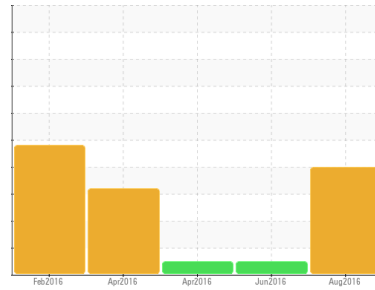




PROBLEM SUMMARY

Sample Rating Trend

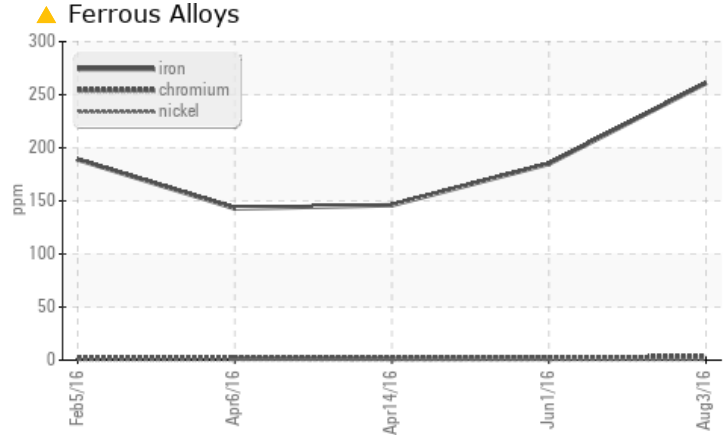
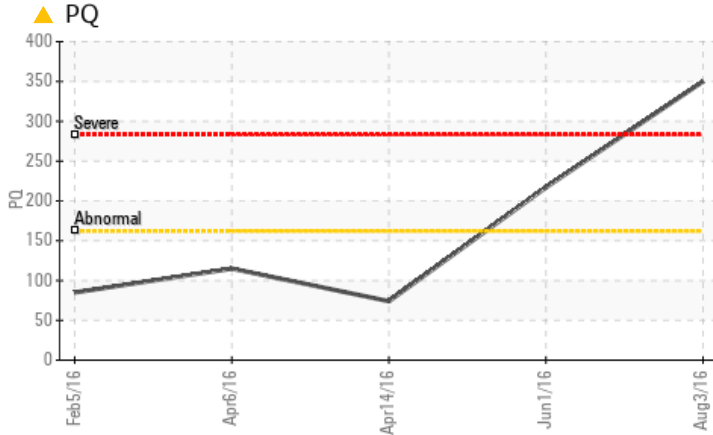


WEAR



Area
CATERPILLAR TUNNELING [27100]
 Machine Id
2-GB1.2 MD GEARBOX #2
 Component
Gearbox
 Fluid
SHELL OMALA S4 GX 320 (30 LTR)

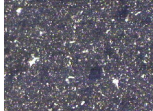
COMPONENT CONDITION SUMMARY



RECOMMENDATION

We advise that you check for visible metal particles in the oil. We recommend that you drain the oil from the component if this has not already been done. We recommend an early resample to monitor this condition.

PROBLEMATIC TEST RESULTS

Sample Status			ABNORMAL	NORMAL	NORMAL	
PQ		ASTM D8184*	>162	▲ 350	217	74
Iron	ppm	ASTM D5185(m)	>250	▲ 261	185	146
White Metal	scalar	Visual*	NONE	▲ VLITE	NONE	NONE
PrtFilter					no image	no image

Customer Id: CUSANY
 Sample No.: WC1234567
 Lab Number: 01234567
 Test Package: IND 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 Fluid	---	---	?	We recommend that you drain the oil from the component if this has not already been done.
Resample	---	---	?	We recommend an early resample to monitor this condition.
Check For Visual Metal	---	---	?	We advise that you check for visible metal particles in the oil.

HISTORICAL DIAGNOSIS

01 Jun 2016 Diag: Kevin Marson

NORMAL



Resample at the next service interval to monitor. All component wear rates are normal. There is no indication of any contamination in the component. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

view report



14 Apr 2016 Diag: Kevin Marson

NORMAL



Resample at the next service interval to monitor. All component wear rates are normal. The water content is negligible. There is no indication of any contamination in the component. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

view report



06 Apr 2016 Diag: Kevin Marson

WATER



We advise that you check for the source of water entry. Check seals and/or filters for points of contaminant entry. We advise that you follow the water drain-off procedure for this component. We recommend an early resample to monitor this condition. All component wear rates are normal. There is a high concentration of water present in the oil. The AN level is acceptable for this fluid. The oil is no longer serviceable due to the presence of contaminants.

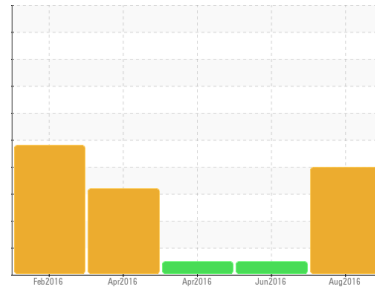
view report





OIL ANALYSIS REPORT

Sample Rating Trend



WEAR



Area
CATERPILLAR TUNNELING [27100]
 Machine Id
2-GB1.2 MD GEARBOX #2

Component
Gearbox
 Fluid
SHELL OMALA S4 GX 320 (30 LTR)

DIAGNOSIS

Recommendation

We advise that you check for visible metal particles in the oil. We recommend that you drain the oil from the component if this has not already been done. We recommend an early resample to monitor this condition.

Wear

PQ PQ levels are abnormal. Iron ppm levels are abnormal. Light concentration of visible metal present. Gear wear is indicated. The high ferrous density (PQ) index indicates that abnormal wear is occurring.

Contamination

There is no indication of any contamination in the component.

Fluid Condition

The AN level is acceptable for this fluid. The oil is no longer serviceable as a result of the abnormal and/or severe wear.

SAMPLE INFORMATION

method	limit/base	current	history1	history2
Sample Number	Client Info	WC963087	WC963039	WC942382
Sample Date	Client Info	03 Aug 2016	01 Jun 2016	14 Apr 2016
Machine Age	hrs	1335	980	0
Oil Age	hrs	0	620	0
Oil Changed	Client Info	N/A	N/A	N/A
Sample Status		ABNORMAL	NORMAL	NORMAL

WEAR METALS

method	limit/base	current	history1	history2		
PQ	ASTM D8184*	>162	▲ 350	217	74	
Iron	ppm	ASTM D5185(m)	>250	▲ 261	185	146
Chromium	ppm	ASTM D5185(m)		3	2	2
Nickel	ppm	ASTM D5185(m)		<1	<1	<1
Titanium	ppm	ASTM D5185(m)		0	0	0
Silver	ppm	ASTM D5185(m)		0	0	0
Aluminum	ppm	ASTM D5185(m)		<1	<1	<1
Lead	ppm	ASTM D5185(m)		0	0	0
Copper	ppm	ASTM D5185(m)	>75	<1	<1	<1
Tin	ppm	ASTM D5185(m)		0	0	0
Antimony	ppm	ASTM D5185(m)		0	0	0
Vanadium	ppm	ASTM D5185(m)		0	0	0
Beryllium	ppm	ASTM D5185(m)		0	0	0
Cadmium	ppm	ASTM D5185(m)		0	0	0

ADDITIVES

method	limit/base	current	history1	history2		
Boron	ppm	ASTM D5185(m)		19	22	17
Barium	ppm	ASTM D5185(m)		<1	0	0
Molybdenum	ppm	ASTM D5185(m)		0	0	0
Manganese	ppm	ASTM D5185(m)		4	3	2
Magnesium	ppm	ASTM D5185(m)		0	0	<1
Calcium	ppm	ASTM D5185(m)		10	10	11
Phosphorus	ppm	ASTM D5185(m)		410	414	430
Zinc	ppm	ASTM D5185(m)		10	9	9
Sulfur	ppm	ASTM D5185(m)		4986	4986	5304
Lithium	ppm	ASTM D5185(m)		<1	<1	<1

CONTAMINANTS

method	limit/base	current	history1	history2		
Silicon	ppm	ASTM D5185(m)		11	13	13
Sodium	ppm	ASTM D5185(m)		2	<1	0
Potassium	ppm	ASTM D5185(m)	>20	0	<1	1

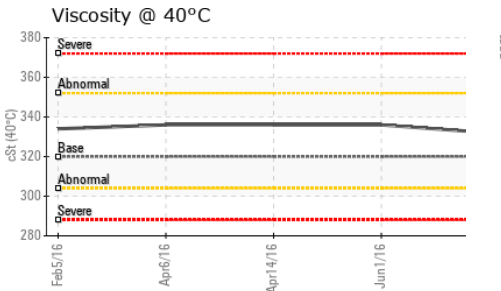
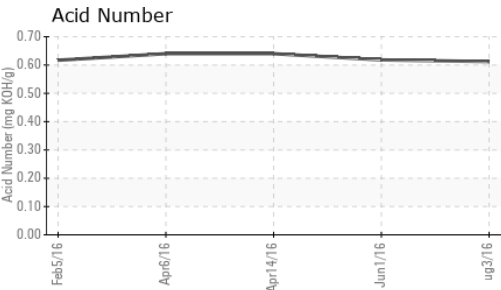
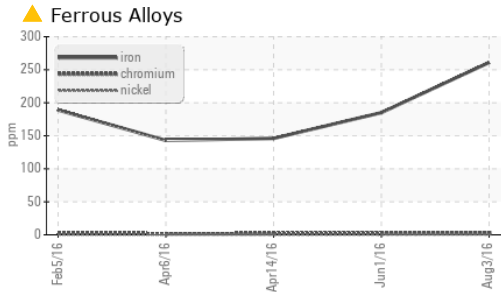
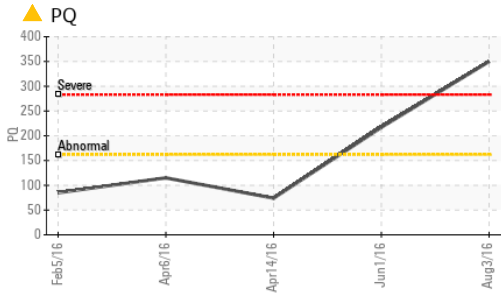
FLUID DEGRADATION

method	limit/base	current	history1	history2		
Acid Number (AN)	mg KOH/g	ASTM D974*		0.612	0.618	0.64

Particle Filter (Magn: 100 x)



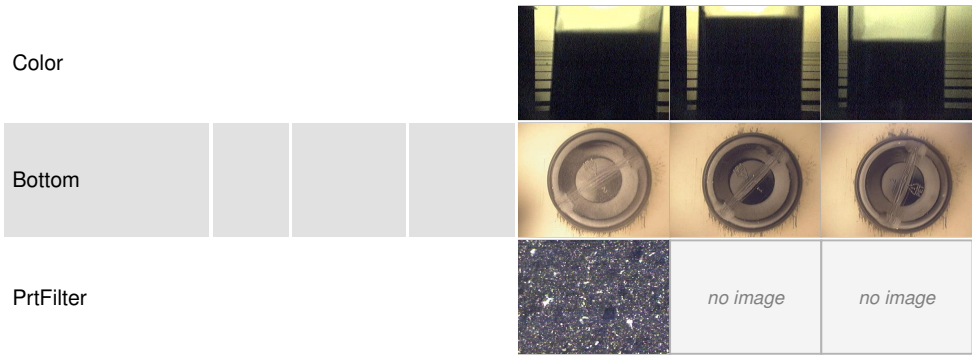
OIL ANALYSIS REPORT



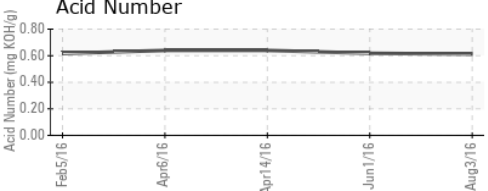
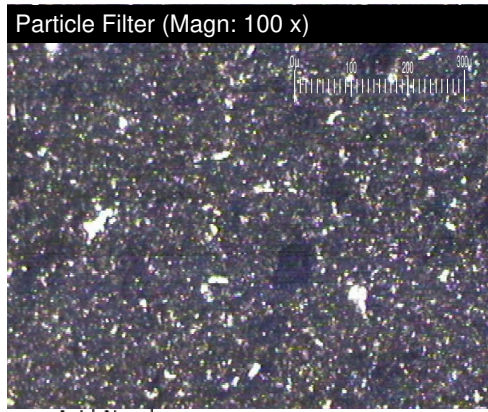
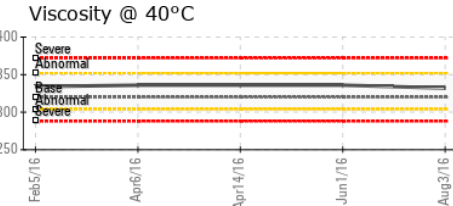
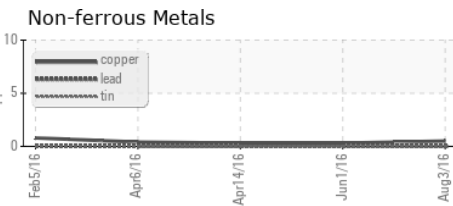
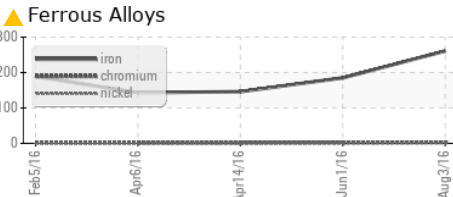
VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	Visual*	NONE	▲ VLITE	NONE
Yellow Metal	scalar	Visual*	NONE	NONE	NONE
Precipitate	scalar	Visual*	NONE	NONE	NONE
Silt	scalar	Visual*	NONE	VLITE	NONE
Debris	scalar	Visual*	NONE	NONE	VLITE
Sand/Dirt	scalar	Visual*	NONE	NONE	NONE
Appearance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

FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D7279(m)	320	332	336

SAMPLE IMAGES	method	limit/base	current	history1	history2
---------------	--------	------------	---------	----------	----------



GRAPHS



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : WC1234567 **Received** : 08 Aug 2016
Lab Number : 01234567 **Diagnosed** : 10 Aug 2016
Unique Number : 12345678 **Diagnostician** : Kevin Marson
Test Package : IND 2 (Additional Tests: BottomAnalysis, FILTERPATCH, TAN Man)

Cusany Logistics Inc.
 1212 Industrial Place
 Centerville, OH
 USA 75900
 Contact: Jim Leduc
 jim.leduc@cusanylogisticsinc.com
 T: (305)555-1212
 F: (305)555-1222

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.