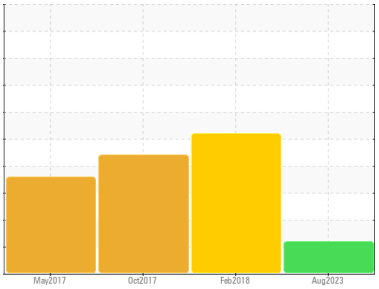
PROBLEM SUMMARY

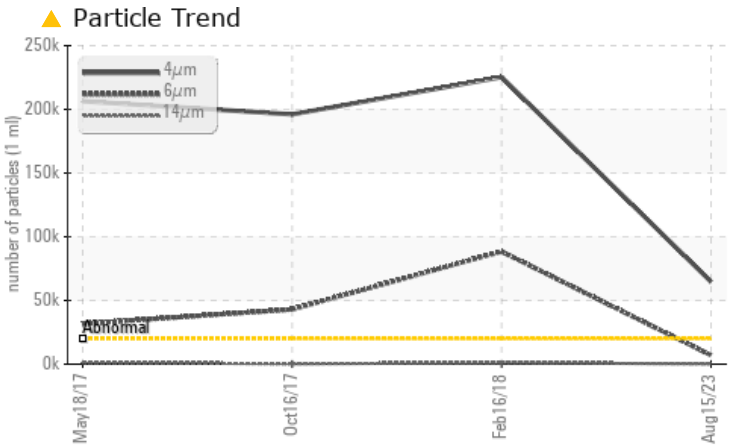
Sample Rating Trend



ISO

Area
REACTOR 5
Machine Id
R5 AGITATOR - 10123132 (S/N 20030-C)
Component
Gearbox
Fluid
MOBIL SHC 630 (4 QTS)

COMPONENT CONDITION SUMMARY



RECOMMENDATION

Filter the oil per the notes below. Lubricant is dirty, but improved, and otherwise acceptable for continued use.

PROBLEMATIC TEST RESULTS

Sample Status				ABNORMAL	SEVERE	SEVERE
Particles >4µm		ASTM D7647	>20000	▲ **64695**	⬢ 225298	⬢ 196067
Particles >6µm		ASTM D7647	>5000	▲ **7007**	⬢ 88398	⬢ 42978
Oil Cleanliness		ISO 4406 (c)	>21/19/16	▲ **23/20/15**	⬢ 25/24/17	⬢ 25/23/15

Customer Id: HEXSPROR
Sample No.: PLSI2295488
Lab Number: 05935316
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

ISO

16 Feb 2018 Diag: Doug Bogart

Check seals and/or filters for points of contaminant entry. The air breather requires service. If unrated, we recommend that you replace with a suitable micron rated and/or desiccant air breather. If rated, we recommend that you service/replace the breather. The oil change at the time of sampling has been noted. Confirm the source of the lubricant being utilized for top-up/fill. Resample in 30-45 days to monitor this situation. The fluid was specified as MOBIL SHC 629, however, a fluid match indicates that this fluid is ISO 220 Synthetic (PAG) Gear Oil. Please confirm the oil type and grade on your next sample.All component wear rates are normal. Particles >6µm are severely high. Particles >4µm are severely high. Particles >14µm are notably high. Viscosity of sample indicates oil is within ISO 220 range, advise investigate. This plus the additive levels indicates that this is not the same brand, or type of oil as reported. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service. The oil is still serviceable provided that the contaminant(s) can be reduced to acceptable levels.

view report

ISO

16 Oct 2017 Diag:

Filter the oil per the notes below. Lubricant is dirty, but otherwise acceptable for continued uese.Wear rates are low and appropraite. Expect to see some increase unless the solid particulate is brought under control. Particles >6µm are severely high. Particles >4µm are severely high. Calcium ppm levels are notably low. Phosphorus ppm levels are notably low. Sulfur ppm levels are notably low. Zinc ppm levels are notably low. Please verify that top-ups are being conducted with the PAO lubricant, SHC 629, as noted for this drive.

view report

ISO

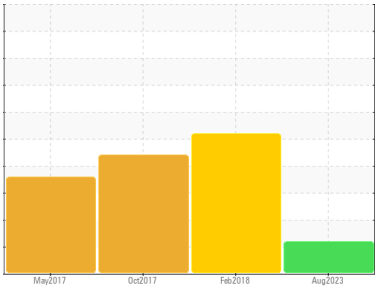
18 May 2017 Diag:

These samples where not purchased through AMRRI/Fluid Forensics. For Fluid Forensics analysis on future samples please order bottles through AMRRI. 615.513.3000.This oil should be filtered extensively. Oil health appears acceptable. Wear debris is low and appropriate. However, assuming the sample was NOT collected at a drain port or with a drop tube, the oils is substantially dirty. Simply changing the oil will NOT address contamination levels of this magnitude.The wear debris results are low and appropriate for this type of machine. Particles >4µm are severely high. Oil Cleanliness is severe. Particles >71µm are abnormally high. Particles >14µm are abnormally high. Particles >21µm are abnormally high. Particles >6µm are abnormally high. Particles >38µm are notably high. The fluid health is acceptable.

view report

OIL ANALYSIS REPORT

Sample Rating Trend



ISO

Area
REACTOR 5
Machine Id
R5 AGITATOR - 10123132 (S/N 20030-C)
Component
Gearbox
Fluid
MOBIL SHC 630 (4 QTS)

DIAGNOSIS

▲ Recommendation

Filter the oil per the notes below. Lubricant is dirty, but improved, and otherwise acceptable for continued use.

Wear

Wear rates are low and appropraite. Expect to see some increase unless the solid particulate is brought under control.

▲ Contamination

Particles >6µm are high. Particles >4µm are high.

Fluid Condition

Calcium ppm levels are notably low. Phosphorus ppm levels are notably low. Sulfur ppm levels are notably low. Zinc ppm levels are notably low. Please verify that top-ups are being conducted with the PAO lubricant, SHC 630, as noted for this drive.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**PLSI2295488**	PLSI2275786	PLSI2275785
Sample Date		Client Info		**15 Aug 2023**	16 Feb 2018	16 Oct 2017
Machine Age	yrs	Client Info		**35**	20	25
Oil Age	yrs	Client Info		**0**	0	0
Oil Changed		Client Info		**Changed**	Changed	N/A
Sample Status				**ABNORMAL**	SEVERE	SEVERE

WEAR METALS		method	limit/base	current	history1	history2
PQ		ASTM D8184		**16**	23	19
Iron	ppm	ASTM D5185m	>200	**3**	12	6
Chromium	ppm	ASTM D5185m	>15	**0**	<1	0
Nickel	ppm	ASTM D5185m	>15	**0**	0	0
Titanium	ppm	ASTM D5185m		**0**	0	0
Silver	ppm	ASTM D5185m		**0**	0	0
Aluminum	ppm	ASTM D5185m	>25	**0**	<1	<1
Lead	ppm	ASTM D5185m	>100	**0**	<1	0
Copper	ppm	ASTM D5185m	>200	**0**	<1	<1
Tin	ppm	ASTM D5185m	>25	**0**	0	2
Antimony	ppm	ASTM D5185m	>5	**---**	0	0
Vanadium	ppm	ASTM D5185m		**<1**	0	0
Cadmium	ppm	ASTM D5185m		**0**	0	0

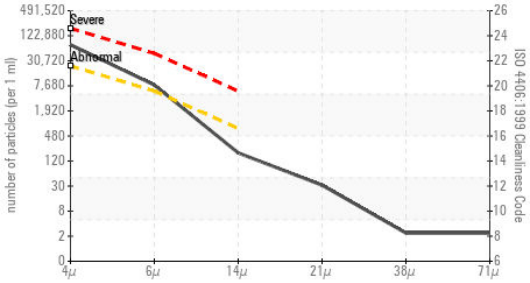
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m		**0**	2	<1
Barium	ppm	ASTM D5185m		**0**	0	0
Molybdenum	ppm	ASTM D5185m		**0**	0	0
Manganese	ppm	ASTM D5185m		**0**	<1	<1
Magnesium	ppm	ASTM D5185m		**0**	0	2
Calcium	ppm	ASTM D5185m		**0**	▲ 2	▲ 2
Phosphorus	ppm	ASTM D5185m		**513**	▲ 372	▲ 426
Zinc	ppm	ASTM D5185m		**0**	▲ <1	▲ 5
Sulfur	ppm	ASTM D5185m		**24**	▲ 17	▲ 16

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>50	**18**	20	28
Sodium	ppm	ASTM D5185m		**<1**	2	<1
Potassium	ppm	ASTM D5185m	>20	**0**	2	<1

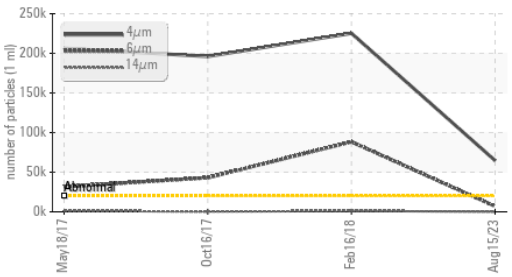
INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844		**0**	0	0
Nitration	Abs/cm	*ASTM D7624		**4.6**	4.	5.
Sulfation	Abs/.1mm	*ASTM D7415		**12.2**	8.	13.

OIL ANALYSIS REPORT

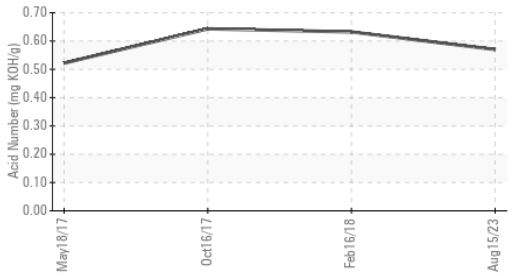
Particle Count



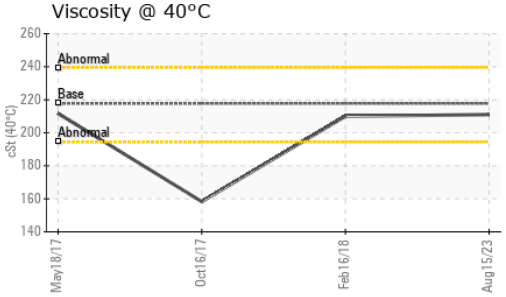
Particle Trend



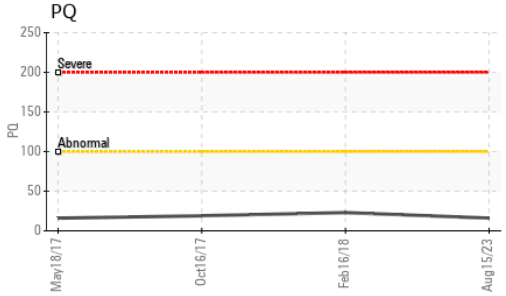
Acid Number



Viscosity @ 40°C



PQ

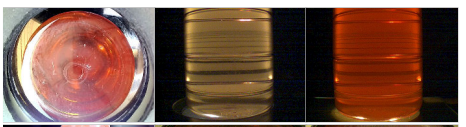


FLUID CLEANLINESS		method	limit/base	current	history1	history2
Particles >4µm		ASTM D7647	>20000	▲ **64695**	⬢ 225298	⬢ 196067
Particles >6µm		ASTM D7647	>5000	▲ **7007**	⬢ 88398	⬢ 42978
Particles >14µm		ASTM D7647	>640	**166**	▲ 1089	247
Particles >21µm		ASTM D7647	>160	**28**	103	40
Particles >38µm		ASTM D7647	>40	**2**	1	3
Particles >71µm		ASTM D7647	>10	**2**	1	0
Oil Cleanliness		ISO 4406 (c)	>21/19/16	▲ **23/20/15**	⬢ 25/24/17	⬢ 25/23/15

FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414		**3.3**	4.	5.
Acid Number (AN)	mg KOH/g	ASTM D8045		**0.57**	0.632	0.643

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	>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	217.7	**211**	▲ 210.0	158.3

SAMPLE IMAGES	method	limit/base	current	history1	history2
Color					
Bottom					

ANAB ACCREDITED ISO/IEC 17025 TESTING LABORATORY
Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : PLSI2295488 **Received** : 25 Aug 2023
Lab Number : 05935316 **Diagnosed** : 28 Aug 2023
Unique Number : 10620587 **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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