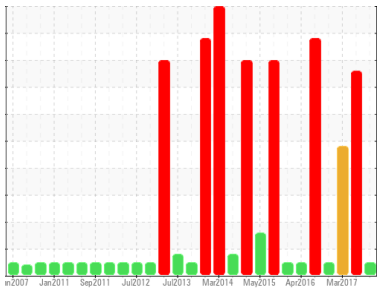
OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL

Area
TM 11
Machine Id
TM 11 - 3 SLUSH MAKER REDUCER
Component
Gearbox
Fluid
ROYAL PURPLE SYNERGY 90/220 (--- GAL)

DIAGNOSIS

Recommendation
Resample at the next service interval to monitor.

Wear
All component wear rates are normal.

Contamination
There is no indication of any contamination in the component. The amount and size of particulates present in the system is acceptable.

Fluid Condition
The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**RP188053**	RP185431	RP183347
Sample Date		Client Info		**26 Sep 2018**	18 Aug 2017	01 Mar 2017
Machine Age	hrs	Client Info		**0**	0	0
Oil Age	hrs	Client Info		**0**	0	0
Oil Changed		Client Info		**N/A**	N/A	N/A
Sample Status				**NORMAL**	SEVERE	SEVERE

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>200	**7**	27	▲ 269
Chromium	ppm	ASTM D5185m	>15	**0**	<1	1
Nickel	ppm	ASTM D5185m	>15	**0**	<1	1
Titanium	ppm	ASTM D5185m		**0**	0	<1
Silver	ppm	ASTM D5185m		**<1**	<1	0
Aluminum	ppm	ASTM D5185m	>25	**<1**	0	<1
Lead	ppm	ASTM D5185m	>100	**0**	0	1
Copper	ppm	ASTM D5185m	>200	**3**	2	5
Tin	ppm	ASTM D5185m	>25	**0**	0	0
Antimony	ppm	ASTM D5185m		**6**	0	4
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		**<1**	<1	3
Barium	ppm	ASTM D5185m		**<1**	0	<1
Molybdenum	ppm	ASTM D5185m		**0**	<1	0
Manganese	ppm	ASTM D5185m		**<1**	<1	3
Magnesium	ppm	ASTM D5185m		**1**	<1	0
Calcium	ppm	ASTM D5185m		**18**	18	10
Phosphorus	ppm	ASTM D5185m	370	**136**	130	70
Zinc	ppm	ASTM D5185m		**157**	154	5

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>50	**<1**	2	4
Sodium	ppm	ASTM D5185m		**2**	<1	<1
Potassium	ppm	ASTM D5185m	>20	**<1**	<1	<1
Water	%	ASTM D6304	>0.2	**0.006**	0.007	⬢ 2.35
ppm Water	ppm	ASTM D6304	>2000	**60**	70	⬢ 23500

FLUID CLEANLINESS		method	limit/base	current	history1	history2
Particles >4µm		ASTM D7647	>20000	**12030**	⬢ 270184	692
Particles >6µm		ASTM D7647	>5000	**2886**	⬢ 83642	377
Particles >14µm		ASTM D7647	>640	**263**	⬢ 2152	64
Particles >21µm		ASTM D7647	>160	**73**	⬢ 274	21
Particles >38µm		ASTM D7647	>40	**2**	▲ 9	3
Particles >71µm		ASTM D7647	>10	**0**	▲ 7	0
Oil Cleanliness		ISO 4406 (c)	>21/19/16	**21/19/15**	⬢ 25/24/18	17/16/13

FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045	1.33	**0.300**	0.339	0.261

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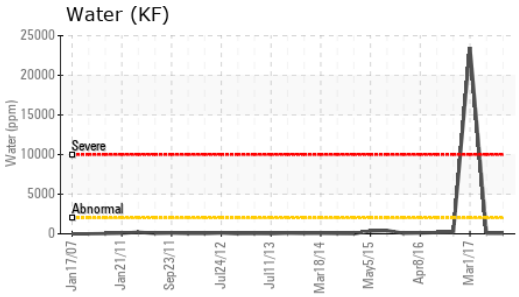
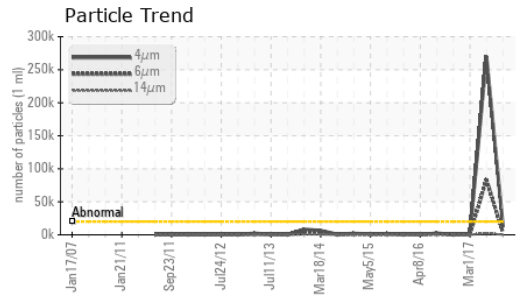
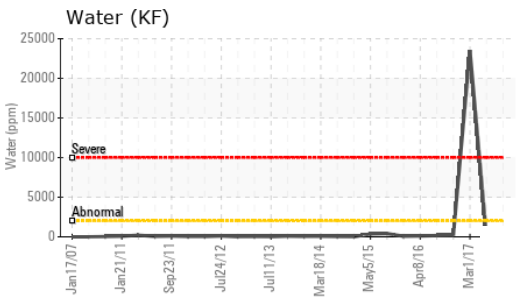
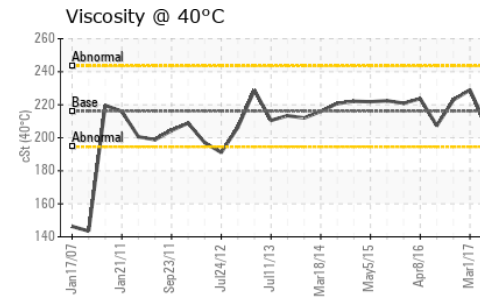
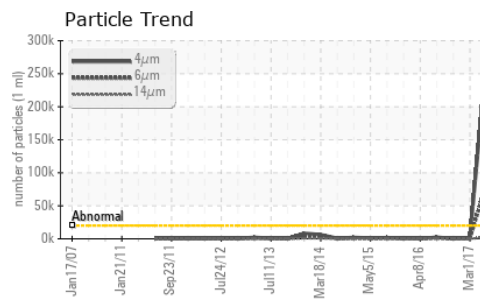




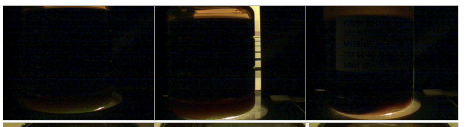




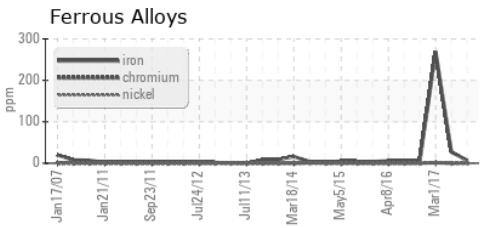


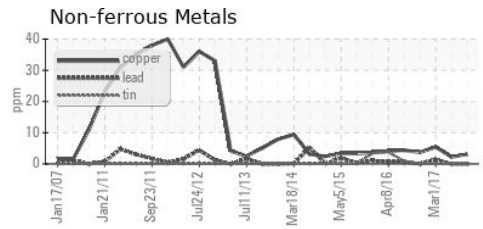
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	VLITE	LIGHT
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Debris	scalar	*Visual	NONE	**VLITE**	NONE	NONE
Sand/Dirt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

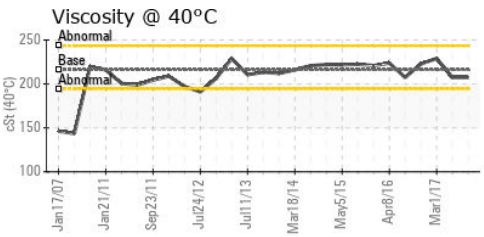
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	216.1	**207.2**	207.3	229.0

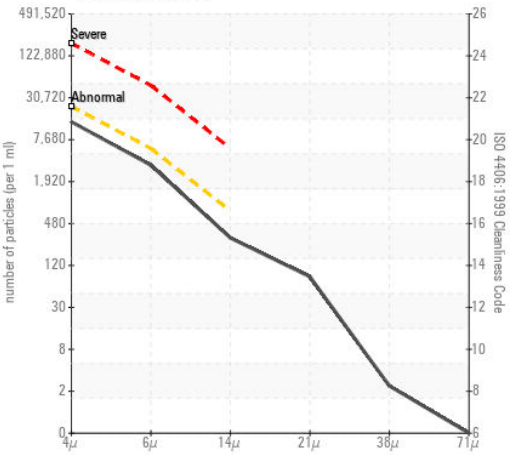
SAMPLE IMAGES	method	limit/base	current	history1	history2
Color					
Bottom					

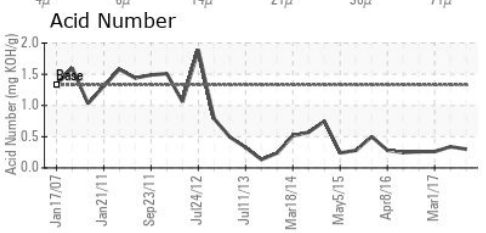
GRAPHS











Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : RP188053
Lab Number : 04560055
Unique Number : 8343913
Test Package : IND 2 (Additional Tests: PrtCount)

Received : 27 Sep 2018
Diagnosed : 29 Sep 2018
Diagnostician : Doug Bogart

Certificate L2367

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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