



Southwest Spectro-Chem Labs

FILTER ANALYSIS

What routine oil analysis may miss between sample intervals, will be logged in the filter. Utilizing filter analysis can help identify the impact of an "upset", cause of high differential pressure, or just the overall effectiveness of cleanliness efforts.




BENEFITS

- Qualify particle types in your lube system
- Identify severe wear not visible in routine oil analysis
- Confirm contaminant conditions impacting filter function
- Use the evidence to adjust filter service intervals
- Get the analyst judgement and comments on overall condition

* The filter disposal fee is included in the cost of the analysis.

* Turnaround time is 4-5 business days after receipt.



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OVERALL WEAR JUDGEMENT
3-Alert

Filter & Analytical Ferrograph Report

| SAMPLE INFORMATION | | | |
|--------------------|-------------------|---------------|----------|
| CUSTOMER #: | 123456 | LAB SAMPLE #: | Z0001 |
| CUSTOMER: | SWSC LABS | OIL USED: | UNKNOWN |
| LOCATION: | SOUTH HOUSTON, TX | TIME ON OIL: | N/A |
| UNIT: | | SAMPLE DATE: | 01/15/19 |
| DESCRIPTION: | OIL FILTER | REPORT DATE: | 01/22/19 |
| SERIAL #: | | ANALYST: | PL |
| EQUIP NO.: | 0384 | | |


PARTICLE ANALYSIS
1 - Normal; 2 - Watch; 3 - Alert; 4 - Critical

| FERROUS METAL WEAR | SEVERITY |
|------------------------------|----------|
| RUBBING | 2 |
| SEVERE WEAR | 2 |
| CUTTING | |
| LAMINAR PARTICLES | 1 |
| SPHERES | |
| CHUNKS | 1 |
| RED OXIDES | 2 |
| DARK OXIDES | 2 |
| ABRASION WEAR | |
| ADHESION WEAR | 1 |
| SLIDING | |
| COPPER/COPPER ALLOY WEAR | SEVERITY |
| RUBBING | 1 |
| SEVERE WEAR | 1 |
| CUTTING | 3 |
| LAMINAR PARTICLES | |
| SPHERES | |
| FATIGUE CHUNKS | 1 |
| ABRASION WEAR | |
| SLIDING | |
| OTHER NON-MAGNETIC PARTICLES | SEVERITY |
| INORGANIC/BIREFRINGENT | 1 |
| WHITE METAL | |
| MOLYBDENUM DISULFIDE | |
| OTHER NON-METALLIC PARTICLES | SEVERITY |
| ORGANIC/BIREFRINGENT | 2 |
| SILICEOUS | 2 |
| FRICITION POLYMER | 2 |
| FIBERS | |
| LACQUER | 3 |
| AMORPHOUS | |
| CARBONACEOUS | |

METAL CONTENT, ppm by Emission Spectroscopy

NOTE: Particles greater than 10-microns will probably not be measured in the emission spectrometry.

| WEAR | | | |
|---------------------|------|----------|-------|
| Iron | 53 | Tin | 2 |
| Copper | 14 | Nickel | 1 |
| Aluminum | 2 | Titanium | 0 |
| Chromium | 3 | Silver | 0 |
| Lead | 0 | Vanadium | 0 |
| ADDITIVE | | | |
| Magnesium | 2 | | |
| Calcium | 108 | | |
| Barium | 0 | | |
| Phosphorous | 719 | | |
| Zinc | 9 | | |
| MULTI-SOURCE | | | |
| Molybdenum | 0 | | |
| Antimony | 0 | | |
| Boron | 0 | | |
| CONTAMINANT | | | |
| Silicon | 40 | | |
| Sodium | 6 | | |
| Potassium | 0 | | |
| PHYSICAL PROPERTIES | | | |
| KF Water, ppm | 202 | FDRS | 122.5 |
| TAN, mg KOH/g | 0.54 | FDRL | 161.3 |



ROGRAPH B @ 400 X
IS EVIDENT. THE BRIGHT
DT APPEAR MAGNETIC.

media is dark and has a "burnt"
wear (metal to metal contact)
temperature/friction. The most
ly reflective and "white"; upon
tels a nalysis does not indicated

all condition is ALERT.

ese analyses, opinions or interpretations are based on material supplied by the client to whom, and for whose exclusive and confidential use this
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