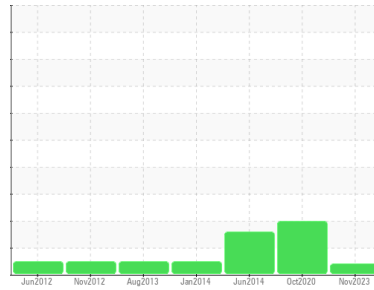




PROBLEM SUMMARY

Area
Store 5 - Cross Lanes
 Machine Id
JOHN DEERE Z-185
 Component
Hydraulic System
 Fluid
HITACHI HYDRAULIC SUPER EX 46HN (36 GAL)

Sample Rating Trend

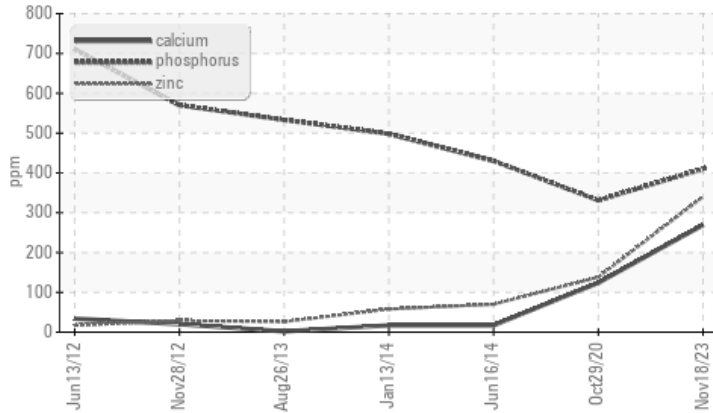


ADDITIVES



COMPONENT CONDITION SUMMARY

▲ Additives



RECOMMENDATION

Recommend drain oil if not already done. Reduce drain interval to 2000 hours or drain and flush and use recommended zinc free oil.

PROBLEMATIC TEST RESULTS

Sample Status				ABNORMAL	ABNORMAL	ABNORMAL
Zinc	ppm	ASTM D5185m	0	▲ 340	▲ 138	70

Customer Id: SECVAR
 Sample No.: LEC0040241
 Lab Number: 06015713
 Test Package: CONST



To manage this report scan the QR code

To discuss the diagnosis or test data:
 Jonathan Hester +1 919-379-4092 x4092
jhester@wearcheckusa.com

To change component or sample information:
 Customer Service +1 1-800-237-1369
customerservice@wearcheck.com

RECOMMENDED ACTIONS

Action	Status	Date	Done By	Description
Change Fluid	---	---	?	Recommend drain oil if not already done. Reduce drain interval to 2000 hours or drain and flush and use recommended zinc free oil.
Flush System	---	---	?	Recommend drain oil if not already done. Reduce drain interval to 2000 hours or drain and flush and use recommended zinc free oil.

HISTORICAL DIAGNOSIS

29 Oct 2020 Diag: Don Baldrige

WEAR



Recommend drain oil if not already done. Reduce drain interval to 2000 hours or drain and flush and use recommended zinc free oil. The iron level is abnormal. There is a high amount of silt (particulates < 14 microns in size) present in the oil. Zinc level above manufacturer's recommendations. The AN level is acceptable for this fluid.

[view report](#)



16 Jun 2014 Diag: Doug Bogart

ISO



No corrective action is recommended at this time. The filter change at the time of sampling has been noted. Resample at the next service interval to monitor. All component wear rates are normal. There is a high amount of particulates present in the oil. The AN level is acceptable for this fluid. The condition of the oil's additive package is suitable for further service.

[view report](#)



13 Jan 2014 Diag: Don Baldrige

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 amount and size of particulates present in the system is acceptable. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

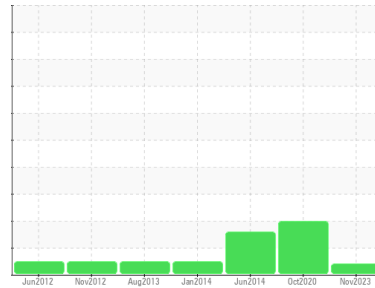
[view report](#)





OIL ANALYSIS REPORT

Sample Rating Trend



ADDITIVES



Area
Store 5 - Cross Lanes
 Machine Id
JOHN DEERE Z-185

Component
Hydraulic System
 Fluid
HITACHI HYDRAULIC SUPER EX 46HN (36 GAL)

DIAGNOSIS

▲ Recommendation

Recommend drain oil if not already done. Reduce drain interval to 2000 hours or drain and flush and use recommended zinc free oil.

Wear

All component wear rates are normal.

Contamination

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

▲ Fluid Condition

Zinc level above manufacturer's recommendations. The AN level is acceptable for this fluid.

SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		LEC0040241	LECP178215	LECP140953
Sample Date	Client Info		18 Nov 2023	29 Oct 2020	16 Jun 2014
Machine Age	hrs	Client Info	9112	7808	2651
Oil Age	hrs	Client Info	0	0	2651
Oil Changed	Client Info		Not Chngd	Not Chngd	Not Chngd
Sample Status			ABNORMAL	ABNORMAL	ABNORMAL

CONTAMINATION

	method	limit/base	current	history1	history2
Water	WC Method	>0.075	NEG	NEG	NEG

WEAR METALS

	method	limit/base	current	history1	history2	
PQ	ASTM D8184	>50	13	21	12.0	
Iron	ppm	ASTM D5185m	>32	19	▲ 48	6
Chromium	ppm	ASTM D5185m	>9	1	6	<1
Nickel	ppm	ASTM D5185m	>5	0	0	<1
Titanium	ppm	ASTM D5185m		0	<1	0
Silver	ppm	ASTM D5185m		0	0	0
Aluminum	ppm	ASTM D5185m	>9	<1	4	<1
Lead	ppm	ASTM D5185m	>28	0	0	0
Copper	ppm	ASTM D5185m	>50	7	8	10
Tin	ppm	ASTM D5185m	>5	0	0	2
Antimony	ppm	ASTM D5185m		---	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		4	4	<1
Barium	ppm	ASTM D5185m		0	0	0
Molybdenum	ppm	ASTM D5185m		2	2	0
Manganese	ppm	ASTM D5185m		<1	<1	0
Magnesium	ppm	ASTM D5185m		4	4	0
Calcium	ppm	ASTM D5185m		269	124	17
Phosphorus	ppm	ASTM D5185m	827	410	331	430
Zinc	ppm	ASTM D5185m	0	▲ 340	▲ 138	70
Sulfur	ppm	ASTM D5185m	13	1413	871	556

CONTAMINANTS

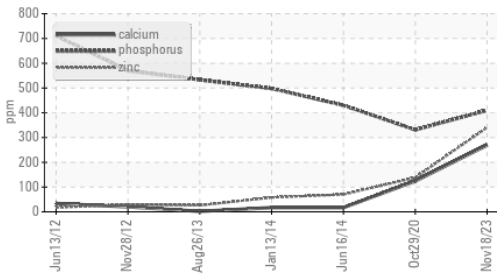
	method	limit/base	current	history1	history2	
Silicon	ppm	ASTM D5185m	>11	4	6	4
Sodium	ppm	ASTM D5185m	>21	<1	<1	<1
Potassium	ppm	ASTM D5185m	>20	0	1	1

FLUID CLEANLINESS

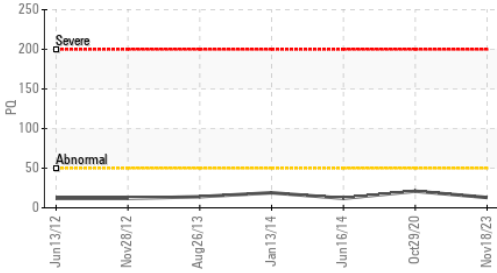
	method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647	>80000	46485	▲ 119488	8831
Particles >6µm	ASTM D7647	>20000	5307	▲ 14858	▲ 4811
Particles >14µm	ASTM D7647	>640	69	53	▲ 819
Particles >21µm	ASTM D7647	>160	11	6	▲ 276
Particles >38µm	ASTM D7647	>40	0	0	▲ 42
Particles >71µm	ASTM D7647	>10	0	0	4
Oil Cleanliness	ISO 4406 (c)	>23/21/16	23/20/13	▲ 24/21/13	▲ 20/19/17

OIL ANALYSIS REPORT

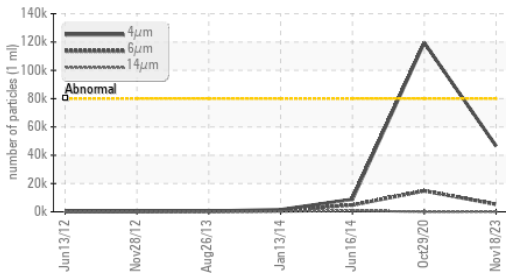
Additives



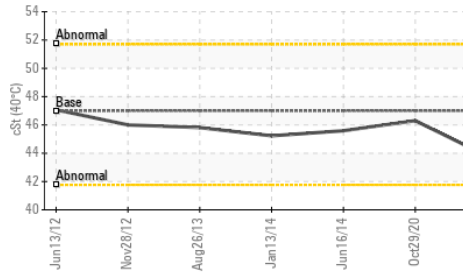
PQ



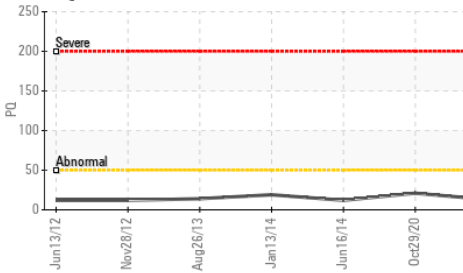
Particle Trend



Viscosity @ 40°C



PQ

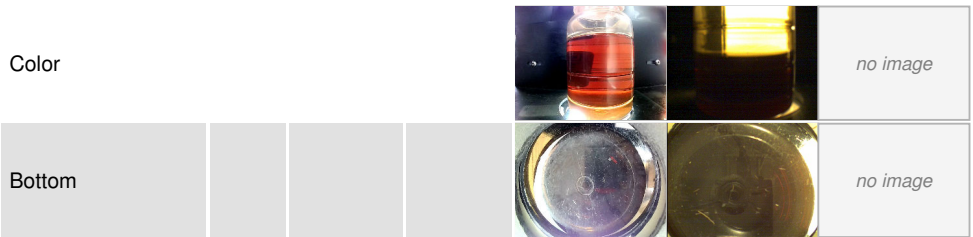


FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045	0.06	0.39	0.333	0.281

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	LIGHT
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	>0.075	NEG	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG	NEG

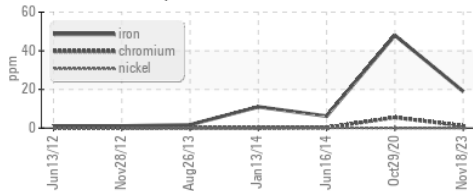
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	47	43.8	46.3	45.59

SAMPLE IMAGES

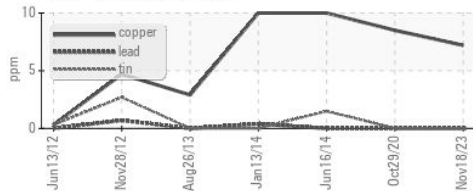


GRAPHS

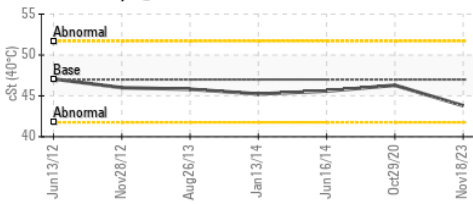
Ferrous Alloys



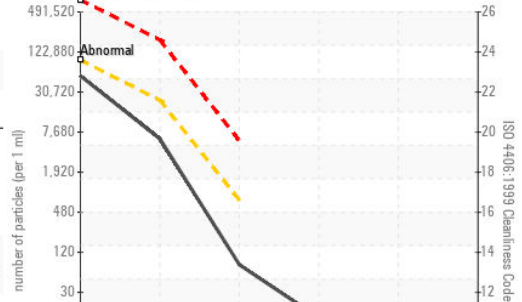
Non-ferrous Metals



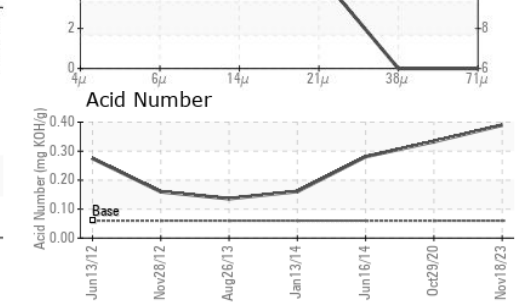
Viscosity @ 40°C



Particle Count



Acid Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : LEC0040241 **Received** : 22 Nov 2023
Lab Number : 06015713 **Diagnosed** : 27 Nov 2023
Unique Number : 10754857 **Diagnostician** : Jonathan Hester
Test Package : CONST (Additional Tests: PQ)

S & E CLEARING & HYDROSEEDING
 PO BOX 277
 VARNEY, WV
 US 25696
 Contact: RANDALL

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)

T: (606)237-1200
 F: (606)237-1202