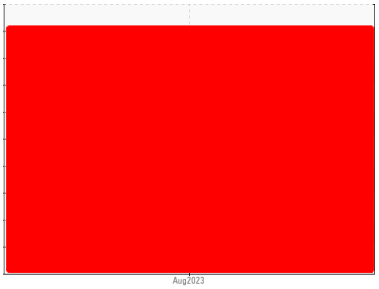
PROBLEM SUMMARY

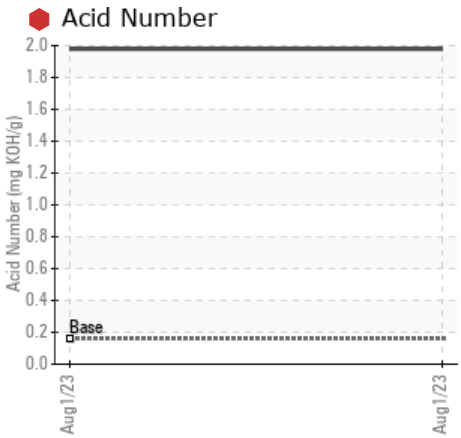
Sample Rating Trend

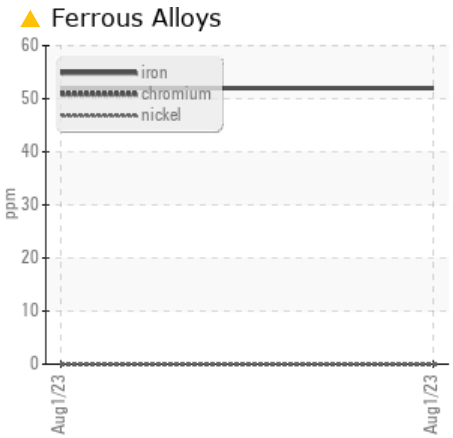


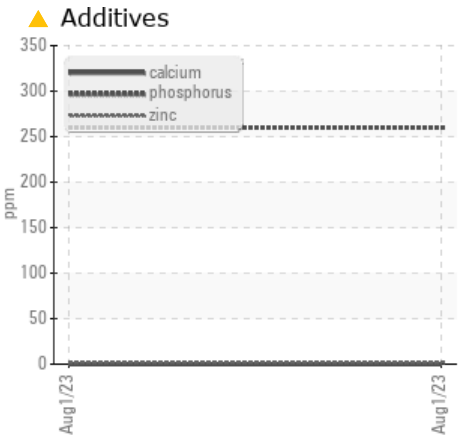
DEGRADATION

Area
[2981567]
Machine Id
T-44
Component
Agitator Gearbox
Fluid
SHELL MORLINA OIL ISO 220 (2 GAL)

COMPONENT CONDITION SUMMARY







RECOMMENDATION

Change oil at next available opportunity. Oil is degrading based on acid number and oxidation results.

PROBLEMATIC TEST RESULTS

Sample Status				**SEVERE**	---	---
Iron	ppm	ASTM D5185m	>150	▲ **52**	---	---
Phosphorus	ppm	ASTM D5185m		▲ **260**	---	---
Sulfur	ppm	ASTM D5185m		▲ **692**	---	---
Sulfation	Abs/.1mm	*ASTM D7415		⬢ **42.5**	---	---
Oxidation	Abs/.1mm	*ASTM D7414		⬢ **53.8**	---	---
Acid Number (AN)	mg KOH/g	ASTM D8045	0.16	⬢ **1.98**	---	---

Customer Id: HEXGEI
Sample No.: PLS0000690
Lab Number: 05935315
Test Package: IND 2

To manage this report scan the QR code

To discuss the diagnosis or test data:
Mike Johnson +1 (615)771-6030
mike.johnson@amrri.com

To change component or sample information:
Customer Service +1 1-800-237-1369
customerservice@wearcheck.com

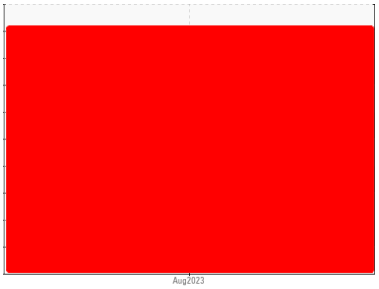
RECOMMENDED ACTIONS

There are no recommended actions for this sample.

HISTORICAL DIAGNOSIS

OIL ANALYSIS REPORT

Sample Rating Trend



DEGRADATION

Area
[2981567]
Machine Id
T-44
Component
Agitator Gearbox
Fluid
SHELL MORLINA OIL ISO 220 (2 GAL)

DIAGNOSIS

Recommendation
Change oil at next available opportunity. Oil is degrading based on acid number and oxidation results.

Wear
Iron wear particles are notable but not excessive.

Contamination
Contamination is low and on par with new unfiltered oil.

Fluid Condition
Fluid health is degrading. Oxidation and sulfation are high and Acid number is high indicating an oil change is due.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**PLS0000690**	---	---
Sample Date		Client Info		**01 Aug 2023**	---	---
Machine Age	yrs	Client Info		**20**	---	---
Oil Age	yrs	Client Info		**1**	---	---
Oil Changed		Client Info		**N/A**	---	---
Sample Status				**SEVERE**	---	---

WEAR METALS		method	limit/base	current	history1	history2
PQ		ASTM D8184		**12**	---	---
Iron	ppm	ASTM D5185m	>150	▲ **52**	---	---
Chromium	ppm	ASTM D5185m	>10	**0**	---	---
Nickel	ppm	ASTM D5185m	>10	**0**	---	---
Titanium	ppm	ASTM D5185m		**0**	---	---
Silver	ppm	ASTM D5185m		**0**	---	---
Aluminum	ppm	ASTM D5185m	>25	**0**	---	---
Lead	ppm	ASTM D5185m	>100	**0**	---	---
Copper	ppm	ASTM D5185m	>50	**<1**	---	---
Tin	ppm	ASTM D5185m	>10	**0**	---	---
Vanadium	ppm	ASTM D5185m		**<1**	---	---
Cadmium	ppm	ASTM D5185m		**0**	---	---

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m		**0**	---	---
Barium	ppm	ASTM D5185m		**0**	---	---
Molybdenum	ppm	ASTM D5185m		**0**	---	---
Manganese	ppm	ASTM D5185m		**<1**	---	---
Magnesium	ppm	ASTM D5185m		**0**	---	---
Calcium	ppm	ASTM D5185m		**0**	---	---
Phosphorus	ppm	ASTM D5185m		▲ **260**	---	---
Zinc	ppm	ASTM D5185m		**2**	---	---
Sulfur	ppm	ASTM D5185m		▲ **692**	---	---

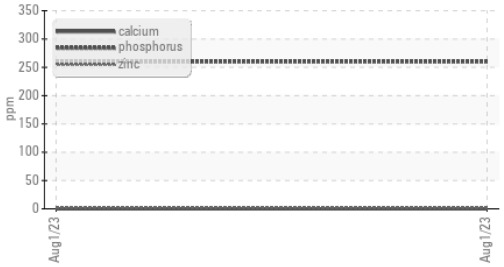
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>50	**2**	---	---
Sodium	ppm	ASTM D5185m		**<1**	---	---
Potassium	ppm	ASTM D5185m	>20	**0**	---	---

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844		**0.1**	---	---
Nitration	Abs/cm	*ASTM D7624		**2.5**	---	---
Sulfation	Abs/.1mm	*ASTM D7415		⬢ **42.5**	---	---

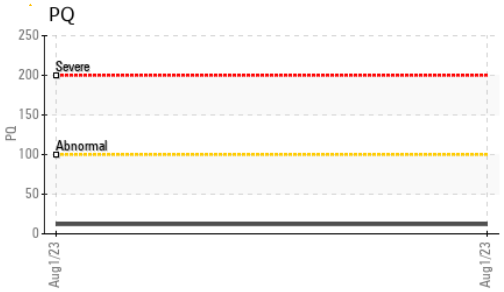
FLUID CLEANLINESS		method	limit/base	current	history1	history2
Particles >4µm		ASTM D7647	>20000	**3446**	---	---
Particles >6µm		ASTM D7647	>5000	**640**	---	---
Particles >14µm		ASTM D7647	>640	**70**	---	---
Particles >21µm		ASTM D7647	>160	**25**	---	---
Particles >38µm		ASTM D7647	>40	**2**	---	---
Particles >71µm		ASTM D7647	>10	**0**	---	---
Oil Cleanliness		ISO 4406 (c)	>21/19/16	**19/16/13**	---	---

OIL ANALYSIS REPORT

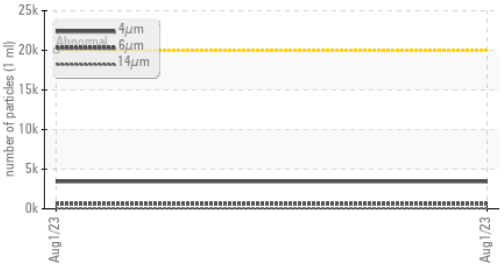
Additives



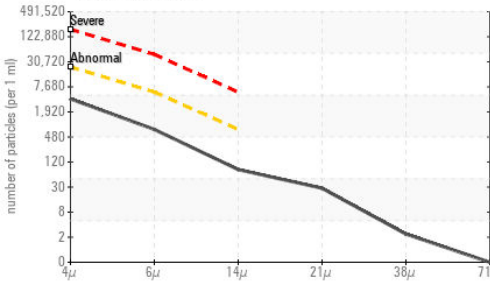
PQ



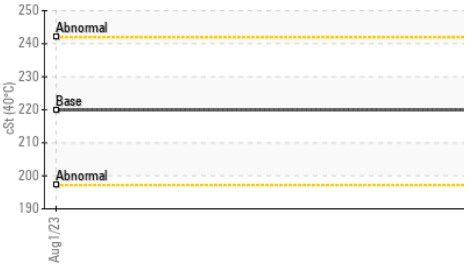
Particle Trend



Particle Count



Viscosity @ 40°C



FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414		**53.8**	---	---
Acid Number (AN)	mg KOH/g	ASTM D8045	0.16	**1.98**	---	---

VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	---	---
Yellow Metal	scalar	*Visual	NONE	**NONE**	---	---
Precipitate	scalar	*Visual	NONE	**NONE**	---	---
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	>0.1	**NEG**	---	---
Free Water	scalar	*Visual		**NEG**	---	---

FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	220	**220**	---	---

SAMPLE IMAGES	method	limit/base	current	history1	history2
Color				*no image*	*no image*
Bottom				*no image*	*no image*

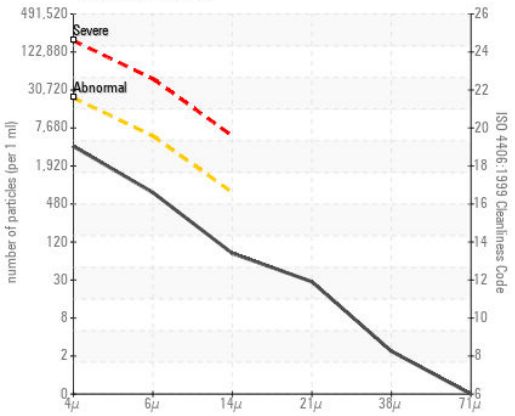
GRAPHS

Ferrous Alloys

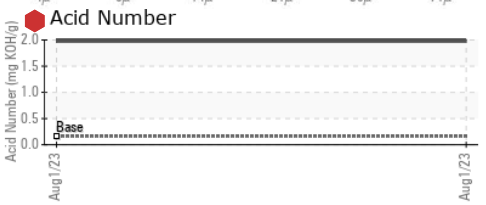
Non-ferrous Metals

Viscosity @ 40°C

Particle Count



Acid Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : PLS0000690 **Received** : 25 Aug 2023
Lab Number : 05935315 **Diagnosed** : 28 Aug 2023
Unique Number : 10620586 **Diagnostician** : Mike Johnson
Test Package : IND 2 (Additional Tests: FT-IR, PQ, PrtCount)

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)

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