

LABORATORY ANALYSIS



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Department **NC**
Equipment No. **2037 SPINDLE (00069)**
System **Oil**
Oil Type **ENGINEERED LUBRICANTS ENSPIN NO.6-PF (--- GAL)**

DIAGNOSIS

Particle counts are elevated in all micron ranges. I recommend a filter service at this time and a partial purge to remove the smaller particles. After equipment is idle for 8 hours, drain 25% capacity of the component. Top off with new oil. Copper (Cu) ppm levels are abnormal. There is a high amount of silt (particulates < 14 microns in size) present in the oil. The system cleanliness code is much higher than the acceptable limit for the target ISO 4406 cleanliness code. The oil is no longer serviceable as a result of the abnormal and/or severe wear.

SAMPLE INFORMATION

Lab Number	New	2305-00769	2301-00183	2209-00541
Date of Sample	(Typical)	19 May 2023	04 Jan 2023	16 Sep 2022
Oil Added		UNK	UNK	UNK
Last Drain Date		--	--	--
Last Filter Service		--	--	--
Sample Point		---	---	---
Sample Status		SEVERE	ABNORMAL	ABNORMAL

VISCOSITY @ 100F OR 40C (ASTM D-445)

SSU Vis. @ 100F	SSU	65.0	64.8	65.1
cSt Vis. @ 40C	cSt	10	10.86	10.93

COLOR (BASED ON ASTM D1500 STANDARDS)

Color	Scale 0-8	0.5	3.0	3.0	3.0

PARTICLE COUNT (PER 1ML)

ISO CODE	ISO 4406(c)	>16/14/12	20/18/13	17/15/12	18/16/12
4 Micron & Larger	particles/ml	>640	▲ 7,368	● 842	▲ 1,769
6 Micron & Larger	particles/ml	>160	▲ 2,160	● 274	▲ 442
14 Micron & Larger	particles/ml	>40	● 66	■ 24	■ 36
21 Micron & Larger	particles/ml	>10	13	■ 6	11
38 Micron & Larger	particles/ml	>3	■ 1	■ 0	■ 1
70 Micron & Larger	particles/ml	>3	■ 0	■ 0	■ 0

ICP - OILS (REPORTED IN PARTS PER MILLION)

Aluminum (Al)	ppm	<5	<5	<5	
Antimony (Sb)	ppm	<5	<5	<5	
Cadmium (Cd)	ppm	<5	<5	<5	
Chromium (Cr)	ppm	<5	<5	<5	
Cobalt (Co)	ppm	<5	<5	<5	
Copper (Cu)	ppm	▲ 19	▲ 22	▲ 22	
Iron (Fe)	ppm	<5	<5	<5	
Lead (Pb)	ppm	9	9	8	
Manganese (Mn)	ppm	<5	<5	<5	
Molybdenum(Mo)	ppm	<5	<5	<5	
Nickel (Ni)	ppm	<5	<5	<5	
Silver (Ag)	ppm	<5	<5	<5	
Tin (Sn)	ppm	<5	<5	<5	
Titanium (Ti)	ppm	<5	<5	<5	
Vanadium (V)	ppm	<5	<5	<5	
Barium (Ba)	ppm	<5	<5	<5	
Boron (B)	ppm	<5	<5	<5	
Calcium (Ca)	ppm	<5	<5	<5	
Magnesium (Mg)	ppm	<5	<5	<5	
Phosphorus(P)	ppm	182	210	209	
Silicon (Si)	ppm	<5	<5	<5	
Zinc (Zn)	ppm	22	24	22	
Sulfur (S)	ppm	715	987	865	899

Customer Id: BACSTL
Sample No.: EN23050769
Lab Number: 23050769
Test Package: TEST



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To discuss the diagnosis or test data:

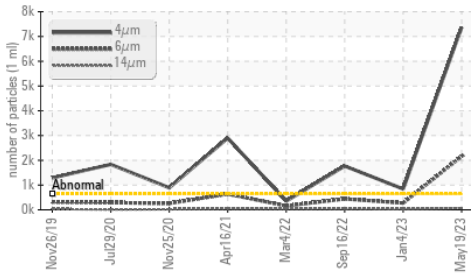
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To change component or sample information:

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OIL ANALYSIS REPORT

▲ Particle Trend



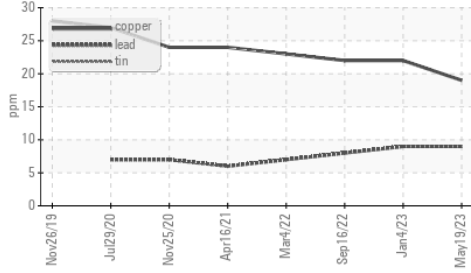
DR FERROGRAPHY READINGS

L		■ 1.6	■ 1.2	■ 2.9
S		■ 0.3	■ 0.6	■ 0.2
WPC	DL + DS	■ 1.9	■ 1.8	■ 3.1

CONTAMINATION

Water	NEG	NEG	NEG
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▲ Non-ferrous Metals



Viscosity @ 40°C

