



OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	ABNORMAL
FLUID CONDITION	NORMAL

Area
RIG 4
 Machine Id
WHITE STAR 2450 R4-P-02G NKL
 Component
Gearbox
 Fluid
GEAR OIL ISO 460 (--- GAL)

RECOMMENDATION

We recommend you service the filters on this component if applicable. Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		KL0014058	KL0013129	KL0012978
Sample Date		Client Info		12 Dec 2023	03 Nov 2023	13 Sep 2023
Machine Age	days	Client Info		45272	45233	45180
Oil Age	days	Client Info		0	0	0
Filter Age	days	Client Info		0	0	0
Oil Changed		Client Info		N/A	N/A	N/A
Filter Changed		Client Info		N/A	N/A	N/A
Sample Status				ABNORMAL	ABNORMAL	ABNORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>200	74	50	▲ 356
Chromium	ppm	ASTM D5185m	>10	0	<1	4
Nickel	ppm	ASTM D5185m	>10	0	<1	4
Titanium	ppm	ASTM D5185m		0	0	<1
Silver	ppm	ASTM D5185m		0	0	0
Aluminum	ppm	ASTM D5185m	>25	<1	1	▲ 9
Lead	ppm	ASTM D5185m	>50	0	0	<1
Copper	ppm	ASTM D5185m	>200	8	4	26
Tin	ppm	ASTM D5185m	>10	0	<1	<1
Vanadium	ppm	ASTM D5185m		0	0	0
White Metal	scalar	*Visual	NONE	NONE	NONE	LIGHT
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

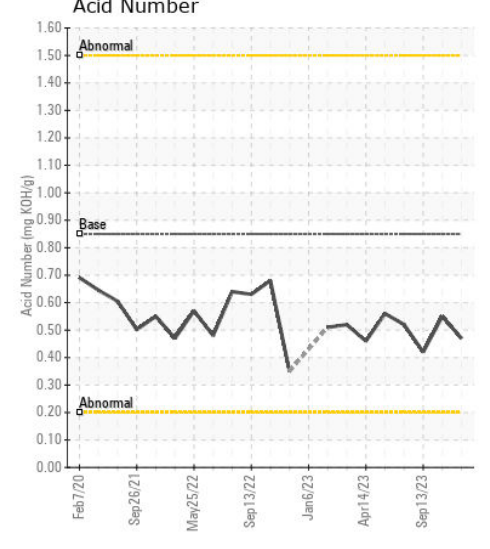
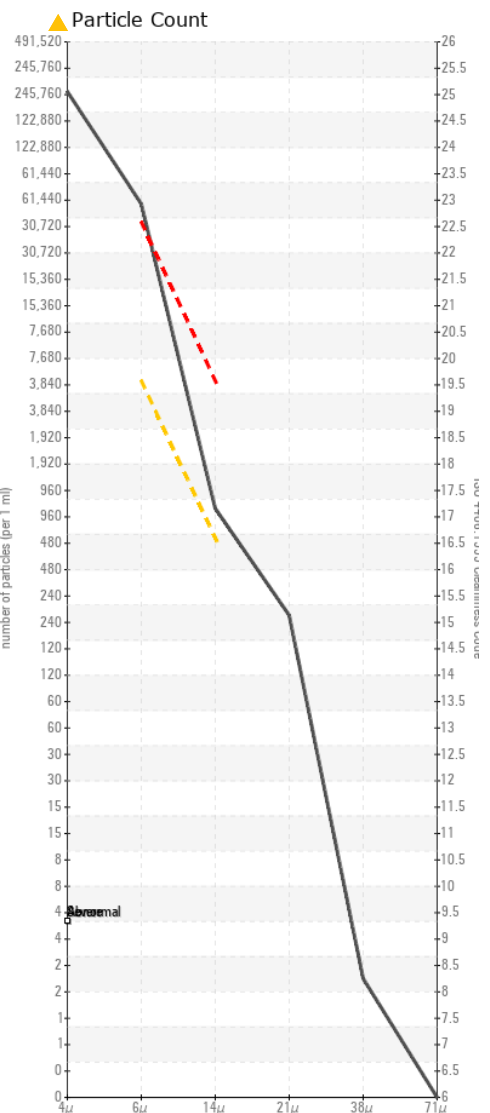
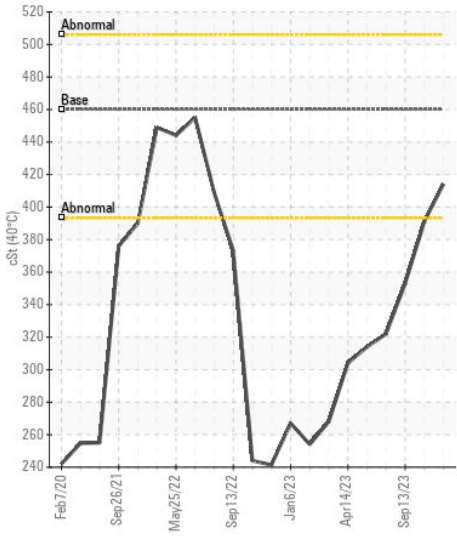
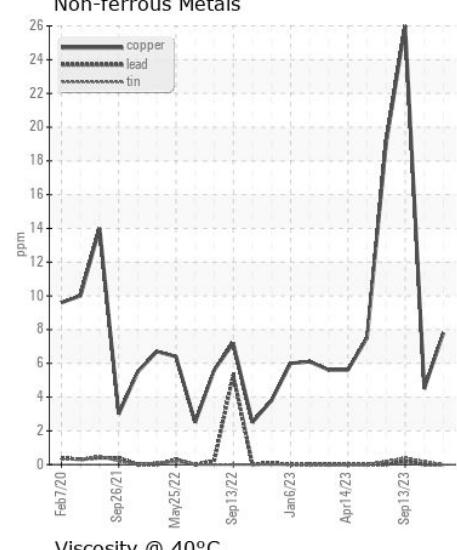
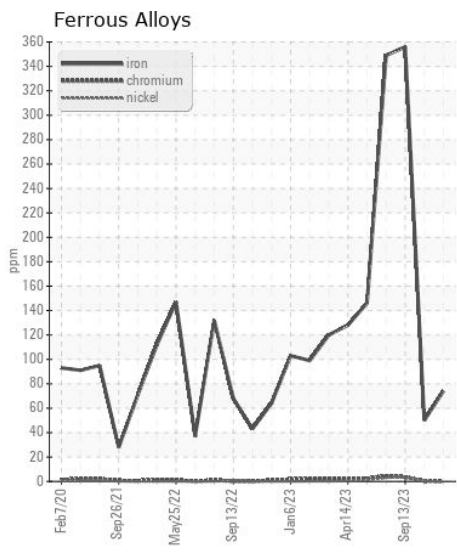
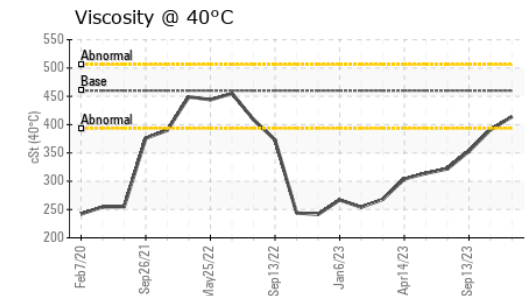
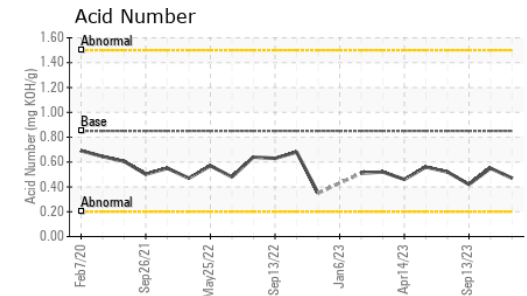
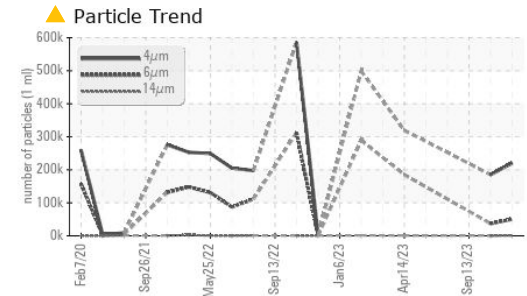
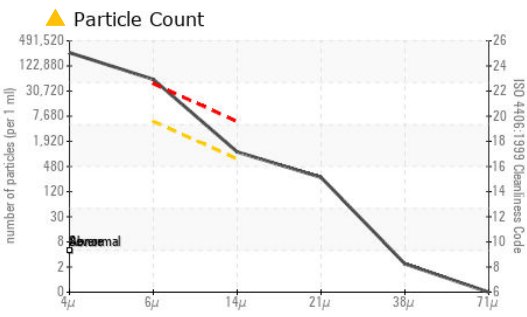
There is a high amount of particulates present in the oil.

Silicon	ppm	ASTM D5185m	>50	15	9	▲ 60
Potassium	ppm	ASTM D5185m	>20	2	<1	10
Water		WC Method	>0.2	NEG	NEG	NEG
Particles >4µm		ASTM D7647		219964	185125	---
Particles >6µm		ASTM D7647	>5000	▲ 50571	▲ 37051	---
Particles >14µm		ASTM D7647	>640	▲ 940	206	---
Particles >21µm		ASTM D7647	>160	▲ 232	37	---
Particles >38µm		ASTM D7647	>40	2	1	---
Particles >71µm		ASTM D7647	>10	0	0	---
Oil Cleanliness		ISO 4406 (c)	>19/16	▲ 23/17	▲ 22/15	---
Silt	scalar	*Visual	NONE	NONE	NONE	▲ MODER
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	>0.2	NEG	NEG	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		68	27	207
Boron	ppm	ASTM D5185m	50	32	42	46
Barium	ppm	ASTM D5185m	15	4	2	17
Molybdenum	ppm	ASTM D5185m	15	10	14	99
Manganese	ppm	ASTM D5185m		0	<1	3
Magnesium	ppm	ASTM D5185m	50	18	47	56
Calcium	ppm	ASTM D5185m	50	54	111	170
Phosphorus	ppm	ASTM D5185m	350	263	286	272
Zinc	ppm	ASTM D5185m	100	15	53	47
Sulfur	ppm	ASTM D5185m	12500	7739	7670	6532
Acid Number (AN)	mg KOH/g	ASTM D8045	0.85	0.47	0.55	0.42
Visc @ 40°C	cSt	ASTM D445	460	414	391	▲ 353



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : KL0014058 **Received** : 08 Jan 2024
Lab Number : 06054765 **Diagnosed** : 10 Jan 2024
Unique Number : 10820714 **Diagnostician** : Don Baldrige
Test Package : MOB 2 (Additional Tests: PrtCount)

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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)