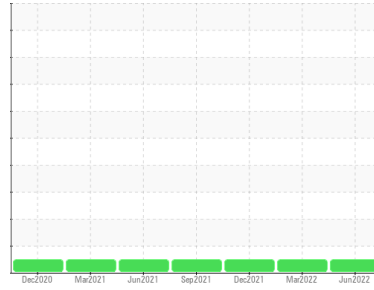




# OIL ANALYSIS REPORT

## Sample Rating Trend



**NORMAL**



Machine Id  
**CCUP STG**  
 Component  
**Turbine**  
 Fluid  
 {not provided} (300 GAL)

### DIAGNOSIS

#### Recommendation

Resample at the next service interval to monitor.

#### Wear

All component wear rates are normal.

#### Contamination

MPC (Membrane Patch Colorimetry) test indicates acceptable levels of varnish present. There is no indication of any contamination in the oil. The amount and size of particulates present in the system are acceptable.

#### Fluid Condition

The AN level is acceptable for this fluid. Linear Sweep Voltammetry (RULER – ASTM D6971) testing indicates normal levels of anti-oxidants present in the oil. The condition of the oil is suitable for further service.

### SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		<b>WC0675478</b>	WC0675479	WC0545578
Sample Date	Client Info		<b>05 Jun 2022</b>	15 Mar 2022	15 Dec 2021
Machine Age	hrs	Client Info	<b>27923</b>	25944	0
Oil Age	hrs	Client Info	<b>0</b>	0	24109
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 >50	<b>0</b>	<1	0
Chromium	ppm	ASTM D5185m >5	<b>0</b>	0	0
Nickel	ppm	ASTM D5185m	<b>0</b>	0	0
Titanium	ppm	ASTM D5185m	<b>0</b>	0	0
Silver	ppm	ASTM D5185m	<b>0</b>	0	0
Aluminum	ppm	ASTM D5185m >15	<b>&lt;1</b>	<1	0
Lead	ppm	ASTM D5185m >65	<b>3</b>	1	<1
Copper	ppm	ASTM D5185m >65	<b>0</b>	<1	<1
Tin	ppm	ASTM D5185m >10	<b>&lt;1</b>	<1	<1
Antimony	ppm	ASTM D5185m	<b>---</b>	---	0
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	<b>&lt;1</b>	0	0
Barium	ppm	ASTM D5185m	<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185m	<b>0</b>	0	0
Manganese	ppm	ASTM D5185m	<b>0</b>	0	0
Magnesium	ppm	ASTM D5185m	<b>0</b>	0	0
Calcium	ppm	ASTM D5185m	<b>2</b>	2	2
Phosphorus	ppm	ASTM D5185m	<b>97</b>	96	88
Zinc	ppm	ASTM D5185m	<b>4</b>	3	4
Sulfur	ppm	ASTM D5185m	<b>85</b>	66	50

### CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >35	<b>&lt;1</b>	<1	<1
Sodium	ppm	ASTM D5185m	<b>5</b>	2	4
Potassium	ppm	ASTM D5185m >20	<b>0</b>	1	0
Water	%	ASTM D6304 >0.1	<b>0.002</b>	0.003	0.009
ppm Water	ppm	ASTM D6304 >1000	<b>19.2</b>	26.2	98.5

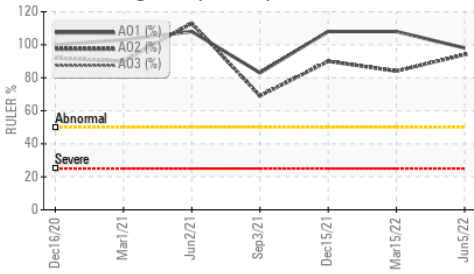
### FLUID CLEANLINESS

	method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647	>10000	<b>807</b>	269	1014
Particles >6µm	ASTM D7647	>2500	<b>223</b>	79	338
Particles >14µm	ASTM D7647	>320	<b>27</b>	15	53
Particles >21µm	ASTM D7647	>80	<b>12</b>	4	13
Particles >38µm	ASTM D7647	>20	<b>3</b>	0	2
Particles >71µm	ASTM D7647	>4	<b>0</b>	0	0
Oil Cleanliness	ISO 4406 (c)	>20/18/15	<b>17/15/12</b>	15/13/11	17/16/13

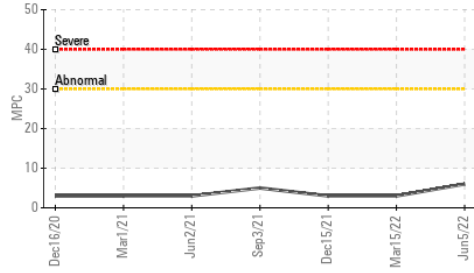


# OIL ANALYSIS REPORT

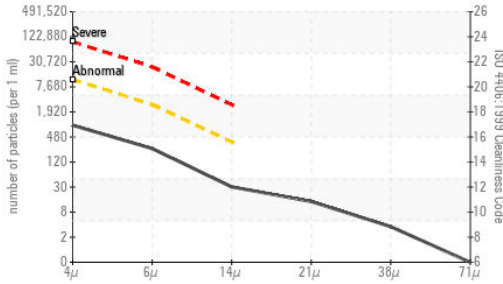
Remaining Life (RULER)



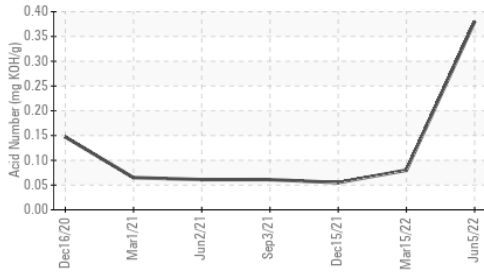
Varnish Potential



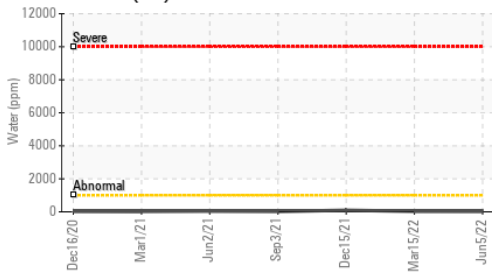
Particle Count



Acid Number



Water (KF)

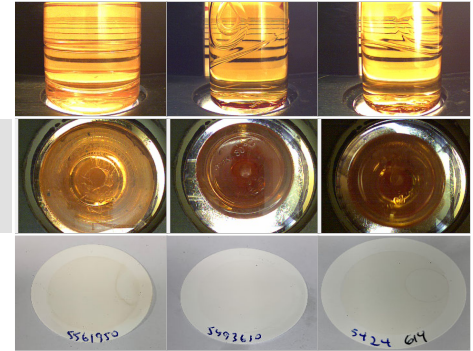


FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045		<b>0.38</b>	0.08	0.055
Anti-Oxidant 1	%	ASTM D6971	<25	<b>98</b>	108	108
Anti-Oxidant 2	%	ASTM D6971	<25	<b>94</b>	84	90
MPC Varnish Potential	Scale	ASTM D7843	>15	<b>6</b>	3	3

VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Precipitate	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Silt	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Debris	scalar	*Visual	NONE	<b>NONE</b>	NONE	LIGHT
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	>0.1	<b>NEG</b>	NEG	NEG
Free Water	scalar	*Visual		<b>NEG</b>	NEG	NEG

FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445		<b>31.6</b>	33.51	31.8
Visc @ 100°C	cSt	ASTM D445		---	5.94	5.87
Viscosity Index (VI)	Scale	ASTM D2270		---	122	130

SAMPLE IMAGES		method	limit/base	current	history1	history2
Color						
Bottom						
MPC						



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513

**Sample No.** : WC0675478

**Lab Number** : 05561950

**Unique Number** : 10006350

**Test Package** : AOM 1 ( Additional Tests: KF )

**Received** : 07 Jun 2022

**Tested** : 22 Jun 2022

**Diagnosed** : 22 Jun 2022 - Doug Bogart

**NORTH CAROLINA STATE UNIVERSITY**

621 MOTOR POOL DR, FACILITIES DIVISION WAREHOUSE

RALEIGH, NC

US 27607

Contact: PAUL WALKER

apwalke3@ncsu.edu

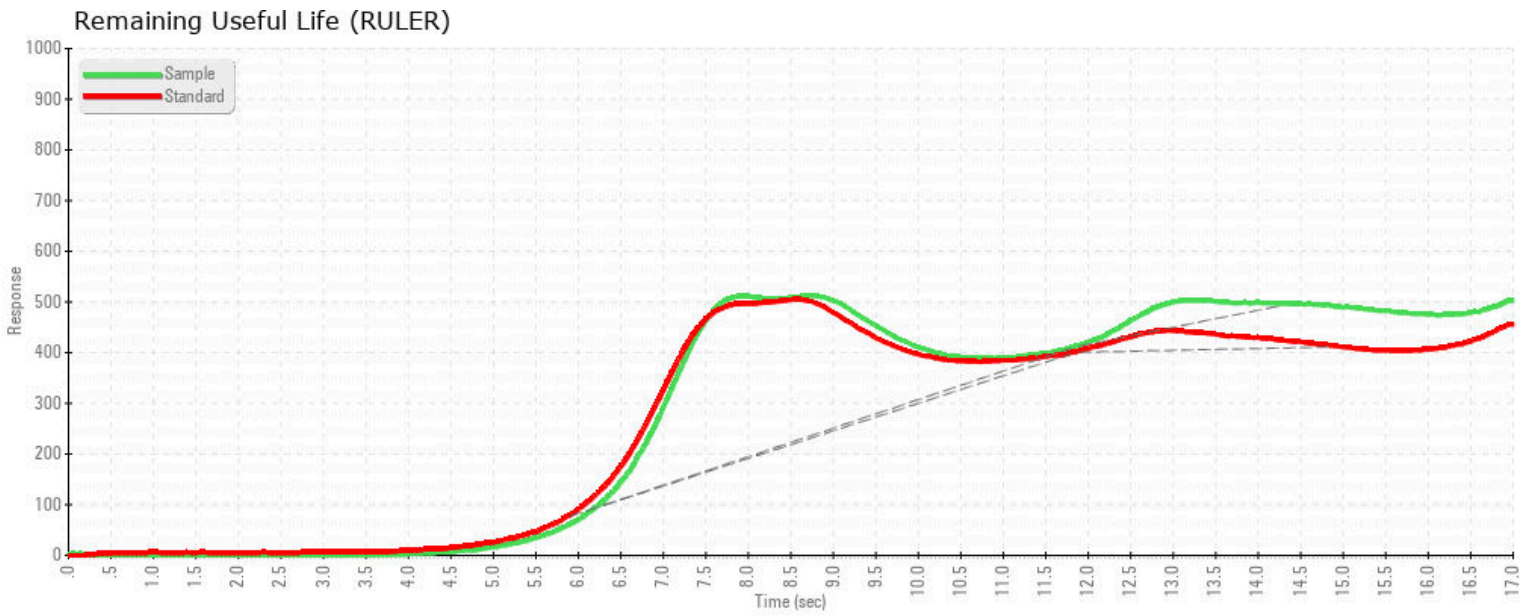
T: (919)513-3646

F:

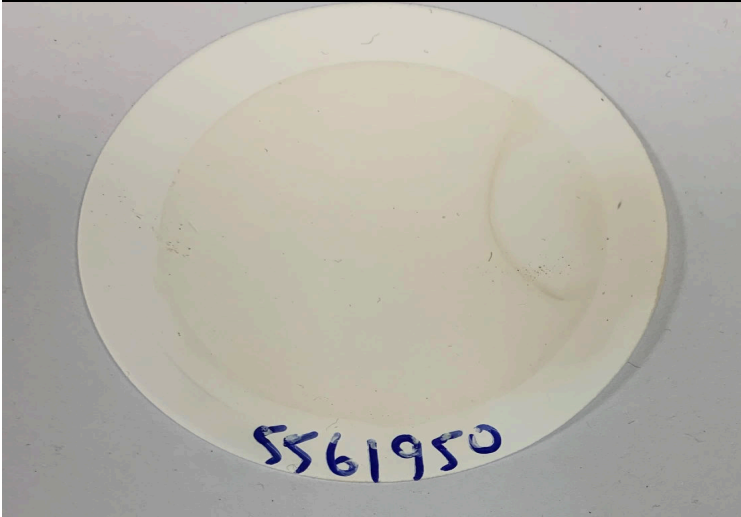
To discuss this sample report, contact Customer Service at 1-800-237-1369.

\* - Denotes test methods that are outside of the ISO 17025 scope of accreditation.

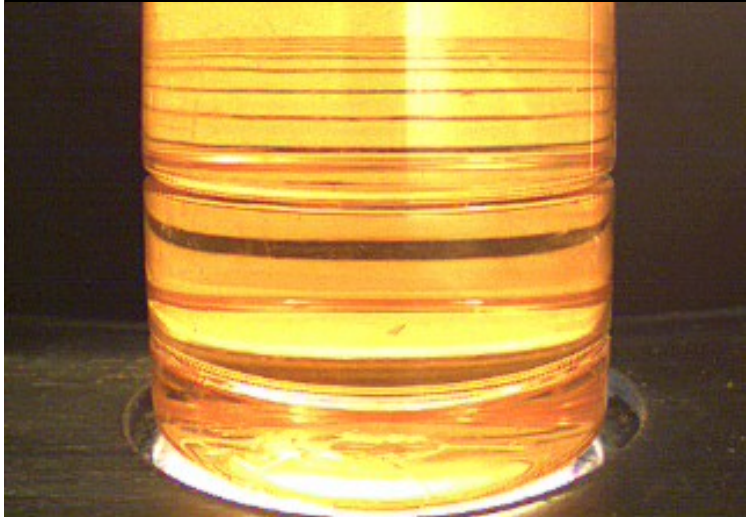
Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)



MPC (Varnish Test)



Sample Color & Clarity



*This page left intentionally blank*