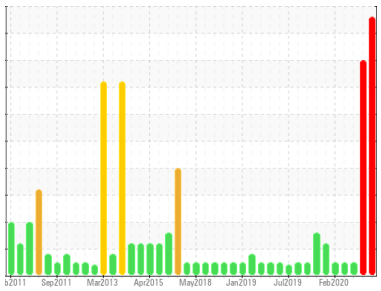
PROBLEM SUMMARY

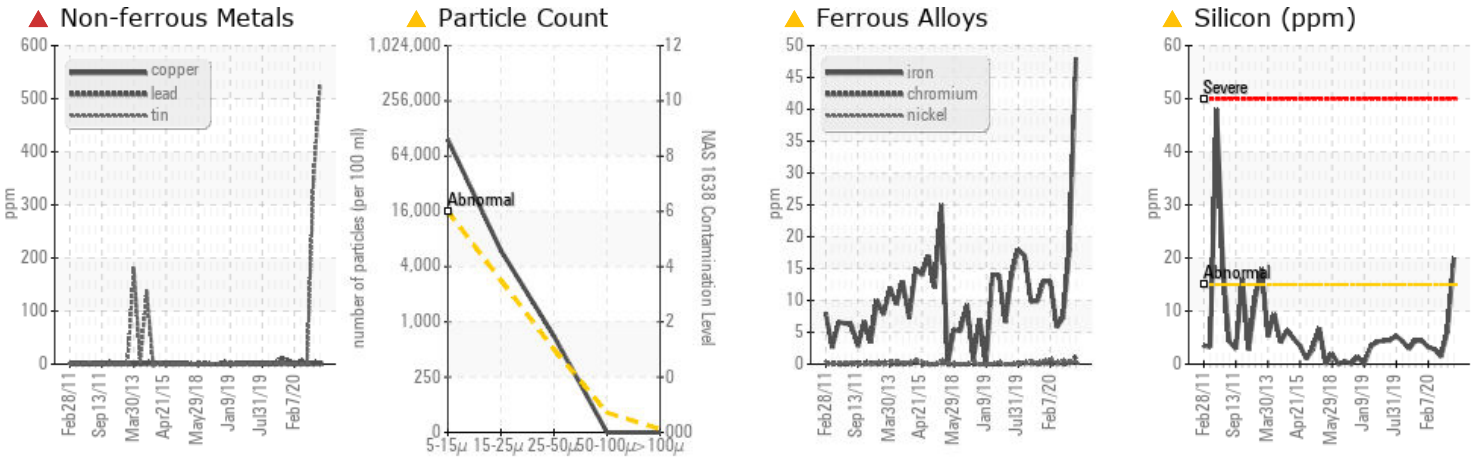
Sample Rating Trend



WEAR

Area
Turret
Machine Id
WHPU - LP Manual Valve (S/N Sample Tag: WH-586943)
Component
Hydraulic System
Fluid
CASTROL TRANSAQUA HT (--- GAL)

COMPONENT CONDITION SUMMARY



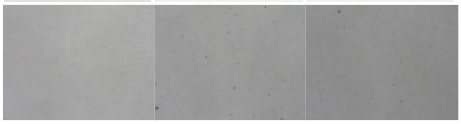
RECOMMENDATION

Check seals and/or filters for points of contaminant entry. We recommend either performing an oil change or oil filtration. We cannot recommend specific action as we have limited information with regards to reservoir capacity and/or lubricant type. 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. We recommend an early resample to monitor this condition. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample.

PROBLEMATIC TEST RESULTS

Sample Status				**SEVERE**	SEVERE	NORMAL
Iron	ppm	ASTM D5185(m)	>20	▲ **48**	● 18	7
Tin	ppm	ASTM D5185(m)	>10	▲ **523**	▲ 348	<1
Silicon	ppm	ASTM D5185(m)	>15	▲ **20**	6	1
Particles 5-15µm	count	NAS 1638	>15999	▲ **97000**	▲ 97000	12000
Particles 15-25µm	count	NAS 1638	>2849	▲ **6000**	▲ 6000	1500
Particles 25-50µm	count	NAS 1638	>505	▲ **700**	▲ 700	200
NAS 1638	Class	NAS 1638	>6	▲ **9**	▲ 9	6

PrtFilter



Customer Id: TERHAM
Sample No.: PC0030432
Lab Number: 02368980
Test Package: IND 2

To manage this report scan the QR code

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Kevin.Marson@wearcheck.com

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Gloria Gonzalez +1 (289)291-4643 x4643
gloria.gonzalez@wearcheck.com

RECOMMENDED ACTIONS

Action	Status	Date	Done By	Description
Resample	---	---	?	We recommend an early resample to monitor this condition.
Information Required	---	---	?	NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample.
Check Breathers	---	---	?	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.
Check Seals	---	---	?	Check seals and/or filters for points of contaminant entry.
Filter Fluid	---	---	?	We recommend either performing an oil change or oil filtration. We cannot recommend specific action as we have limited information with regards to reservoir capacity and/or lubricant type.

HISTORICAL DIAGNOSIS

WEAR

04 Jun 2020 Diag: Kevin Marson

We recommend either performing an oil change or oil filtration. We cannot recommend specific action as we have limited information with regards to reservoir capacity and/or lubricant type. Confirm the source of the lubricant being utilized for top-up/fill. We recommend an early resample to monitor this condition. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample.Tin ppm levels are severe. Iron ppm levels are noted. Particles 15-25µm are abnormally high. Particles 25-50µm are abnormally high. Particles 5-15µm are abnormally high. The system cleanliness is above the acceptable limit for the target SAE AS4059 (replaces NAS 1638) cleanliness code. Additive levels indicate the addition of a different brand, or type of oil. The AN level is acceptable for this fluid. The pH level of this fluid is within the acceptable limits. The reserve alkalinity of this fluid is acceptable. The water concentration level is acceptable for this fluid. The oil is no longer serviceable as a result of the abnormal and/or severe wear.

view report

NORMAL

06 May 2020 Diag: Kevin Marson

Confirm the source of the lubricant being utilized for top-up/fill. Resample at the next service interval to monitor. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample.All component wear rates are normal. The system cleanliness is acceptable for your target SAE AS4059 (replaces NAS 1638) cleanliness code. There is no indication of any contamination in the oil. The system and fluid cleanliness is acceptable. Additive levels indicate the addition of a different brand, or type of oil. The AN level is acceptable for this fluid. The pH level of this fluid is within the acceptable limits. The reserve alkalinity of this fluid is acceptable. The water concentration level is acceptable for this fluid. The condition of the oil is suitable for further service.

view report

NORMAL

03 Mar 2020 Diag: Kevin Marson

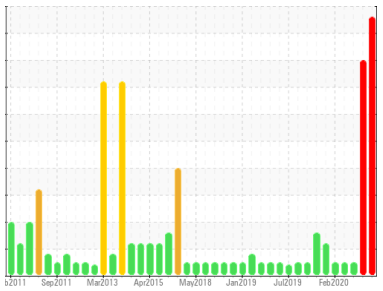
Resample at the next service interval to monitor. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample.All component wear rates are normal. The system cleanliness is acceptable for your target SAE AS4059 (replaces NAS 1638) cleanliness code. There is no indication of any contamination in the oil. The system and fluid cleanliness is acceptable. The AN level is acceptable for this fluid. The pH level of this fluid is within the acceptable limits. The reserve alkalinity of this fluid is acceptable. The water concentration level is acceptable for this fluid. The condition of the oil is suitable for further service.

view report

OIL ANALYSIS REPORT

Area
Turret
Machine Id
WHPU - LP Manual Valve (S/N Sample Tag: WH-586943)
Component
Hydraulic System
Fluid
CASTROL TRANSAQUA HT (--- GAL)

Sample Rating Trend



WEAR

DIAGNOSIS

Recommendation
Check seals and/or filters for points of contaminant entry. We recommend either performing an oil change or oil filtration. We cannot recommend specific action as we have limited information with regards to reservoir capacity and/or lubricant type. 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. We recommend an early resample to monitor this condition. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample.

Wear
Tin ppm levels are severe. Iron ppm levels are abnormal.

Contamination
Silicon ppm levels are abnormally high. Particles 15-25µm are abnormally high. Particles 25-50µm are abnormally high. Particles 5-15µm are abnormally high. Elemental level of silicon (Si) above normal indicating ingress of seal material. The system cleanliness is above the acceptable limit for the target SAE AS4059 (replaces NAS 1638) cleanliness code.

Fluid Condition
The AN level is acceptable for this fluid. The pH level of this fluid is within the acceptable limits. The reserve alkalinity of this fluid is acceptable. The water concentration level is acceptable for this fluid. The oil is no longer serviceable as a result of the abnormal and/or severe wear.

Particle Filter (Magn: 100 x)

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**PC0030432**	PC0029742	PC
Sample Date		Client Info		**23 Jul 2020**	04 Jun 2020	06 May 2020
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				**SEVERE**	SEVERE	NORMAL

WEAR METALS		method	limit/base	current	history1	history2
PQ		ASTM D8184*		**0**	0	80
Iron	ppm	ASTM D5185(m)	>20	▲ **48**	18	7
Chromium	ppm	ASTM D5185(m)	>10	**1**	<1	<1
Nickel	ppm	ASTM D5185(m)	>10	**<1**	<1	<1
Titanium	ppm	ASTM D5185(m)		**<1**	<1	<1
Silver	ppm	ASTM D5185(m)		**<1**	<1	1
Aluminum	ppm	ASTM D5185(m)	>10	**<1**	<1	<1
Lead	ppm	ASTM D5185(m)	>20	**1**	3	2
Copper	ppm	ASTM D5185(m)	>20	**<1**	<1	<1
Tin	ppm	ASTM D5185(m)	>10	▲ **523**	▲ 348	<1
Antimony	ppm	ASTM D5185(m)		**0**	1	1
Vanadium	ppm	ASTM D5185(m)		**<1**	<1	<1
Beryllium	ppm	ASTM D5185(m)		**0**	0	0
Cadmium	ppm	ASTM D5185(m)		**<1**	<1	<1

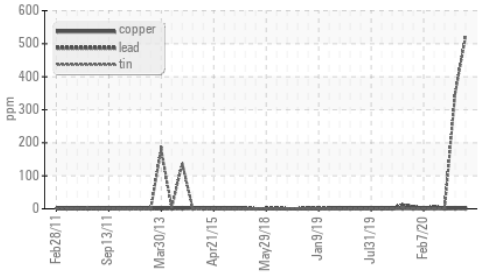
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185(m)		**193**	204	194
Barium	ppm	ASTM D5185(m)		**2**	<1	<1
Molybdenum	ppm	ASTM D5185(m)		**<1**	<1	<1
Manganese	ppm	ASTM D5185(m)		**<1**	<1	<1
Magnesium	ppm	ASTM D5185(m)		**<1**	2	1
Calcium	ppm	ASTM D5185(m)		**5**	7	14
Phosphorus	ppm	ASTM D5185(m)	145	**175**	177	209
Zinc	ppm	ASTM D5185(m)		**5**	7	24
Sulfur	ppm	ASTM D5185(m)		**22**	35	27
Lithium	ppm	ASTM D5185(m)		**<1**	<1	<1

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m)	>15	▲ **20**	6	1
Sodium	ppm	ASTM D5185(m)	>650	**671**	678	664
Potassium	ppm	ASTM D5185(m)	>20	**3**	3	0
Water	%	ASTM D6304*	>60	**52.9**	49.4	48.0
ppm Water	ppm	ASTM D6304*	>600000	**529000**	494000	480000

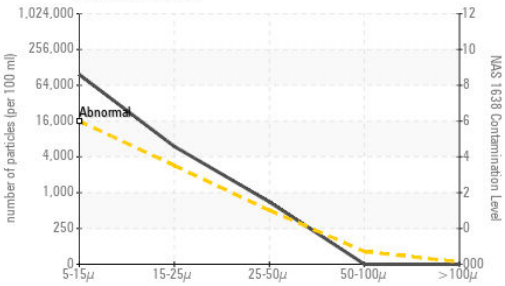
FLUID CLEANLINESS		method	limit/base	current	history1	history2
Particles 5-15µm	count	NAS 1638	>15999	▲ **97000**	▲ 97000	12000
Particles 15-25µm	count	NAS 1638	>2849	▲ **6000**	▲ 6000	1500
Particles 25-50µm	count	NAS 1638	>505	▲ **700**	▲ 700	200
Particles 50-100µm	count	NAS 1638	>89	**0**	0	0
Particles >100µm	count	NAS 1638	>15	**0**	0	0
NAS 1638	Class	NAS 1638	>6	▲ **9**	▲ 9	6

OIL ANALYSIS REPORT

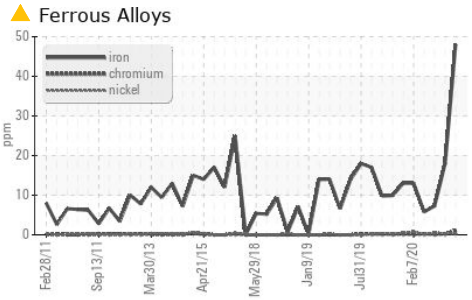
Non-ferrous Metals



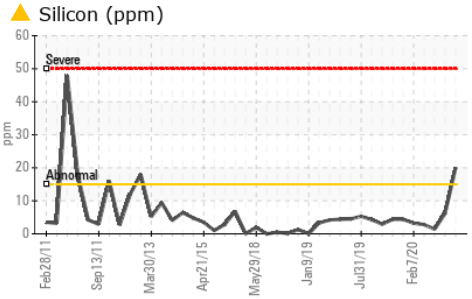
Particle Count



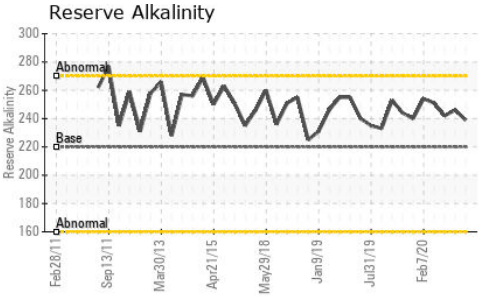
Ferrous Alloys



Silicon (ppm)



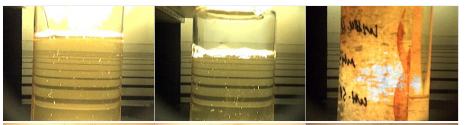
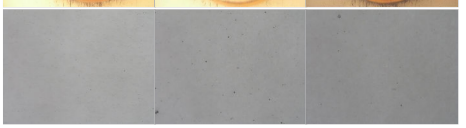
Reserve Alkalinity



FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D974*	3.35	**2.49**	1.40	2.40
Alkiline Reserve (Oils)	ml KOH/g	ASTM D1121*	220	**239**	246	242

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*	>60	**>10%**	>10%	>10%
Free Water	scalar	Visual*		**NEG**	NEG	NEG

FLUID PROPERTIES		method	limit/base	current	history1	history2
pH	Scale 0-14	ASTM D1287*		**8.49**	8.72	8.64
Visc @ 40°C	cSt	ASTM D7279(m)	2.3	**2.3**	2.3	2.4
Visc @ 100°C	cSt	ASTM D7279(m)		**---**	0.8	---

SAMPLE IMAGES	method	limit/base	current	history1	history2
Color					
Bottom					
PrtFilter					

ISO 17025:2017 Accredited Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : PC0030432 **Received** : 06 Aug 2020
Lab Number : 02368980 **Tested** : 11 Aug 2020
Unique Number : 5084427 **Diagnosed** : 11 Aug 2020 - Kevin Marson
Test Package : IND 2 (Additional Tests: KF, KV100, pH, PQ, PrtCountNAS, PrtFilter, PrtFilterPrep, ReserveAlk, TAN)

To discuss this sample report, contact Customer Service at 1-800-268-2131.
Test denoted (*) outside scope of accreditation, (m) method modified, (e) tested at external lab.
Validity of results and interpretation are based on the sample and information as supplied.

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