

Machine Id  
**TL-42 9**  
 Component  
**Gearbox**  
 Fluid  
**GEAR OIL ISO 220 (--- GAL)**

**DIAGNOSIS**

**Recommendation**  
 Resample at the next service interval to monitor.

**Wear**  
 All component wear rates are normal.

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

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

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number	Client Info			<b>ST43503</b>	ST43892	ST43815
Sample Date	Client Info			<b>28 Sep 2023</b>	28 Sep 2023	28 Jun 2023
Machine Age	hrs	Client Info		<b>0</b>	0	0
Oil Age	hrs	Client Info		<b>0</b>	0	0
Oil Changed	Client Info			<b>N/A</b>	N/A	N/A
Sample Status				<b>NORMAL</b>	NORMAL	NORMAL

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>200	<b>14</b>	28	21
Chromium	ppm	ASTM D5185m	>15	<b>0</b>	<1	0
Nickel	ppm	ASTM D5185m	>15	<b>0</b>	0	<1
Titanium	ppm	ASTM D5185m		<b>0</b>	0	0
Silver	ppm	ASTM D5185m		<b>0</b>	0	0
Aluminum	ppm	ASTM D5185m	>25	<b>0</b>	0	0
Lead	ppm	ASTM D5185m	>100	<b>0</b>	0	0
Copper	ppm	ASTM D5185m	>200	<b>&lt;1</b>	0	0
Tin	ppm	ASTM D5185m	>25	<b>0</b>	<1	<1
Vanadium	ppm	ASTM D5185m		<b>0</b>	0	0
Cadmium	ppm	ASTM D5185m		<b>0</b>	0	0

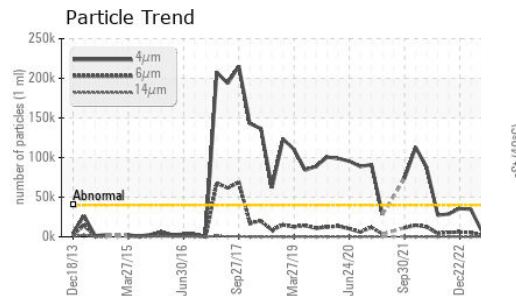
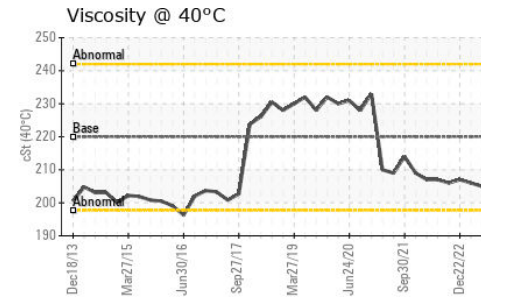
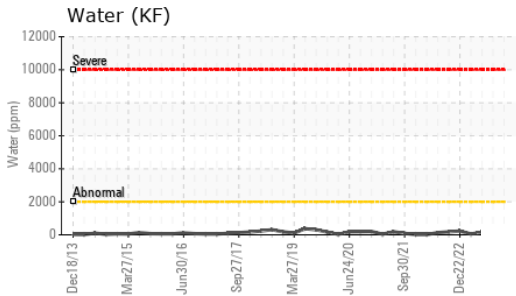
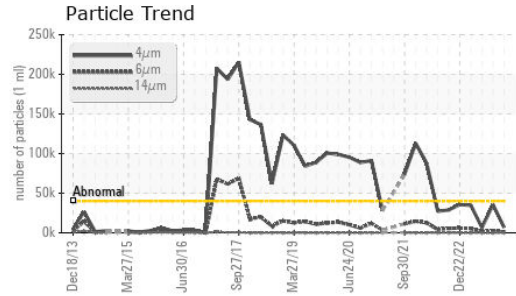
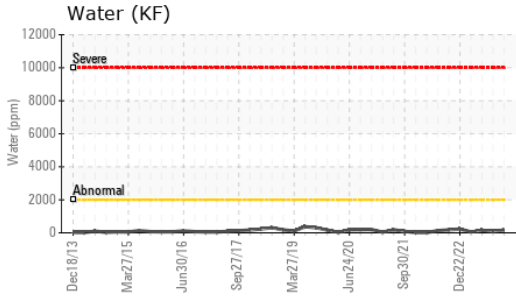
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	50	<b>18</b>	17	13
Barium	ppm	ASTM D5185m	15	<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185m	15	<b>0</b>	0	0
Manganese	ppm	ASTM D5185m		<b>&lt;1</b>	<1	<1
Magnesium	ppm	ASTM D5185m	50	<b>&lt;1</b>	<1	0
Calcium	ppm	ASTM D5185m	50	<b>9</b>	20	11
Phosphorus	ppm	ASTM D5185m	350	<b>432</b>	359	288
Zinc	ppm	ASTM D5185m	100	<b>9</b>	8	3
Sulfur	ppm	ASTM D5185m	12500	<b>7022</b>	16042	12759

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>50	<b>3</b>	7	6
Sodium	ppm	ASTM D5185m		<b>&lt;1</b>	2	0
Potassium	ppm	ASTM D5185m	>20	<b>&lt;1</b>	1	<1
Water	%	ASTM D6304	>0.2	<b>0.016</b>	0.010	0.015
ppm Water	ppm	ASTM D6304	>2000	<b>166.6</b>	101.9	151.7

FLUID CLEANLINESS		method	limit/base	current	history1	history2
Particles >4µm		ASTM D7647	>40000	<b>35479</b>	6861	6644
Particles >6µm		ASTM D7647	>5000	<b>2114</b>	1123	1583
Particles >14µm		ASTM D7647	>640	<b>27</b>	21	97
Particles >21µm		ASTM D7647	>160	<b>6</b>	3	22
Particles >38µm		ASTM D7647	>40	<b>1</b>	1	2
Particles >71µm		ASTM D7647	>10	<b>0</b>	1	1
Oil Cleanliness		ISO 4406 (c)	>22/19/16	<b>22/18/12</b>	20/17/12	20/18/14

FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045	0.85	<b>1.14</b>	0.78	0.78

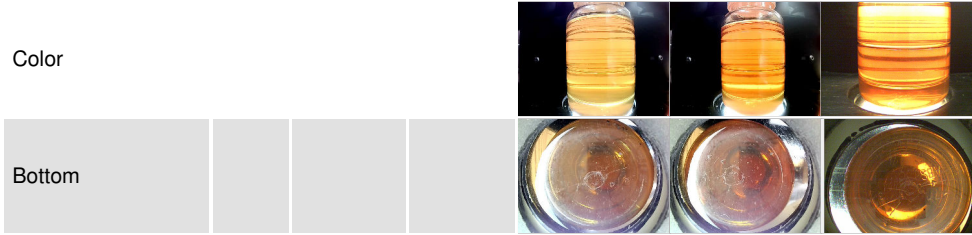
# OIL ANALYSIS REPORT



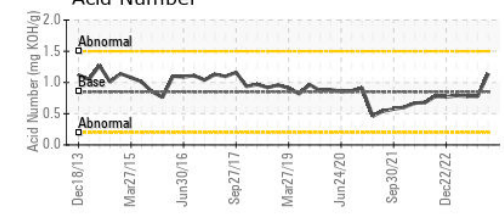
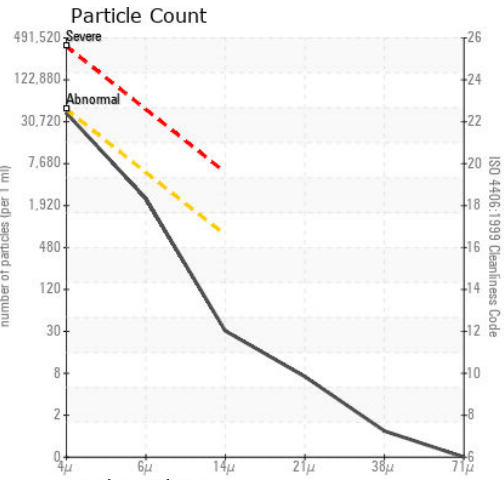
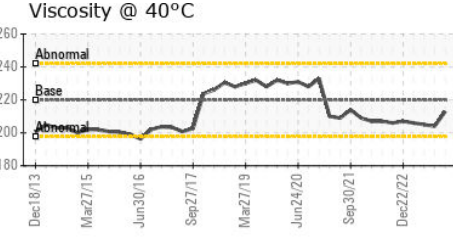
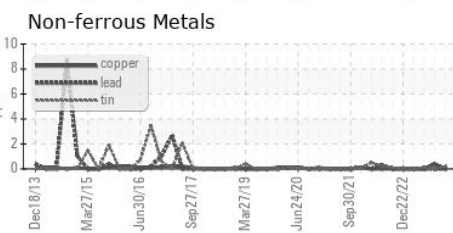
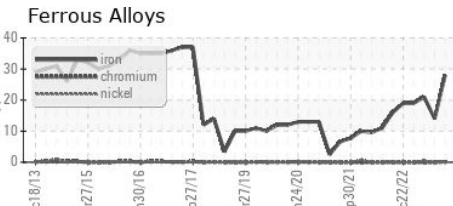
VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG

FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445 220	213	204	205

SAMPLE IMAGES	method	limit/base	current	history1	history2
---------------	--------	------------	---------	----------	----------



## GRAPHS



**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : ST43503 **Received** : 03 Oct 2023  
**Lab Number** : 05967806 **Diagnosed** : 04 Oct 2023  
**Unique Number** : 10674357 **Diagnostician** : Doug Bogart  
**Test Package** : IND 2 ( Additional Tests: KF, PrtCount )

**ZAPP PRECISION STRIP INC.**  
 266 SAMUEL BARNET BLVD.  
 DARTMOUTH, MA  
 US 02745  
 Contact: MARK MEDEIROS  
 mark.medeiros@zapp.com  
 T: (888)647-3700  
 F: (508)998-6310

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)