|
| Coolant Color | *Visual | | Red | Red | Red |
| Coolant Appearance | *Visual | Clear | ▲ sediment | normal | ▲ sediment |
| Color | | | | | |
| Bottom | | | | | |

GRAPHS



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0805576 **Received** : 25 Sep 2023
Lab Number : 05960909 **Diagnosed** : 28 Sep 2023
Unique Number : 10662122 **Diagnostician** : Doug Bogart
Test Package : COOL- (Additional Tests: COOL, ICP, KF)

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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)