

# LABORATORY ANALYSIS



11525 Rock Island Court, St. Louis, MO 63043  
Tel: 1-800-876-0008 info@englube.com

**WOODWARD CORPORATION**  
6300 WEST HOWARD STREET  
NILES, IL  
United States 60714  
Contact: Daniel Aviles  
daniel.aviles@woodward.com  
T:  
F:

Department **NPI OILS**  
Equipment No. **1933 CNC MILLING MACHINE (00014)**  
System **Hydraulic System**  
Oil Type **ENGINEERED LUBRICANTS ENLUBE 15-AW (--- GAL)**

## Diagnosis

All conditions are GREEN. Continue use of oil and filter element at this time. All component wear rates are normal. The system cleanliness is acceptable for your target ISO 4406 cleanliness code. There is no indication of any contamination in the oil. The system and fluid cleanliness is acceptable. The condition of the oil is acceptable for the time in service.

## Sample Information

Lab Number	New	2403-00523	2311-00539	2308-00172
Date of Sample	(Typical)	14 Mar 2024	16 Nov 2023	03 Aug 2023
Oil Added		UNK	UNK	UNK
Last Drain Date		--	--	--
Last Filter Service		--	--	--
Sample Point		---	---	---
Sample Status		<b>NORMAL</b>	NORMAL	NORMAL

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

SSU Vis. @ 100F	SSU	163.9	163.1	163.1
cSt Vis. @ 40C	cSt	32.0	31.51	31.52

## COLOR (BASED ON ASTM D1500 STANDARDS)

Color	Scale 0-8	1.0	1.0	1.0

## PARTICLE COUNT (PER 1ML)

ISO CODE	ISO 4406(c)	>19/18/14	15/13/9	17/15/11	14/13/10
4 Micron & Larger	particles/ml	>5000	267	990	142
6 Micron & Larger	particles/ml	>2500	57	176	54
14 Micron & Larger	particles/ml	>160	3	14	8
21 Micron & Larger	particles/ml	>40	1	4	2
38 Micron & Larger	particles/ml	>10	0	1	0
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	<5	<5	<5
Iron (Fe)	ppm	<5	<5	<5
Lead (Pb)	ppm	<5	<5	<5
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	95	90	107
Magnesium (Mg)	ppm	<5	<5	<5
Phosphorus(P)	ppm	531	456	509
Silicon (Si)	ppm	<5	<5	<5
Zinc (Zn)	ppm	668	544	630
Sulfur (S)	ppm	1,550	1,240	1,560

Customer Id: ENC0658001  
Sample No.: EN24030523  
Lab Number: 24030523  
Test Package: TEST



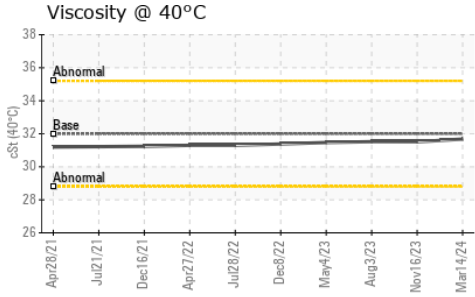
To manage this report scan the QR code

To discuss the diagnosis or test data:

Beau Vuagniaux +1  
[bvuagniaux@englube.com](mailto:bvuagniaux@englube.com)

To change component or sample information:  
Tracy Weaks +1 (314)872-9540  
[tweaks@englube.com](mailto:tweaks@englube.com)

# OIL ANALYSIS REPORT



## DR FERROGRAPHY READINGS

L		■ 0.8	■ 0.8	■ 3.5
S		■ 0.5	■ 0.3	■ 1.4
WPC	DL + DS	■ 1.3	■ 1.1	■ 4.9

## Contamination

Water	>0.05	<b>NEG</b>	NEG	NEG
-------	-------	------------	-----	-----