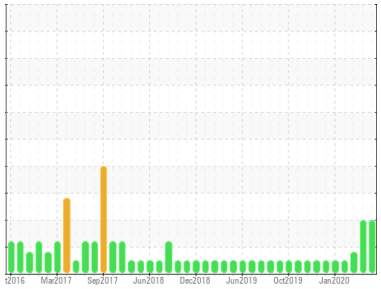
PROBLEM SUMMARY

Sample Rating Trend

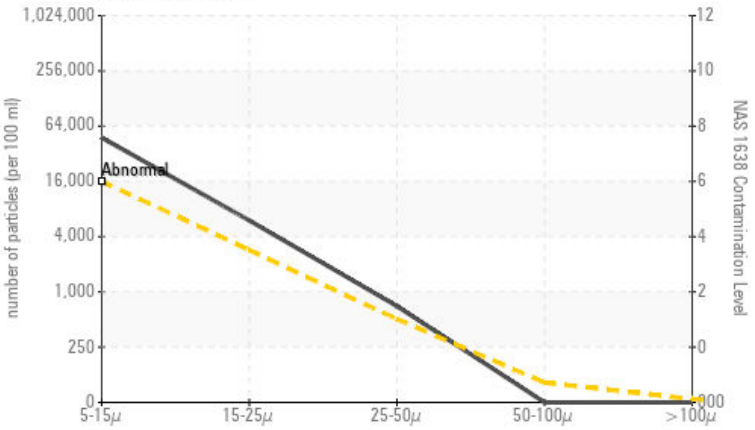


WEAR

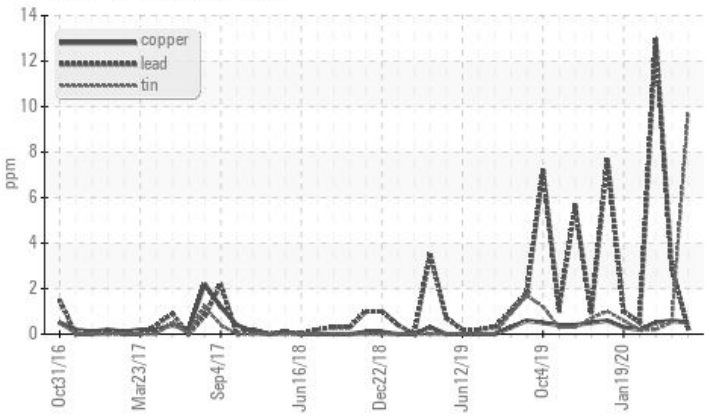
Area
Turret
Machine Id
WHPU - HP 1 Accumulator Bank/HP Umbilical Supply (S/N Sample Tag XX-58600-MV1/11)
Component
Hydraulic System
Fluid
CASTROL TRANSAQUA HT (4500 LTR)

COMPONENT CONDITION SUMMARY

Particle Count



Non-ferrous Metals



RECOMMENDATION

We advise that you perform a filter service, and use off-line filtration to improve the cleanliness of the system fluid. We recommend an early resample to monitor this condition. Please contact your representative for information regarding the proper sampling kits for your service. NOTE: We recommend using MAR 3 test kits, this testkit includes Analytical Ferrography which provides a detailed morphological analysis of wear particles present in the fluid.

PROBLEMATIC TEST RESULTS

Sample Status				**ABNORMAL**	ABNORMAL	ABNORMAL
Tin	ppm	ASTM D5185(m)	>10	▲ **10**	<1	<1
Particles 5-15µm	count	NAS 1638	>15999	▲ **48000**	6000	6000
Particles 15-25µm	count	NAS 1638	>2849	▲ **6000**	1500	1500
Particles 25-50µm	count	NAS 1638	>505	▲ **700**	200	200
NAS 1638	Class	NAS 1638	>6	▲ **8**	6	6
PrtFilter						

Customer Id: TERHAM
Sample No.: PC
Lab Number: 02359394
Test Package: MAR 2

To manage this report scan the QR code

To discuss the diagnosis or test data:
Kevin Marson +1 (289)291-4644 x4644
Kevin.Marson@wearcheck.com

To change component or sample information:
Gloria Gonzalez +1 (289)291-4643 x4643
gloria.gonzalez@wearcheck.com

RECOMMENDED ACTIONS

Action	Status	Date	Done By	Description
Change Filter	---	---	?	We advise that you perform a filter service, and use off-line filtration to improve the cleanliness of the system fluid.
Resample	---	---	?	We recommend an early resample to monitor this condition.
Contact Required	---	---	?	Please contact your representative for information regarding the proper sampling kits for your service.
Alert	---	---	?	NOTE: We recommend using MAR 3 test kits,
Filter Fluid	---	---	?	We advise that you perform a filter service, and use off-line filtration to improve the cleanliness of the system fluid.

HISTORICAL DIAGNOSIS

24 Mar 2020 Diag: Kevin Marson

WEAR

We recommend an early resample to monitor this condition.PQ levels are abnormal. The high ferrous density (PQ) index indicates that abnormal wear is occurring. 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

23 Feb 2020 Diag: Kevin Marson

WEAR

We recommend an early resample to monitor this condition.Lead ppm levels are abnormal. A sharp increase in the lead level is noted. 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

19 Jan 2020 Diag: Kevin Marson

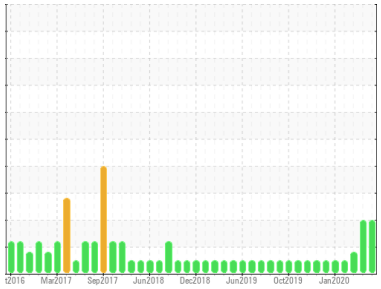
NORMAL

Resample at the next service interval to monitor.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

Sample Rating Trend



WEAR

Area
Turret
Machine Id
WHPU - HP 1 Accumulator Bank/HP Umbilical Supply (S/N Sample Tag XX-58600-MV1/11)
Component
Hydraulic System
Fluid
CASTROL TRANSAQUA HT (4500 LTR)

DIAGNOSIS

Recommendation

We advise that you perform a filter service, and use off-line filtration to improve the cleanliness of the system fluid. We recommend an early resample to monitor this condition. Please contact your representative for information regarding the proper sampling kits for your service. NOTE: We recommend using MAR 3 test kits, this testkit includes Analytical Ferrography which provides a detailed morphological analysis of wear particles present in the fluid.

Wear

Tin ppm levels are abnormal.

Contamination

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.

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 still serviceable provided that the contaminant(s) can be reduced to acceptable levels.

Particle Filter (Magn: 100 x)

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**PC**	PC0023111	PC
Sample Date		Client Info		**08 Jun 2020**	24 Mar 2020	23 Feb 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				**ABNORMAL**	ABNORMAL	ABNORMAL

WEAR METALS		method	limit/base	current	history1	history2
PQ		ASTM D8184*		**0**	▲ 51	65
Iron	ppm	ASTM D5185(m)	>20	**12**	7	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	▲ 13
Copper	ppm	ASTM D5185(m)	>20	**<1**	<1	<1
Tin	ppm	ASTM D5185(m)	>10	▲ **10**	<1	<1
Antimony	ppm	ASTM D5185(m)		**<1**	0	<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

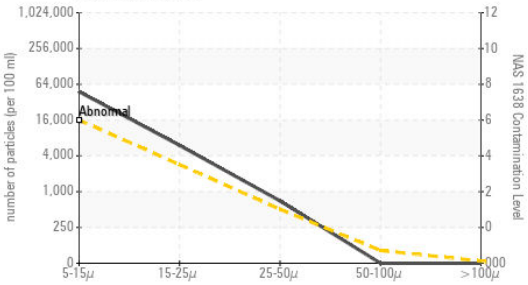
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185(m)		**193**	192	202
Barium	ppm	ASTM D5185(m)		**<1**	1	<1
Molybdenum	ppm	ASTM D5185(m)		**1**	<1	4
Manganese	ppm	ASTM D5185(m)		**<1**	<1	<1
Magnesium	ppm	ASTM D5185(m)		**1**	2	2
Calcium	ppm	ASTM D5185(m)		**2**	14	20
Phosphorus	ppm	ASTM D5185(m)	145	**140**	172	188
Zinc	ppm	ASTM D5185(m)		**1**	10	16
Sulfur	ppm	ASTM D5185(m)		**31**	35	30
Lithium	ppm	ASTM D5185(m)		**<1**	<1	<1

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m)	>15	**3**	4	3
Sodium	ppm	ASTM D5185(m)	>650	**671**	643	712
Potassium	ppm	ASTM D5185(m)	>20	**1**	3	5
Water	%	ASTM D6304*	>60	**49.9**	49.5	49.6
ppm Water	ppm	ASTM D6304*	>600000	**499000**	495000	496000

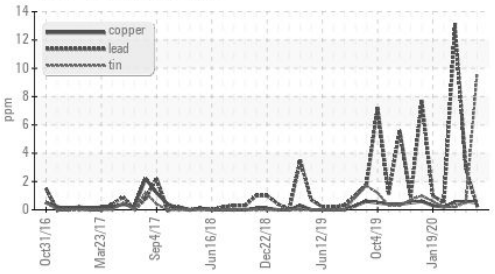
FLUID CLEANLINESS		method	limit/base	current	history1	history2
Particles 5-15µm	count	NAS 1638	>15999	▲ **48000**	6000	6000
Particles 15-25µm	count	NAS 1638	>2849	▲ **6000**	1500	1500
Particles 25-50µm	count	NAS 1638	>505	▲ **700**	200	200
Particles 50-100µm	count	NAS 1638	>89	**0**	0	0
Particles >100µm	count	NAS 1638	>15	**0**	0	0
NAS 1638	Class	NAS 1638	>6	▲ **8**	6	6

OIL ANALYSIS REPORT

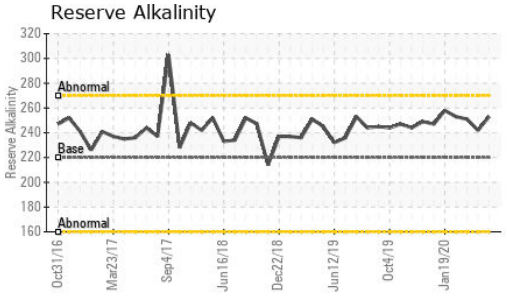
Particle Count



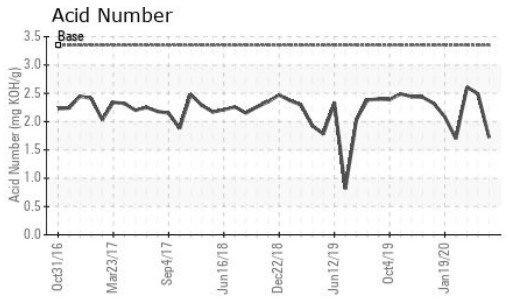
Non-ferrous Metals



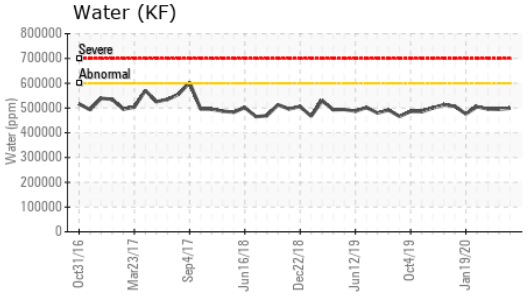
Reserve Alkalinity



Acid Number



Water (KF)

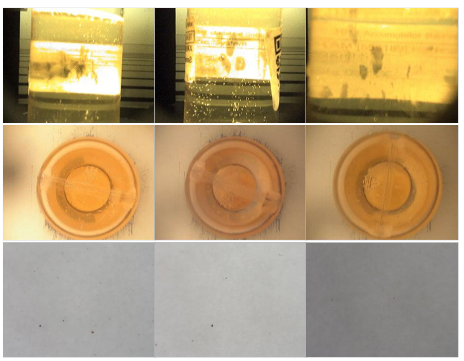


FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D974*	3.35	**1.72**	2.49	2.61
Alkiline Reserve (Oils)	ml KOH/g	ASTM D1121*	220	**253**	242	251

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*		**8.59**	8.70	8.50
Visc @ 40°C	cSt	ASTM D7279(m)	2.3	**2.4**	2.4	2.4
Visc @ 100°C	cSt	ASTM D7279(m)		**---**	---	0.9

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. : PC
Lab Number : 02359394
Unique Number : 5058831
Test Package : MAR 2 (Additional Tests: KF, KV100, pH, PQ, PrtCountNAS, PrtFilter, PrtFilterPrep, ReserveAlk)
Received : 12 Jun 2020
Diagnosed : 16 Jun 2020
Diagnostician : Kevin Marson

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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