

OIL ANALYSIS REPORT

Sample Rating Trend

ISO

Machine Id

KAESER SK 19 2090033 (S/N 1247)

Component Compressor

Fluid KAESER SIGMA (OEM) S-460 (--- GAL)

DIAGNOSIS

Recommendation

Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

Contamination

There is a high amount of particulates present in the oil.

Fluid Condition

The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

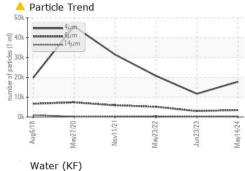
| Machine Age hrs Client Info 29758 29062 27144 Oil Age hrs Client Info 691 0 1005 Oil Changed Client Info 691 0 1005 Sample Status Image Client Info 691 ABNORMAL ABNORMAL | SAMPLE INFORM | IATION | method | limit/base | current | history1 | history2 |
|---|------------------|----------|-------------|------------|---------------|-------------|-------------|
| Machine Age hrs Client Into 29758 29062 27144 Oil Age hrs Client Into 691 0 1005 Oil Age hrs Client Into 691 0 1005 Sample Status Immit/base Current history1 history2 Iron ppm ASTM 05185m >50 0 <1 | Sample Number | | Client Info | | KCPA014463 | KCPA002053 | KCP44369 |
| Oil Age hrs Client Info 691 0 1005 Oil Changed Client Info Changed N/A Changed Sample Status method limit/base current history1 history2 Iron ppm ASTM 05185m >50 0 <1 | Sample Date | | Client Info | | 14 May 2024 | 23 Jun 2023 | 23 May 2022 |
| Oil Changed Client Info Changed N/A Changed Sample Status method limit/base current history1 ABNORMAL WEAR METALS method limit/base current history1 history2 Iron ppm ASTM 05185m >50 0 <1 | Machine Age | hrs | Client Info | | 29758 | 29062 | 27144 |
| Sample Status method Imit/base current history1 ABNORMAL WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >50 0 <1 | Oil Age | hrs | Client Info | | 691 | 0 | 1005 |
| WEAR METALS method limit/base current history1 history2 Iron ppm ASTM 05185m >50 0 <1 | Oil Changed | | Client Info | | Changed | N/A | Changed |
| Iron ppm ASTM D5185m >50 0 <1 <1 Chromium ppm ASTM D5185m >3 0 0 0 Nickel ppm ASTM D5185m >3 0 0 0 Nickel ppm ASTM D5185m >2 0 0 0 Auminum ppm ASTM D5185m >10 0 <1 | Sample Status | | | | ABNORMAL | ABNORMAL | ABNORMAL |
| Chromium ppm ASTM D5185m >3 0 0 0 Nickel ppm ASTM D5185m >3 0 0 0 Silver ppm ASTM D5185m >2 0 0 0 Auminum ppm ASTM D5185m >10 0 0 <1 | WEAR METALS | | method | limit/base | current | history1 | history2 |
| Nickel ppm ASTM D5185m >3 0 0 0 Titanium ppm ASTM D5185m >3 0 0 0 Silver ppm ASTM D5185m >10 0 0 0 Aluminum ppm ASTM D5185m >10 0 <1 | Iron | ppm | ASTM D5185m | >50 | 0 | <1 | <1 |
| Titanium ppm ASTM D5185m >3 0 0 0 Silver ppm ASTM D5185m >2 0 0 0 Aluminum ppm ASTM D5185m >10 0 <1 | Chromium | ppm | ASTM D5185m | >10 | 0 | 0 | 0 |
| Silver ppm ASTM D5185m >2 0 0 0 Aluminum ppm ASTM D5185m >10 0 <1 | Nickel | ppm | ASTM D5185m | >3 | 0 | 0 | 0 |
| Silver ppm ASTM D5185m >2 0 0 0 Aluminum ppm ASTM D5185m >10 0 <1 | Titanium | | ASTM D5185m | >3 | 0 | 0 | 0 |
| Lead ppm ASTM D5185m >10 0 <1 <1 Copper ppm ASTM D5185m >50 3 <1 | Silver | | ASTM D5185m | >2 | 0 | 0 | 0 |
| Lead ppm ASTM D5185m >10 0 <1 <1 Copper ppm ASTM D5185m >50 3 <1 | Aluminum | ppm | ASTM D5185m | >10 | 0 | 0 | <1 |
| Copper ppm ASTM D5185m >50 3 <1 2 Tin ppm ASTM D5185m >10 <1 | Lead | | | | | <1 | <1 |
| Tin ppm ASTM D5185m >10 <1 0 <1 Antimony ppm ASTM D5185m 0 0 0 0 Vanadium ppm ASTM D5185m 0 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 90 12 46 41 Molybdenum ppm ASTM D5185m 90 81 88 70 Calcium ppm ASTM D5185m 90 81 88 70 Calcium ppm ASTM D5185m 90 81 88 70 Calcium ppm ASTM D5185m 2 <1 3 2 Phosphorus ppm ASTM D5185m 21308 19941 17302 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >20 1 2< | Copper | | ASTM D5185m | >50 | | <1 | 2 |
| Antimony ppm ASTM D5185m Vanadium ppm ASTM D5185m 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 90 12 46 41 Molybdenum ppm ASTM D5185m 90 81 88 70 Galcium ppm ASTM D5185m 90 81 88 70 Calcium ppm ASTM D5185m 90 81 88 70 Calcium ppm ASTM D5185m 90 81 83 70 Calcium ppm ASTM D5185m 2 1 3 2 Phosphorus ppm ASTM D5185m 21308 19941 17302 CONTAMINANTS method limit/base current history1 history2 S | | | | | - | | |
| Vanadium ppm ASTM D5185m 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 0 0 0 Barium ppm ASTM D5185m 90 12 46 41 Molybdenum ppm ASTM D5185m 0 0 0 0 Magneseium ppm ASTM D5185m 90 81 88 70 Calcium ppm ASTM D5185m 2 <1 | | | | | | | |
| Cadmium pm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 0 0 0 Barium ppm ASTM D5185m 90 12 46 41 Molybdenum ppm ASTM D5185m 0 0 0 0 Marganese ppm ASTM D5185m 90 81 88 70 Calcium ppm ASTM D5185m 90 81 88 70 Calcium ppm ASTM D5185m 2 <1 | , | | | | 0 | 0 | 0 |
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| Molybdenum ppm ASTM D5185m 0 0 0 Manganese ppm ASTM D5185m <1 | | | | | | | |
| Manganese ppm ASTM D5185m <1 | | ppm | | 90 | | | |
| Magnesium ppm ASTM D5185m 90 81 88 70 Calcium ppm ASTM D5185m 2 <1 | | ppm | | | - | | |
| Calcium ppm ASTM D5185m 2 <1 | - | ppm | | | | | |
| Phosphorus ppm ASTM D5185m <1 0 <1 Zinc ppm ASTM D5185m 0 3 5 Sulfur ppm ASTM D5185m 21308 19941 17302 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 <1 <1 <1 Sodium ppm ASTM D5185m >25 <1 <1 <1 <1 Sodium ppm ASTM D5185m >20 1 2 1 <1 Water % ASTM D5185m >20 1 2 1 Water % ASTM D5185m >20 143 229.9 138.2 FLUID CLEANLINESS method limit/base current history1 history2 Particles >4µm ASTM D7647 >1300 3502 2951 5132 Particles >14µm ASTM D7647 >80 289 221 < | U | ppm | | | - | | |
| Zinc ppm ASTM D5185m 0 3 5 Sulfur ppm ASTM D5185m 21308 19941 17302 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 <1 | | ppm | ASTM D5185m | 2 | | | 2 |
| Sulfur ppm ASTM D5185m 21308 19941 17302 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 <1 <1 <1 Sodium ppm ASTM D5185m >25 <1 <1 <1 <1 Sodium ppm ASTM D5185m >20 1 2 1 Vater % ASTM D5185m >20 1 2 0.013 ppm Water ppm ASTM D6304 >0.05 0.014 0.022 0.013 Particles >4µm ASTM D647 >100 143 229.9 138.2 FLUID CLEANLINESS method limit/base current history1 history2 Particles >4µm ASTM D7647 >1300 3502 2951 5132 Particles >14µm ASTM D7647 >20 82 58 115 Particles >21µm ASTM D7647 >20 82 5 | | ppm | | | | | |
| CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 <1 | - | ppm | ASTM D5185m | | 0 | 3 | 5 |
| Silicon ppm ASTM D5185m >25 <1 <1 <1 Sodium ppm ASTM D5185m 18 6 9 Potassium ppm ASTM D5185m >20 1 2 1 Water % ASTM D6304 >0.05 0.014 0.022 0.013 ppm Water ppm ASTM D6304 >500 143 229.9 138.2 FLUID CLEANLINESS method limit/base current history1 history2 Particles >4µm ASTM D7647 17785 11719 20734 Particles >6µm ASTM D7647 >1300 3502 2951 5132 Particles >6µm ASTM D7647 >20 82 58 115 Particles >21µm ASTM D7647 >20 82 58 115 Particles >38µm ASTM D7647 >3 0 0 0 Oil Cleanliness ISO 4406 (c) >/17/13 21/19/15 21/19/15 22/20/16 | Sulfur | ppm | ASTM D5185m | | 21308 | 19941 | 17302 |
| Sodium ppm ASTM D5185m 18 6 9 Potassium ppm ASTM D5185m >20 1 2 1 Water % ASTM D6304 >0.05 0.014 0.022 0.013 ppm Water ppm ASTM D6304 >500 143 229.9 138.2 FLUID CLEANLINESS method limit/base current history1 history2 Particles >4µm ASTM D7647 17785 11719 20734 Particles >6µm ASTM D7647 >1300 3502 2951 5132 Particles >14µm ASTM D7647 >20 82 58 115 Particles >21µm ASTM D7647 >20 82 58 115 Particles >38µm ASTM D7647 >4 3 1 4 Particles >71µm ASTM D7647 >3 0 0 0 Oli Cleanliness ISO 4406 (c) >/17/13 21/19/15 21/19/15 22/20/16 FLUID D | CONTAMINANTS | | method | limit/base | current | history1 | history2 |
| Potassium ppm ASTM D5185m >20 1 2 1 Water % ASTM D6304 >0.05 0.014 0.022 0.013 ppm Water ppm ASTM D6304 >500 143 229.9 138.2 FLUID CLEANLINESS method limit/base current history1 history2 Particles >4µm ASTM D7647 17785 11719 20734 Particles >6µm ASTM D7647 >1300 3502 2951 5132 Particles >6µm ASTM D7647 >20 82 58 115 Particles >14µm ASTM D7647 >20 82 58 115 Particles >21µm ASTM D7647 >3 0 0 0 Oil Cleanliness ISO 4406 (c) >/17/13 21/19/15 21/19/15 22/20/16 FLUID DEGRADATION method limit/base current history1 history2 | Silicon | ppm | ASTM D5185m | >25 | <1 | <1 | <1 |
| Water % ASTM D6304 >0.05 0.014 0.022 0.013 ppm Water ppm ASTM D6304 >500 143 229.9 138.2 FLUID CLEANLINESS method limit/base current history1 history2 Particles >4µm ASTM D7647 17785 11719 20734 Particles >6µm ASTM D7647 >1300 3502 2951 5132 Particles >6µm ASTM D7647 >80 289 221 451 Particles >21µm ASTM D7647 >20 82 58 115 Particles >38µm ASTM D7647 >4 3 1 4 Particles >71µm ASTM D7647 >3 0 0 0 Oil Cleanliness ISO 4406 (c) >/17/13 21/19/15 21/19/15 22/20/16 | Sodium | ppm | ASTM D5185m | | 18 | 6 | 9 |
| ppm Water ppm ASTM D6304 >500 143 229.9 138.2 FLUID CLEANLINESS method limit/base current history1 history2 Particles >4µm ASTM D7647 17785 11719 20734 Particles >6µm ASTM D7647 >1300 3502 2951 5132 Particles >14µm ASTM D7647 >80 289 221 451 Particles >21µm ASTM D7647 >20 82 58 115 Particles >38µm ASTM D7647 >4 3 1 4 Particles >71µm ASTM D7647 >4 3 0 0 0 Oil Cleanliness ISO 4406 (c) >/17/13 21/19/15 21/19/15 22/20/16 | Potassium | ppm | ASTM D5185m | >20 | 1 | 2 | 1 |
| ppm Water ppm ASTM D6304 >500 143 229.9 138.2 FLUID CLEANLINESS method limit/base current history1 history2 Particles >4µm ASTM D7647 17785 11719 20734 Particles >6µm ASTM D7647 >1300 3502 2951 5132 Particles >14µm ASTM D7647 >80 289 221 451 Particles >21µm ASTM D7647 >20 82 58 115 Particles >38µm ASTM D7647 >4 3 1 4 Particles >71µm ASTM D7647 >3 0 0 0 Oil Cleanliness ISO 4406 (c) >/17/13 21/19/15 21/19/15 22/20/16 | Water | % | ASTM D6304 | >0.05 | 0.014 | 0.022 | 0.013 |
| Particles >4µm ASTM D7647 17785 11719 20734 Particles >6µm ASTM D7647 >1300 3502 2951 5132 Particles >14µm ASTM D7647 >80 289 221 451 Particles >21µm ASTM D7647 >20 82 58 115 Particles >38µm ASTM D7647 >4 3 1 4 Particles >71µm ASTM D7647 >3 0 0 0 Oil Cleanliness ISO 4406 (c) >/17/13 21/19/15 21/19/15 22/20/16 | ppm Water | | | | 143 | 229.9 | |
| Particles >6µm ASTM D7647 >1300 ▲ 3502 ▲ 2951 ▲ 5132 Particles >14µm ASTM D7647 >80 ▲ 289 ▲ 221 ▲ 451 Particles >21µm ASTM D7647 >20 ▲ 82 ▲ 58 ▲ 115 Particles >38µm ASTM D7647 >4 3 1 4 Particles >38µm ASTM D7647 >4 3 1 4 Particles >71µm ASTM D7647 >3 0 0 0 Oil Cleanliness ISO 4406 (c) >/17/13 ▲ 21/19/15 ▲ 21/19/15 ▲ 22/20/16 FLUID DEGRADATION method limit/base current history1 history2 | FLUID CLEANLIN | ESS | method | limit/base | current | history1 | history2 |
| Particles >6µm ASTM D7647 >1300 ▲ 3502 ▲ 2951 ▲ 5132 Particles >14µm ASTM D7647 >80 ▲ 289 ▲ 221 ▲ 451 Particles >21µm ASTM D7647 >20 ▲ 82 ▲ 58 ▲ 115 Particles >38µm ASTM D7647 >4 3 1 4 Particles >38µm ASTM D7647 >4 3 1 4 Particles >71µm ASTM D7647 >3 0 0 0 Oil Cleanliness ISO 4406 (c) >/17/13 ▲ 21/19/15 ▲ 21/19/15 ▲ 22/20/16 | Particles >4µm | | ASTM D7647 | | 17785 | 11719 | 20734 |
| Particles >14µm ASTM D7647 >80 ▲ 289 ▲ 221 ▲ 451 Particles >21µm ASTM D7647 >20 ▲ 82 ▲ 58 ▲ 115 Particles >38µm ASTM D7647 >4 3 1 4 Particles >71µm ASTM D7647 >3 0 0 0 Oil Cleanliness ISO 4406 (c) >/17/13 ▲ 21/19/15 ▲ 21/19/15 ▲ 22/20/16 FLUID DEGRADATION method limit/base current history1 history2 | | | | >1300 | A 3502 | | |
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| Particles >71µm ASTM D7647 >3 0 0 0 Oil Cleanliness ISO 4406 (c) >/17/13 ▲ 21/19/15 ▲ 21/19/15 ▲ 22/20/16 FLUID DEGRADATION method limit/base current history1 history2 | | | | | | | |
| Oil Cleanliness ISO 4406 (c) >/17/13 ▲ 21/19/15 ▲ 21/19/15 ▲ 22/20/16 FLUID DEGRADATION method limit/base current history1 history2 | • | | | | - | | |
| | | | | | | | |
| | | | method | limit/base | current | history1 | history? |
| Acid Number (AN) mg KOH/g ASTM D8045 0.4 0.37 0.39 0.41 | Acid Number (AN) | mg KOH/g | | | 0.37 | 0.39 | 0.41 |

Report Id: UNIAURCO [WUSCAR] 06185012 (Generated: 05/22/2024 15:21:14) Rev: 1

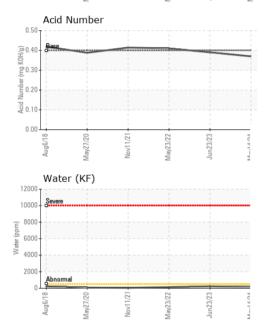
Contact/Location: Service Manager - UNIAURCO

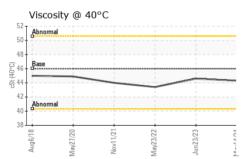


OIL ANALYSIS REPORT



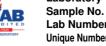


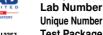






| à | Laboratory |
|--------------------|--------------|
| ANAB | Sample No. |
| ACCREDITED | Lab Numbe |
| TESTING LABORATORY | Unique Numbe |
| Certificate 2367 | Test Packag |





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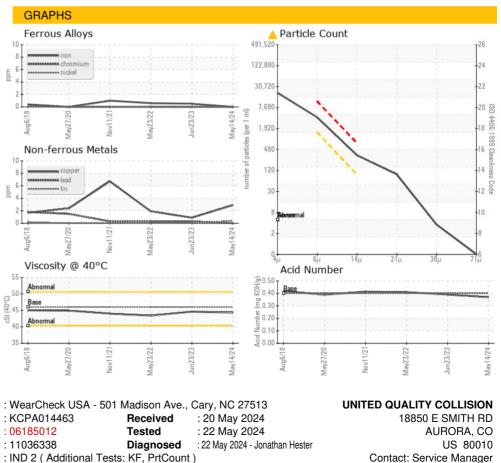
- Test Package : IND 2 (Additional Tests: KF, PrtCount) To discuss this sample report, contact Customer Service at 1-800-237-1369.
- * Denotes test methods that are outside of the ISO 17025 scope of accreditation.

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

Contact/Location: Service Manager - UNIAURCO Page 2 of 2

| VISUAL | | method | limit/base | current | history1 | history2 |
|------------------|--------|-----------|------------|---------|----------|----------|
| White Metal | scalar | *Visual | NONE | NONE | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | NONE | NONE | NONE |
| Precipitate | scalar | *Visual | NONE | NONE | NONE | NONE |
| 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 | >0.05 | NEG | NEG | NEG |
| Free Water | scalar | *Visual | | NEG | NEG | NEG |
| FLUID PROPERT | IES | method | limit/base | current | history1 | history2 |
| Visc @ 40°C | cSt | ASTM D445 | 46 | 44.3 | 44.6 | 43.4 |
| SAMPLE IMAGES | 5 | method | limit/base | current | history1 | history2 |
| Color | | | | • | | |
| | | | | | | |

Bottom



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