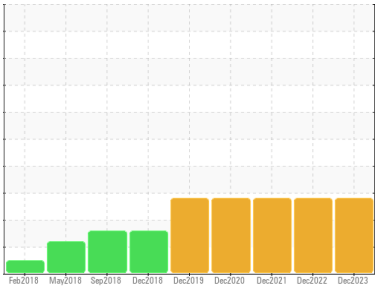
PROBLEM SUMMARY

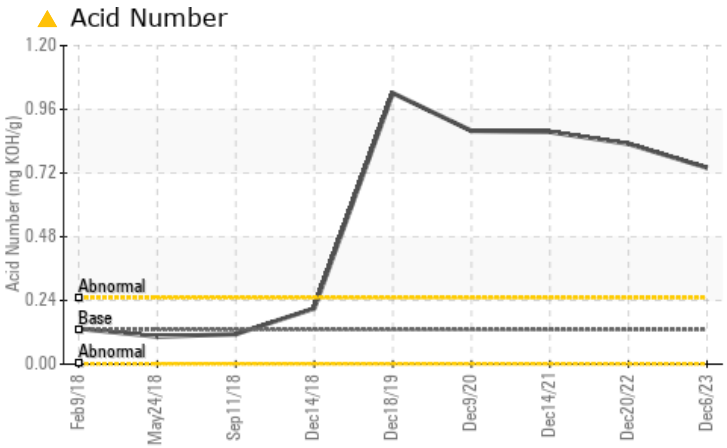
Sample Rating Trend

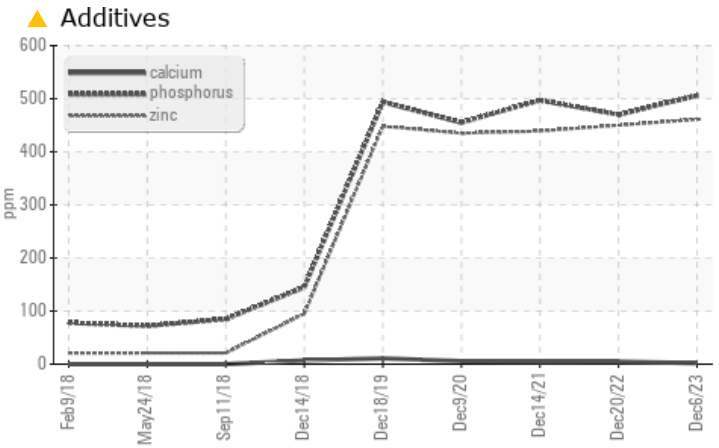


DEGRADATION

Area
COOLING TOWER
Machine Id
Motor - EAST COOLING TOWER PUMP (S/N P611M)
Component
Bearing
Fluid
TURBINE OIL ISO 32 (6 QTS)

COMPONENT CONDITION SUMMARY





RECOMMENDATION

Oil profile is not complete. Please provide a reference for oil type in use and confirm that correct oil is in use in the machine. Trends are constant against previously gathered samples. Resample at next normal interval.

PROBLEMATIC TEST RESULTS

Sample Status				**ABNORMAL**	ABNORMAL	ABNORMAL
Molybdenum	ppm	ASTM D5185m	5	▲ **217**	▲ 224	▲ 231
Phosphorus	ppm	ASTM D5185m	275	▲ **506**	▲ 470	▲ 497
Zinc	ppm	ASTM D5185m	7	▲ **461**	▲ 450	▲ 439
Sulfur	ppm	ASTM D5185m	400	▲ **1628**	▲ 1560	▲ 1455
Acid Number (AN)	mg KOH/g	ASTM D8045	0.13	▲ **0.74**	▲ 0.83	▲ 0.875

Customer Id: HEXDIB
Sample No.: PLS0000653
Lab Number: 06028592
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

20 Dec 2022 Diag: Mike Johnson

DEGRADATION

Oil profile is not complete. Please provide a reference for oil type in use and confirm that correct oil is in use in the machine. Trends are constant against previously gathered samples. Resample at next normal interval.Wear particles are low and acceptable. Contamination is on par with new unfiltered oil. Fluid health indicators do not match the oil profile on file.

view report

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14 Dec 2021 Diag: Mike Johnson

DEGRADATION

Confirm the oil used in this machine. Oil additive profile in the sample does not match the oil on file. Additives and health are consistent with previous sampling. Resample at next normal interval and confirm oil product on next sample label.Wear particles are low and acceptable. Contamination is low and acceptable. Oil profile does not match the reference oil on file. More correct analysis can be obtained if a reference oil is correctly identified. Fluid appears to be unchanging from previous two samples.

view report

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09 Dec 2020 Diag: Mike Johnson

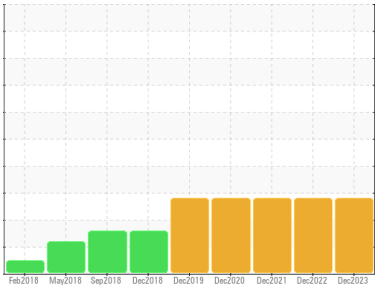
DEGRADATION

Please investigate the type of oil used in this sump. The additives are not typical for Turbine Oil, but are characteristic of EP and AW oil. The AN values reinforce that there is AW/EP chemistry in the sump. The viscosity is correct, so there is no urgent need to change the oil to address this.Wear values are all low and steady. The contaminant load is moderate for a journal bearing. Continue to monitor. The fluid is not corrupted. It may be a blend of various product types, which will lead to questionable performance, but there is no urgent need to make an oil change. Continue to monitor.

view report

OIL ANALYSIS REPORT

Sample Rating Trend



DEGRADATION

Area
COOLING TOWER
Machine Id
Motor - EAST COOLING TOWER PUMP (S/N P611M)
Component
Bearing
Fluid
TURBINE OIL ISO 32 (6 QTS)

DIAGNOSIS

▲ Recommendation
Oil profile is not complete. Please provide a reference for oil type in use and confirm that correct oil is in use in the machine. Trends are constant against previously gathered samples. Resample at next normal interval.

Wear
Wear particles are low and acceptable.

Contamination
Contamination is on par with new unfiltered oil.

▲ Fluid Condition
Fluid health indicators do not match the oil profile on file.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**PLS0000653**	PLS0000424	PLS0000235
Sample Date		Client Info		**06 Dec 2023**	20 Dec 2022	14 Dec 2021
Machine Age	yrs	Client Info		**0**	5	2
Oil Age	yrs	Client Info		**0**	6	5
Oil Changed		Client Info		**N/A**	N/A	N/A
Sample Status				**ABNORMAL**	ABNORMAL	ABNORMAL

CONTAMINATION		method	limit/base	current	history1	history2
Water		WC Method	>2	**NEG**	NEG	NEG

WEAR METALS		method	limit/base	current	history1	history2
PQ		ASTM D8184		**14**	6	14
Iron	ppm	ASTM D5185m	>20	**0**	2	2
Chromium	ppm	ASTM D5185m	>20	**0**	0	0
Nickel	ppm	ASTM D5185m	>20	**0**	0	0
Titanium	ppm	ASTM D5185m		**0**	0	0
Silver	ppm	ASTM D5185m		**0**	0	0
Aluminum	ppm	ASTM D5185m	>20	**2**	0	0
Lead	ppm	ASTM D5185m	>20	**0**	<1	<1
Copper	ppm	ASTM D5185m	>20	**8**	6	4
Tin	ppm	ASTM D5185m	>20	**0**	0	0
Antimony	ppm	ASTM D5185m		**---**	---	0
Vanadium	ppm	ASTM D5185m		**0**	0	0
Cadmium	ppm	ASTM D5185m		**0**	0	0

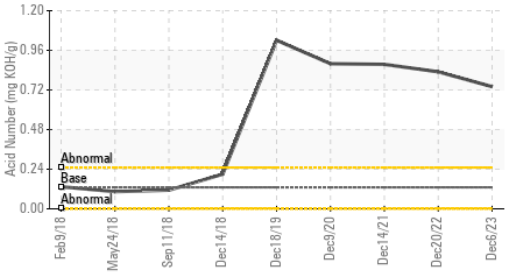
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	5	**5**	0	2
Barium	ppm	ASTM D5185m	5	**0**	0	0
Molybdenum	ppm	ASTM D5185m	5	▲ **217**	▲ 224	▲ 231
Manganese	ppm	ASTM D5185m		**<1**	0	<1
Magnesium	ppm	ASTM D5185m	5	**<1**	0	0
Calcium	ppm	ASTM D5185m	10	**2**	5	4
Phosphorus	ppm	ASTM D5185m	275	▲ **506**	▲ 470	▲ 497
Zinc	ppm	ASTM D5185m	7	▲ **461**	▲ 450	▲ 439
Sulfur	ppm	ASTM D5185m	400	▲ **1628**	▲ 1560	▲ 1455

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>15	**2**	2	2
Sodium	ppm	ASTM D5185m		**2**	0	2
Potassium	ppm	ASTM D5185m	>20	**<1**	<1	0

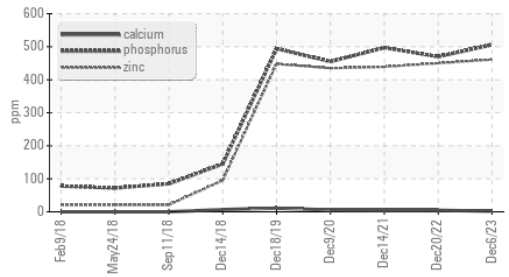
INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844		**0**	0	0
Nitration	Abs/cm	*ASTM D7624		**1.9**	2.2	2.1
Sulfation	Abs/.1mm	*ASTM D7415		**10.8**	10.9	11.1

OIL ANALYSIS REPORT

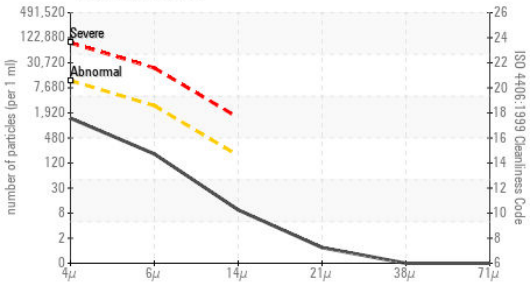
Acid Number



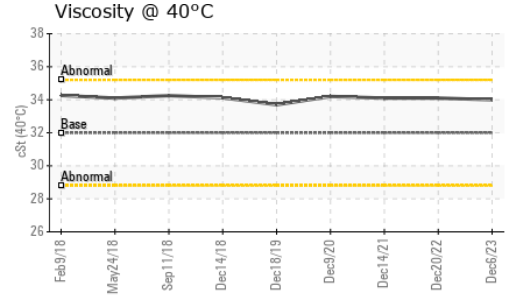
Additives



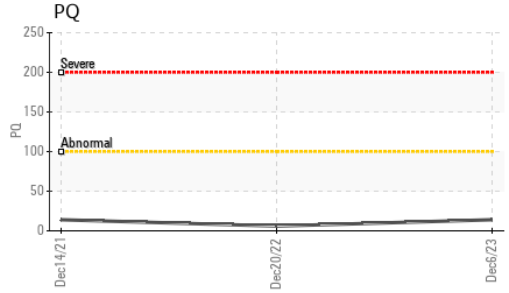
Particle Count



Viscosity @ 40°C



PQ

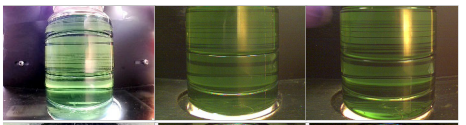
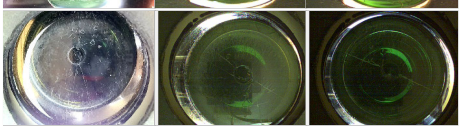


FLUID CLEANLINESS		method	limit/base	current	history1	history2
Particles >4µm		ASTM D7647	>10000	**1256**	2542	1513
Particles >6µm		ASTM D7647	>2500	**175**	403	176
Particles >14µm		ASTM D7647	>160	**8**	20	10
Particles >21µm		ASTM D7647	>40	**1**	4	2
Particles >38µm		ASTM D7647	>10	**0**	0	0
Particles >71µm		ASTM D7647	>3	**0**	0	0
Oil Cleanliness		ISO 4406 (c)	>20/18/14	**17/15/10**	19/16/11	18/15/10

FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414		**2.2**	2.3	2.2
Acid Number (AN)	mg KOH/g	ASTM D8045	0.13	▲ **0.74**	▲ 0.83	▲ 0.875

VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Debris	scalar	*Visual	NONE	**NONE**	VLITE	NONE
Sand/Dirt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Appearance	scalar	*Visual	NORML	**NORML**	NORML	NORML
Odor	scalar	*Visual	NORML	**NORML**	NORML	NORML
Emulsified Water	scalar	*Visual	>2	**NEG**	NEG	NEG
Free Water	scalar	*Visual		**NEG**	NEG	NEG

FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	32	**34.0**	34.1	34.1

SAMPLE IMAGES	method	limit/base	current	history1	history2
Color					
Bottom					

Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : PLS0000653 **Recieved** : 07 Dec 2023
Lab Number : 06028592 **Diagnosed** : 15 Dec 2023
Unique Number : 10778383 **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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