



OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Machine Id
ENGEL ENGEL 450/02
 Component
Hydraulic System
 Fluid
SHELL TELLUS S2 MX 46 (--- LTR)

RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		TLC0001713	---	---
Sample Date		Client Info		20 May 2024	---	---
Machine Age	hrs	Client Info		0	---	---
Oil Age	hrs	Client Info		0	---	---
Filter Age	hrs	Client Info		0	---	---
Oil Changed		Client Info		N/A	---	---
Filter Changed		Client Info		N/A	---	---
Sample Status				NORMAL	---	---

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>20	1	---	---
Chromium	ppm	ASTM D5185m	>20	4	---	---
Nickel	ppm	ASTM D5185m	>20	0	---	---
Titanium	ppm	ASTM D5185m		<1	---	---
Silver	ppm	ASTM D5185m		<1	---	---
Aluminum	ppm	ASTM D5185m	>20	0	---	---
Lead	ppm	ASTM D5185m	>20	<1	---	---
Copper	ppm	ASTM D5185m	>20	2	---	---
Tin	ppm	ASTM D5185m	>20	0	---	---
Vanadium	ppm	ASTM D5185m		<1	---	---
White Metal	scalar	*Visual	NONE	NONE	---	---
Yellow Metal	scalar	*Visual	NONE	NONE	---	---

CONTAMINATION

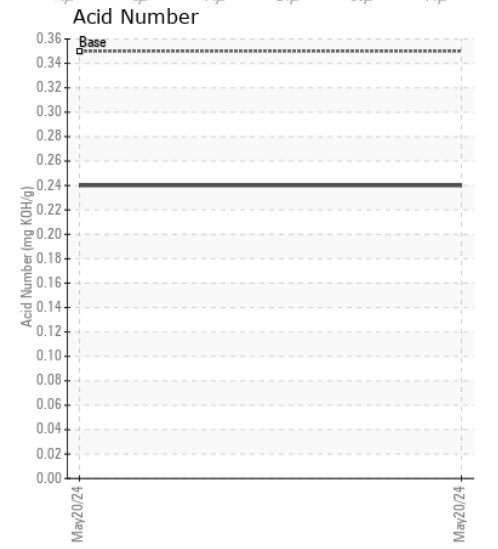
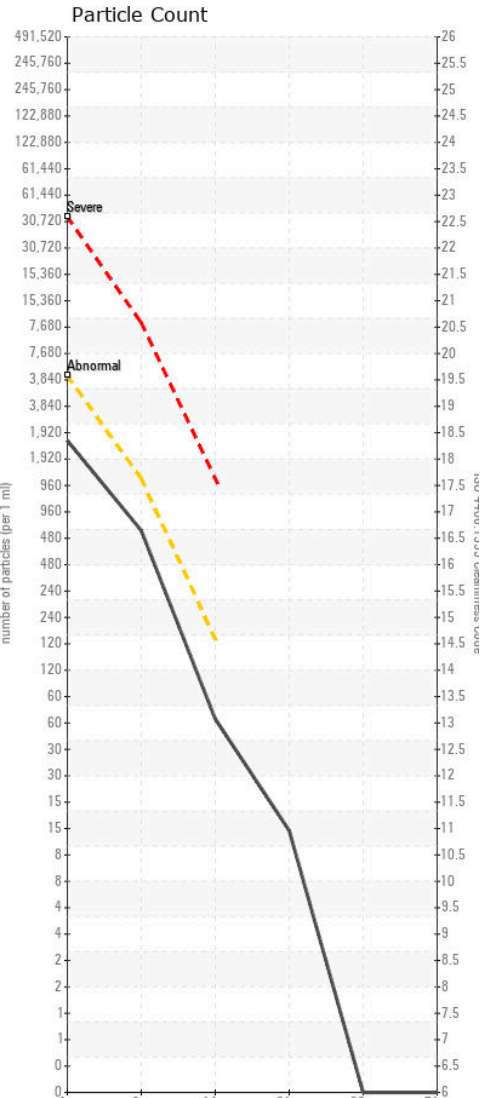
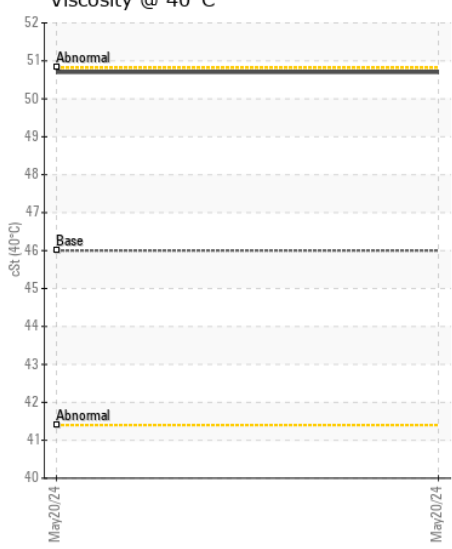
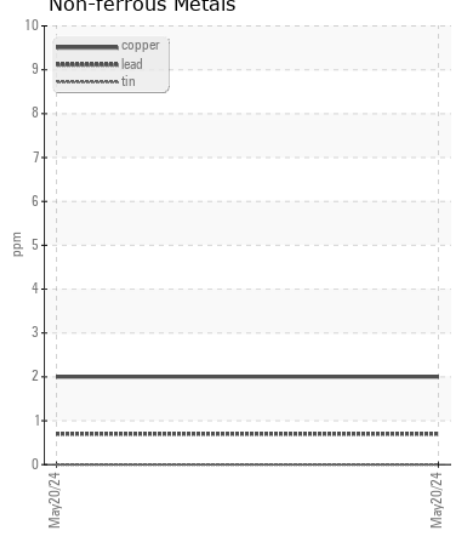
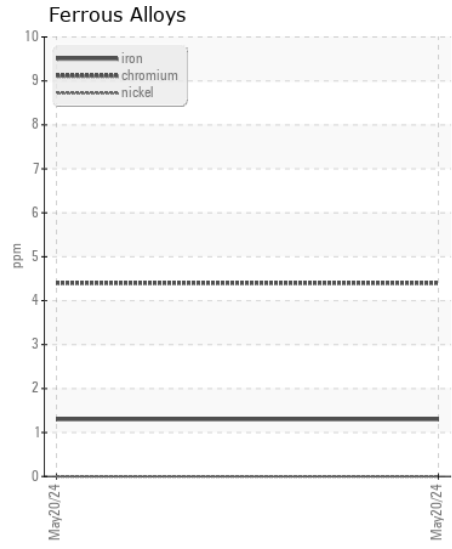
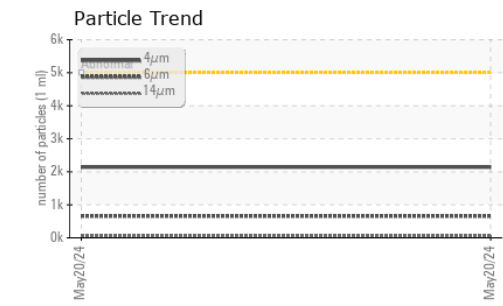
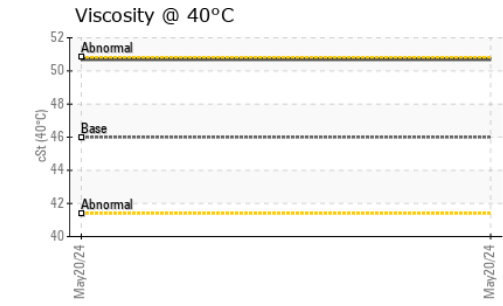
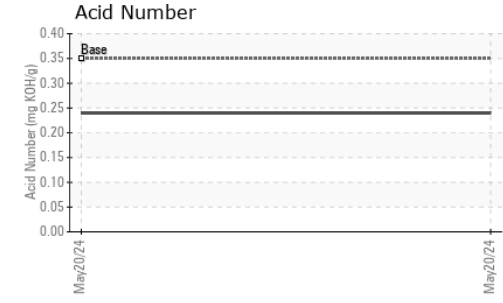
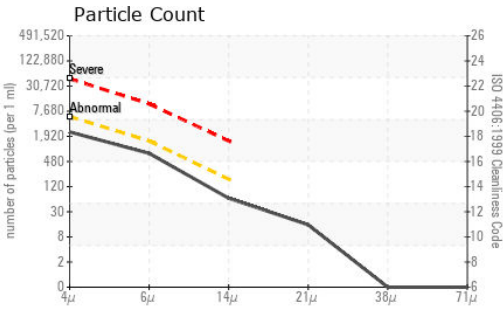
The amount and size of particulates present in the system are acceptable. There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>15	1	---	---
Potassium	ppm	ASTM D5185m	>20	0	---	---
Water	%	ASTM D6304	>0.05	NEG	---	---
Particles >4µm		ASTM D7647	>5000	2139	---	---
Particles >6µm		ASTM D7647	>1300	659	---	---
Particles >14µm		ASTM D7647	>160	56	---	---
Particles >21µm		ASTM D7647	>40	13	---	---
Particles >38µm		ASTM D7647	>10	0	---	---
Particles >71µm		ASTM D7647	>3	0	---	---
Oil Cleanliness		ISO 4406 (c)	>19/17/14	18/17/13	---	---
Silt	scalar	*Visual	NONE	NONE	---	---
Debris	scalar	*Visual	NONE	NONE	---	---
Sand/Dirt	scalar	*Visual	NONE	NONE	---	---
Appearance	scalar	*Visual	NORML	NORML	---	---
Odor	scalar	*Visual	NORML	NORML	---	---
Emulsified Water	scalar	*Visual	>0.05	NEG	---	---

FLUID CONDITION

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

Sodium	ppm	ASTM D5185m		<1	---	---
Boron	ppm	ASTM D5185m	0	0	---	---
Barium	ppm	ASTM D5185m	0	0	---	---
Molybdenum	ppm	ASTM D5185m	0	<1	---	---
Manganese	ppm	ASTM D5185m	0	<1	---	---
Magnesium	ppm	ASTM D5185m	70	5	---	---
Calcium	ppm	ASTM D5185m	10	46	---	---
Phosphorus	ppm	ASTM D5185m	300	263	---	---
Zinc	ppm	ASTM D5185m	325	297	---	---
Sulfur	ppm	ASTM D5185m	665	5451	---	---
Acid Number (AN)	mg KOH/g	ASTM D8045	0.35	0.24	---	---
Visc @ 40°C	cSt	ASTM D445	46.0	50.7	---	---



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : TLC0001713 **Received** : 21 May 2024
Lab Number : 06186680 **Tested** : 23 May 2024
Unique Number : 11043432 **Diagnosed** : 23 May 2024 - Jonathan Hester
Test Package : PLANT

WIRTHWEIN
 800 WOODSIDE AVE
 FOUNTAIN INN, SC
 US 29644
 Contact: Service Manager

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)