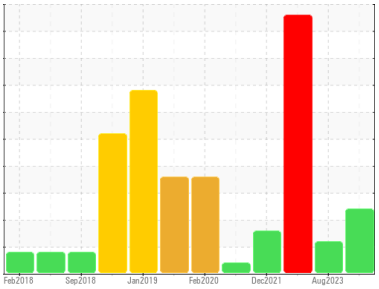
PROBLEM SUMMARY

Sample Rating Trend

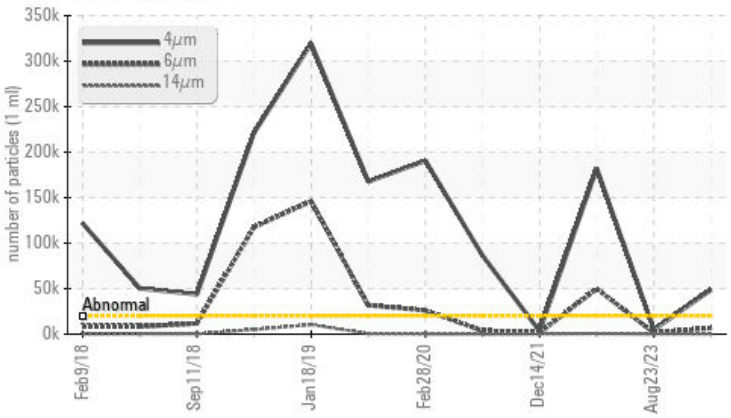


ADDITIVES

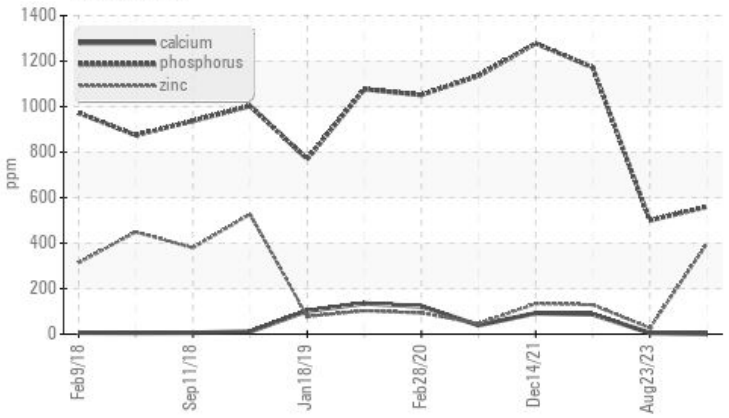
Area
COOLING TOWER
Machine Id
COOLING TOWER SOUTH FAN (S/N G602GB)
Component
Gearbox
Fluid
SCHAEFFER 209 MOLY UNIVERSAL GEARLUBE ISO 220 (6 GAL)

COMPONENT CONDITION SUMMARY

Particle Trend



Additives



RECOMMENDATION

Oil contamination is slightly elevated. Wear is normal and low. Confirm oil type as additives are different from previous samples. No other action required at this time. Resample at next normal interval.

PROBLEMATIC TEST RESULTS

Sample Status				**ABNORMAL**	ABNORMAL	SEVERE
Boron	ppm	ASTM D5185m	65	▲ **8**	▲ 4	78
Phosphorus	ppm	ASTM D5185m	875	▲ **560**	▲ 499	1172
Sulfur	ppm	ASTM D5185m	16000	▲ **13837**	▲ 14835	27520
Particles >4µm		ASTM D7647	>20000	▲ **48699**	5053	⬢ 182108
Particles >6µm		ASTM D7647	>5000	▲ **6838**	1498	⬢ 49900
Oil Cleanliness		ISO 4406 (c)	>21/19/16	▲ **23/20/15**	20/18/14	⬢ 25/23/16

Customer Id: HEXDIB
Sample No.: PLS0000656
Lab Number: 06028591
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

23 Aug 2023 Diag: Mike Johnson

ADDITIVES

Oil condition is on par with new unfiltered oil. Confirm oil type as additives are different from previous samples. No other action required at this time. Resample at next normal interval.Wear rates are low and much improved from previous samples. Particulate contamination is on par with new unfiltered oil and much improved from previous samples. Filtration can help extend machine life. Fluid additives are slightly lower than expected but health indicators such as oxidation and acid number are much improved from previous samples. Verification of the oil used should clarify the additives discrepancy.

view report

14 Dec 2022 Diag: Mike Johnson

WEAR

Wear is accelerating and contamination is significantly elevated, necessitating immediate filtration action or oil change. Resample after 1 month of running after the filter or oil change action has been taken. Consider using other predictive maintenance techniques to confirm the wear (vibration, machine load).Iron particles are substantially elevated from previous samples. Particle contamination is critically elevated and necessitates some action to preserve the machinery. Fluid health is acceptable for continued use provided that contamination is brought under control.

view report

14 Dec 2021 Diag: Mike Johnson

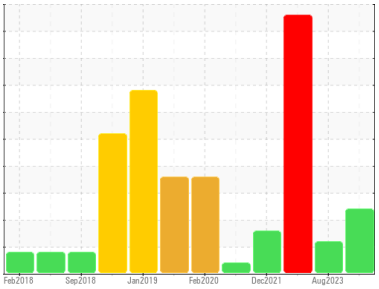
WEAR

Investigate machine for other possible signs of wear (vibration, slop in gears, excessive heat). Resample at next normal interval.Iron wear particles are substantially elevated indicating a rapid rate of wear. This is likely caused by elevated particle contamination over extended periods of time. Particle contamination is on par with new unfiltered oil. Oil health is acceptable for continued use.

view report

OIL ANALYSIS REPORT

Sample Rating Trend



ADDITIVES

Area
COOLING TOWER
Machine Id
COOLING TOWER SOUTH FAN (S/N G602GB)
Component
Gearbox
Fluid
SCHAEFFER 209 MOLY UNIVERSAL GEARLUBE ISO 220 (6 GAL)

DIAGNOSIS

▲ Recommendation

Oil contamination is slightly elevated. Wear is normal and low. Confirm oil type as additives are different from previous samples. No other action required at this time. Resample at next normal interval.

Wear

Wear rates are low and much improved from previous samples.

▲ Contamination

Particulate contamination is slightly elevated.

▲ Fluid Condition

Fluid additives are slightly lower than expected but health indicators such as oxidation and acid number are much improved from previous samples. Verification of the oil used should clarify the additives discrepancy.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**PLS0000656**	PLS0000651	PLS0000423
Sample Date		Client Info		**06 Dec 2023**	23 Aug 2023	14 Dec 2022
Machine Age	days	Client Info		**0**	1	7
Oil Age	days	Client Info		**0**	1	2
Oil Changed		Client Info		**N/A**	N/A	N/A
Sample Status				**ABNORMAL**	ABNORMAL	SEVERE

CONTAMINATION		method	limit/base	current	history1	history2
Water		WC Method	>0.2	**NEG**	NEG	NEG

WEAR METALS		method	limit/base	current	history1	history2
PQ		ASTM D8184		**13**	14	35
Iron	ppm	ASTM D5185m	>200	**3**	<1	⬢ 354
Chromium	ppm	ASTM D5185m	>15	**0**	0	2
Nickel	ppm	ASTM D5185m	>15	**0**	0	<1
Titanium	ppm	ASTM D5185m		**0**	0	<1
Silver	ppm	ASTM D5185m		**0**	<1	1
Aluminum	ppm	ASTM D5185m	>25	**2**	3	4
Lead	ppm	ASTM D5185m	>100	**0**	0	1
Copper	ppm	ASTM D5185m	>200	**<1**	0	1
Tin	ppm	ASTM D5185m	>25	**0**	0	0
Antimony	ppm	ASTM D5185m	>5	**---**	---	---
Vanadium	ppm	ASTM D5185m		**0**	0	<1
Cadmium	ppm	ASTM D5185m		**0**	0	0

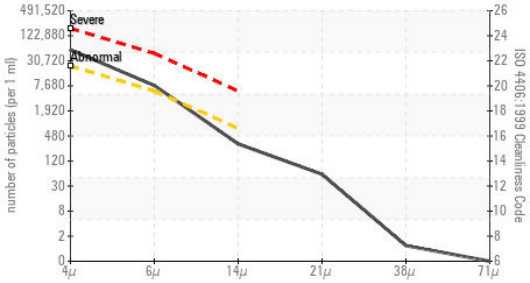
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	65	▲ **8**	▲ 4	78
Barium	ppm	ASTM D5185m		**0**	0	0
Molybdenum	ppm	ASTM D5185m	325	**141**	164	377
Manganese	ppm	ASTM D5185m		**<1**	0	4
Magnesium	ppm	ASTM D5185m		**<1**	4	18
Calcium	ppm	ASTM D5185m		**<1**	5	87
Phosphorus	ppm	ASTM D5185m	875	▲ **560**	▲ 499	1172
Zinc	ppm	ASTM D5185m		**398**	27	129
Sulfur	ppm	ASTM D5185m	16000	▲ **13837**	▲ 14835	27520

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>50	**3**	3	12
Sodium	ppm	ASTM D5185m		**2**	9	2
Potassium	ppm	ASTM D5185m	>20	**1**	0	3

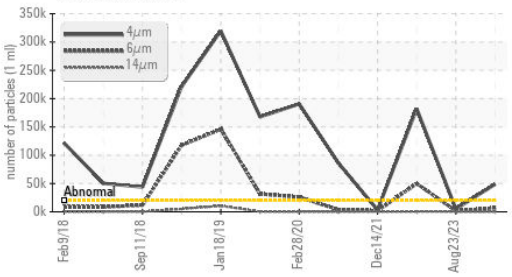
INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844		**0**	0	0.1
Nitration	Abs/cm	*ASTM D7624		**4.0**	4.0	5.0
Sulfation	Abs/.1mm	*ASTM D7415		**12.0**	11.5	17.6

OIL ANALYSIS REPORT

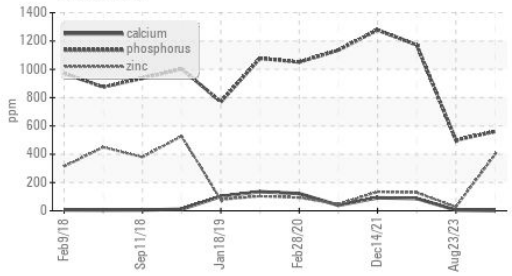
Particle Count



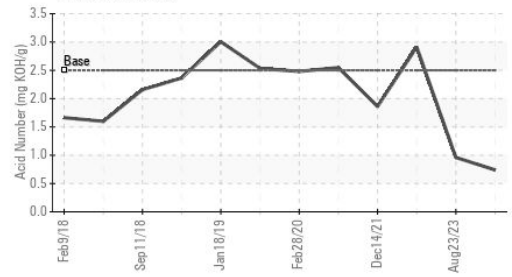
Particle Trend



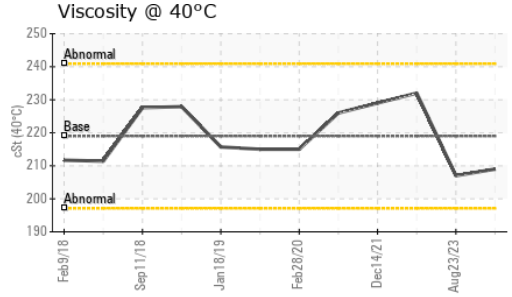
Additives



Acid Number



Viscosity @ 40°C



FLUID CLEANLINESS		method	limit/base	current	history1	history2
Particles >4µm		ASTM D7647	>20000	▲ **48699**	5053	⬢ 182108
Particles >6µm		ASTM D7647	>5000	▲ **6838**	1498	⬢ 49900
Particles >14µm		ASTM D7647	>640	**272**	144	536
Particles >21µm		ASTM D7647	>160	**51**	39	74
Particles >38µm		ASTM D7647	>40	**1**	1	6
Particles >71µm		ASTM D7647	>10	**0**	0	2
Oil Cleanliness		ISO 4406 (c)	>21/19/16	▲ **23/20/15**	20/18/14	⬢ 25/23/16

FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414		**3.5**	3.4	6.2
Acid Number (AN)	mg KOH/g	ASTM D8045	2.5	**0.74**	0.96	2.91

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**	NONE	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	>0.2	**NEG**	NEG	NEG
Free Water	scalar	*Visual		**NEG**	NEG	NEG

FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	219	**209**	207	232

SAMPLE IMAGES	method	limit/base	current	history1	history2
Color					
Bottom					

Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : PLS0000656 **Recieved** : 07 Dec 2023
Lab Number : 06028591 **Diagnosed** : 15 Dec 2023
Unique Number : 10778382 **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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