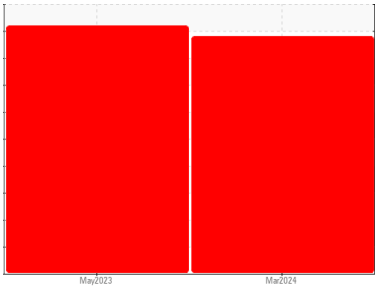
PROBLEM SUMMARY

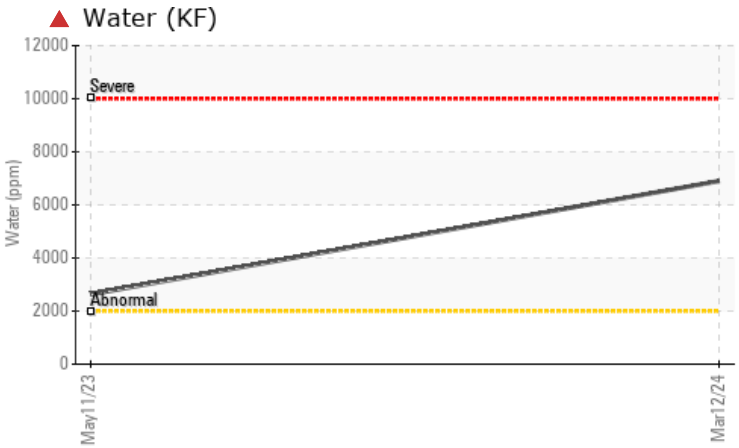
Area
TANK FARM
Machine Id
TK-21 AGITATOR
Component
Gearbox
Fluid
SHELL OMALA S2 G 220 (38 LTR)

Sample Rating Trend



WATER

COMPONENT CONDITION SUMMARY



RECOMMENDATION

Replace the oil at your earliest convenience. Water is substantially elevated. Flush the agitator before refilling and returning to service. Identify the ingression source for the water.

PROBLEMATIC TEST RESULTS

Sample Status				**SEVERE**	SEVERE	---
Water	%	ASTM D6304	>0.2	▲ **0.690**	▲ 0.263	---
ppm Water	ppm	ASTM D6304	>2000	▲ **6900**	▲ 2630	---
Silt	scalar	*Visual	NONE	▲ **HEAVY**	▲ HEAVY	---
Free Water	scalar	*Visual		▲ **2.0**	NEG	---

Customer Id: HEXLUL
Sample No.: PLS0000517
Lab Number: 06141135
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

DEGRADATION

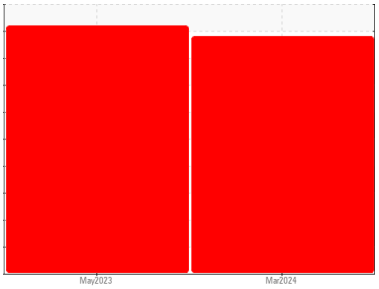
11 May 2023 Diag: Mike Johnson

Change the oil at your earliest possible convenience. Flush the unit with ISO 32 turbine oil following the drain to remove any residual wet oil from the drive. Resample following the change to verify moisture is removed.The wear rate is low and acceptable. However, this sample (TK-21 Agitator) appears to be the first for this drive. It is not clear at this time whether this Fe PPM value is normal or not normal yet. Continue to observe. The moisture level is execptional. Particle count cannot be conducted when the oil is this wet. The oil is severely wet and severly oxidized. This is a typical failure mode for water intrusion into gear oil. Replace as soon as possible.

view report

OIL ANALYSIS REPORT

Sample Rating Trend



WATER

Area
TANK FARM
Machine Id
TK-21 AGITATOR
Component
Gearbox
Fluid
SHELL OMALA S2 G 220 (38 LTR)

DIAGNOSIS

▲ Recommendation
Replace the oil at your earliest convenience. Water is substantially elevated. Flush the agitator before refilling and returning to service. Identify the ingression source for the water.

Wear
The wear rate is low and steady

▲ Contamination
Moisture load is high. Particle count cannot be conducted at this moisture level.

Fluid Condition
Fluid health is compromised by the moisture level.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**PLS0000517**	PLS0000513	---
Sample Date		Client Info		**12 Mar 2024**	11 May 2023	---
Machine Age	hrs	Client Info		**0**	0	---
Oil Age	hrs	Client Info		**0**	0	---
Oil Changed		Client Info		**N/A**	N/A	---
Sample Status				**SEVERE**	SEVERE	---

WEAR METALS		method	limit/base	current	history1	history2
PQ		ASTM D8184		**23**	20	---
Iron	ppm	ASTM D5185m	>200	**29**	28	---
Chromium	ppm	ASTM D5185m	>15	**<1**	<1	---
Nickel	ppm	ASTM D5185m	>15	**<1**	<1	---
Titanium	ppm	ASTM D5185m		**<1**	<1	---
Silver	ppm	ASTM D5185m		**<1**	0	---
Aluminum	ppm	ASTM D5185m	>25	**3**	4	---
Lead	ppm	ASTM D5185m	>100	**<1**	0	---
Copper	ppm	ASTM D5185m	>200	**1**	0	---
Tin	ppm	ASTM D5185m	>25	**<1**	1	---
Vanadium	ppm	ASTM D5185m		**<1**	0	---
Cadmium	ppm	ASTM D5185m		**<1**	0	---

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	4.4	**3**	1	---
Barium	ppm	ASTM D5185m	0.0	**1**	0	---
Molybdenum	ppm	ASTM D5185m	0	**<1**	0	---
Manganese	ppm	ASTM D5185m		**<1**	<1	---
Magnesium	ppm	ASTM D5185m	0	**9**	3	---
Calcium	ppm	ASTM D5185m	0	**20**	39	---
Phosphorus	ppm	ASTM D5185m	215	**325**	347	---
Zinc	ppm	ASTM D5185m	0	**58**	6	---
Sulfur	ppm	ASTM D5185m	7039	**5293**	7418	---

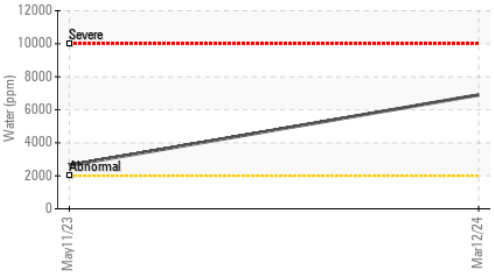
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>50	**5**	6	---
Sodium	ppm	ASTM D5185m		**5**	<1	---
Potassium	ppm	ASTM D5185m	>20	**1**	1	---
Water	%	ASTM D6304	>0.2	▲ **0.690**	▲ 0.263	---
ppm Water	ppm	ASTM D6304	>2000	▲ **6900**	▲ 2630	---

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844		**0.1**	0.2	---
Nitration	Abs/cm	*ASTM D7624		**3.6**	3.6	---
Sulfation	Abs/.1mm	*ASTM D7415		**79.0**	▲ 105.7	---

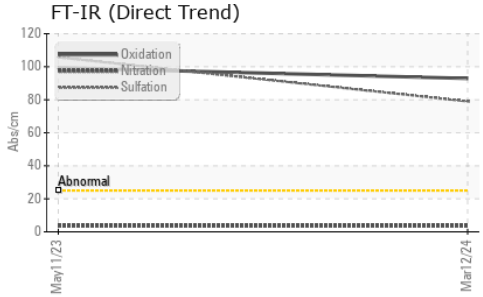
FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414		**92.9**	▲ 99.4	---
Acid Number (AN)	mg KOH/g	ASTM D8045		**0.82**	0.55	---

OIL ANALYSIS REPORT

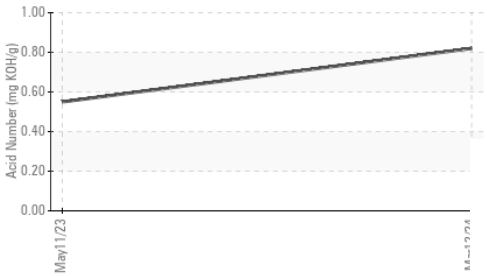
Water (KF)



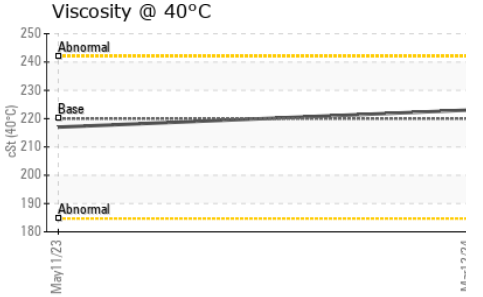
FT-IR (Direct Trend)



Acid Number



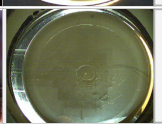
Viscosity @ 40°C



PQ

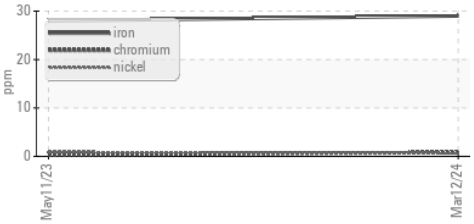
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	---
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	---
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	---
Silt	scalar	*Visual	NONE	▲ **HEAVY**	▲ HEAVY	---
Debris	scalar	*Visual	NONE	**NONE**	NONE	---
Sand/Dirt	scalar	*Visual	NONE	**NONE**	NONE	---
Appearance	scalar	*Visual	NORML	**HAZY**	● HAZY	---
Odor	scalar	*Visual	NORML	**NORML**	NORML	---
Emulsified Water	scalar	*Visual	>0.2	**0.2%**	0.2%	---
Free Water	scalar	*Visual		▲ **2.0**	NEG	---

FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	220	**223**	217	---

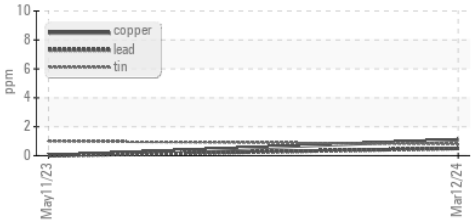
SAMPLE IMAGES	method	limit/base	current	history1	history2
Color					*no image*
Bottom					*no image*

GRAPHS

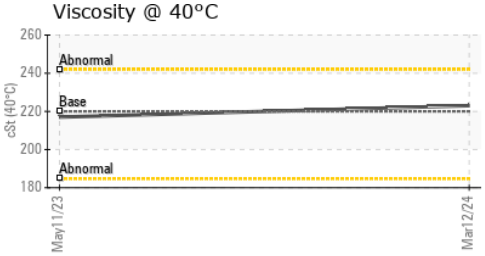
Ferrous Alloys



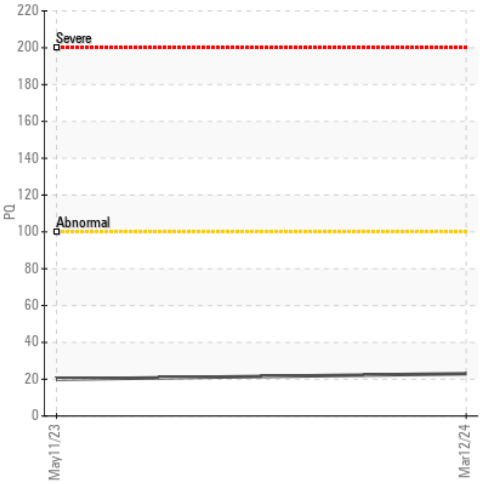
Non-ferrous Metals



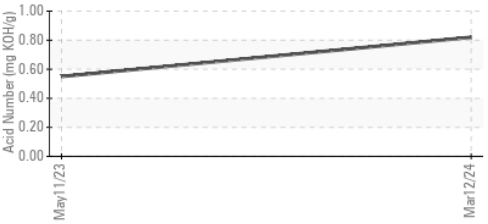
Viscosity @ 40°C



PQ



Acid Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : PLS0000517
Lab Number : 06141135
Unique Number : 10965943
Test Package : IND 2 (Additional Tests: FT-IR, KF, PQ)

Received : 08 Apr 2024
Tested : 22 Apr 2024
Diagnosed : 30 May 2024 - Mike Johnson

HEXION INC - LULING PLANT
12513 QUEENIE RD
LULING, LA
US 70070
Contact: JEFF RENTFROW
jeff.rentfrow@hexion.com;mike.johnson@amrri.com
T:
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)