



# OIL ANALYSIS REPORT

WEAR	<b>ABNORMAL</b>
CONTAMINATION	<b>ABNORMAL</b>
FLUID CONDITION	<b>NORMAL</b>

Area  
**RIG 3**  
Machine Id  
**WHITE STAR 2450 R3-P-02G-NKL**  
Component  
**Gearbox**  
Fluid  
**Gearbox Oil (--- GAL)**

## RECOMMENDATION

We advise that you check all areas where dirt can enter the system. Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>KL0013152</b>	KL0013120	KL0012974
Sample Date		Client Info		<b>28 Dec 2023</b>	27 Oct 2023	25 Sep 2023
Machine Age	days	Client Info		<b>45288</b>	45225	45192
Oil Age	days	Client Info		<b>0</b>	0	0
Filter Age	days	Client Info		<b>0</b>	0	0
Oil Changed		Client Info		<b>N/A</b>	N/A	N/A
Filter Changed		Client Info		<b>N/A</b>	N/A	N/A
Sample Status				<b>ABNORMAL</b>	ABNORMAL	SEVERE

## WEAR

Gear wear is indicated.

Iron	ppm	ASTM D5185m	>200	<b>▲ 339</b>	▲ 345	42
Chromium	ppm	ASTM D5185m	>10	<b>2</b>	2	0
Nickel	ppm	ASTM D5185m	>10	<b>2</b>	3	<1
Titanium	ppm	ASTM D5185m		<b>0</b>	<1	<1
Silver	ppm	ASTM D5185m		<b>0</b>	0	<1
Aluminum	ppm	ASTM D5185m	>25	<b>▲ 14</b>	▲ 16	1
Lead	ppm	ASTM D5185m	>50	<b>0</b>	0	<1
Copper	ppm	ASTM D5185m	>200	<b>17</b>	19	6
Tin	ppm	ASTM D5185m	>10	<b>0</b>	0	<1
Vanadium	ppm	ASTM D5185m		<b>0</b>	0	0
White Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE

## CONTAMINATION

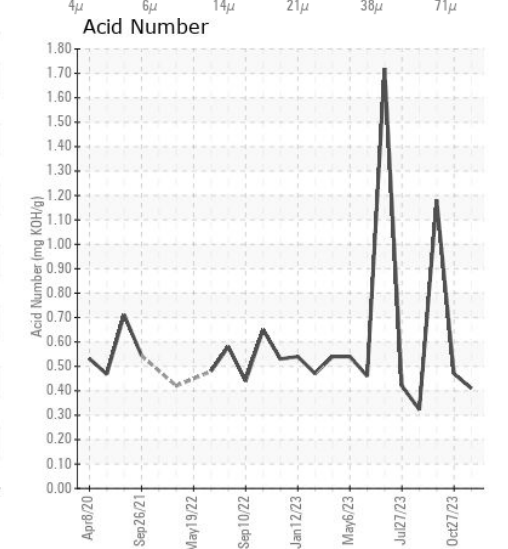
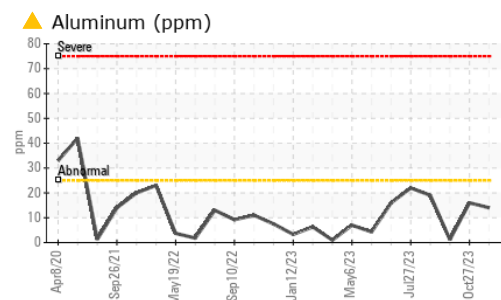
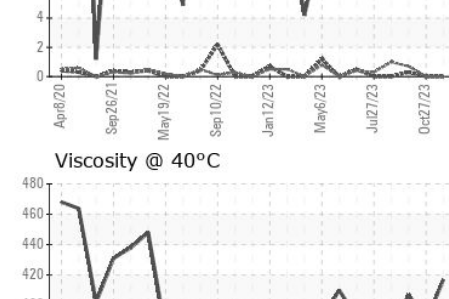
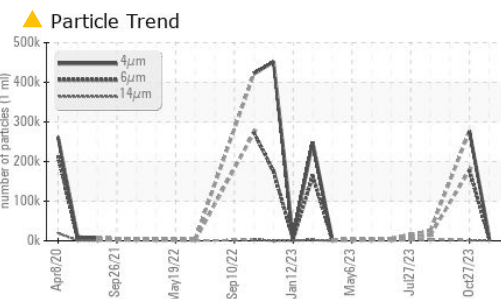
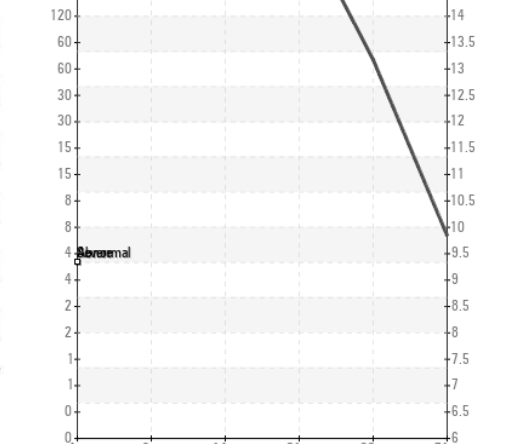
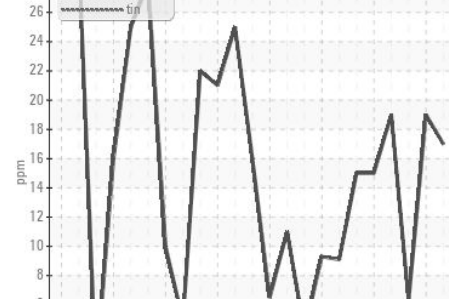
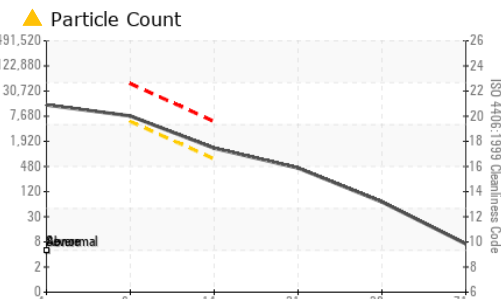
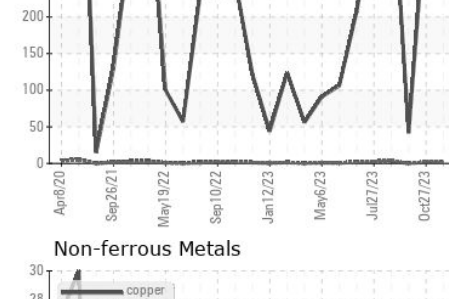
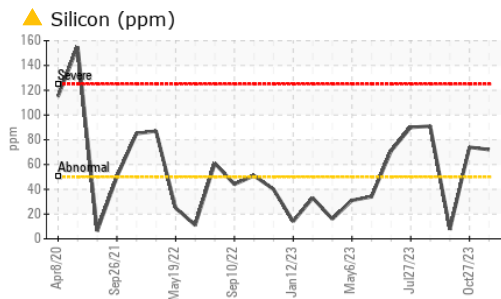
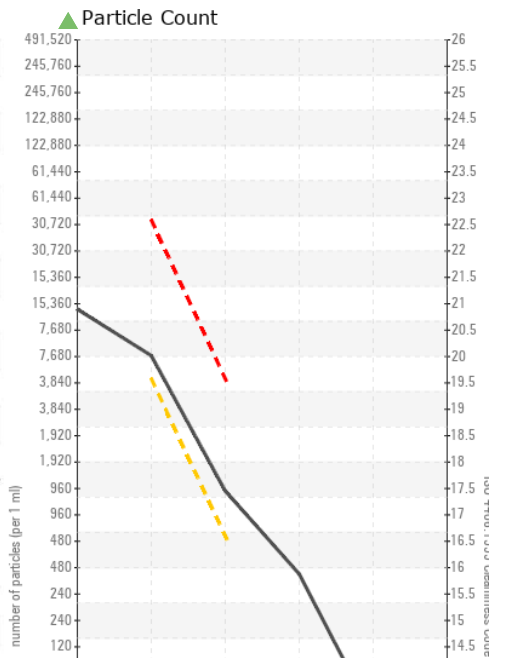
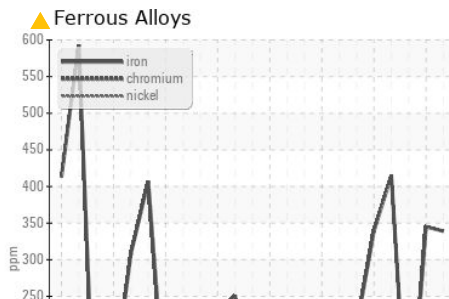
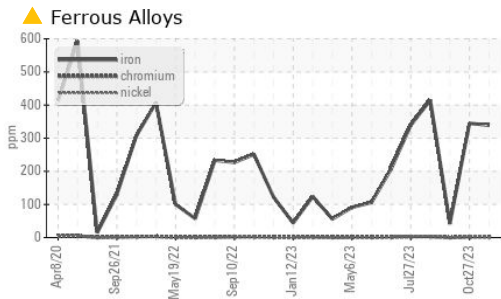
There is a moderate amount of particulates present in the oil. Elemental levels of silicon (Si) and aluminum (Al) indicate alumina-silicate (coarse dirt) ingress.

Silicon	ppm	ASTM D5185m	>50	<b>▲ 72</b>	▲ 74	8
Potassium	ppm	ASTM D5185m	>20	<b>20</b>	16	39
Water		WC Method	>0.2	<b>NEG</b>	NEG	NEG
Particles >4µm		ASTM D7647		<b>12414</b>	276322	---
Particles >6µm		ASTM D7647	>5000	<b>▲ 6763</b>	▲ 178029	---
Particles >14µm		ASTM D7647	>640	<b>▲ 1151</b>	▲ 1387	---
Particles >21µm		ASTM D7647	>160	<b>▲ 388</b>	29	---
Particles >38µm		ASTM D7647	>40	<b>▲ 60</b>	0	---
Particles >71µm		ASTM D7647	>10	<b>6</b>	0	---
Oil Cleanliness		ISO 4406 (c)	>19/16	<b>▲ 20/17</b>	▲ 25/18	---
Silt	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Debris	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Appearance	scalar	*Visual	NORML	<b>NORML</b>	NORML	NORML
Odor	scalar	*Visual	NORML	<b>NORML</b>	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	<b>NEG</b>	0.2%	0.2%

## FLUID CONDITION

The AN level is acceptable for this fluid.

Sodium	ppm	ASTM D5185m		<b>379</b>	166	1728
Boron	ppm	ASTM D5185m		<b>30</b>	32	37
Barium	ppm	ASTM D5185m		<b>30</b>	28	3
Molybdenum	ppm	ASTM D5185m		<b>44</b>	118	9
Manganese	ppm	ASTM D5185m		<b>2</b>	3	<1
Magnesium	ppm	ASTM D5185m		<b>49</b>	56	55
Calcium	ppm	ASTM D5185m		<b>133</b>	175	286
Phosphorus	ppm	ASTM D5185m		<b>238</b>	229	253
Zinc	ppm	ASTM D5185m		<b>26</b>	61	27
Sulfur	ppm	ASTM D5185m		<b>7606</b>	6911	7791
Acid Number (AN)	mg KOH/g	ASTM D8045		<b>0.41</b>	0.47	1.18
Visc @ 40°C	cSt	ASTM D445		<b>417</b>	389	407



**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : KL0013152 **Received** : 08 Jan 2024  
**Lab Number** : 06054767 **Diagnosed** : 11 Jan 2024  
**Unique Number** : 10820716 **Diagnostician** : Don Baldrige  
**Test Package** : MOB 2 ( Additional Tests: PrtCount )

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Certificate L2367  
 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)