



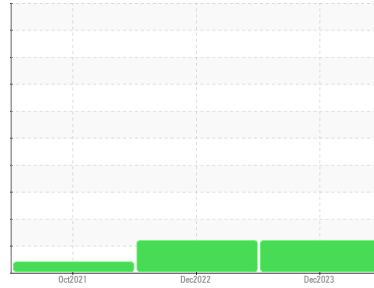
OIL ANALYSIS REPORT

Sample Rating Trend

ISO



Area
ENVIRONNEMENT ROUTIER NRJ [02605604]
 Machine Id
JOHN DEERE 345GLC 1FF345GXTLF020665
 Component
Hydraulic System
 Fluid
PANOLIN HLP SYNTH 46 (330 LTR)



DIAGNOSIS

Recommendation

Nous recommandons le remplacement des filtres de ce composant. Nous vous recommandons d'échantillonner de nouveau dès que possible afin de contrôler la situation.

Wear

Les taux d'usure de tous les composants sont normaux.

Contamination

Il y a une quantité modérée de particules (de 4 à 14 microns) dans l'huile. Il y a une faible concentration (<5.0%) d'huile minérale présente dans le fluide. La teneur en eau est négligeable. La propreté du système est supérieure à la limite acceptable pour votre objectif de propreté ISO 4406.

Fluid Condition

Le AN est acceptable pour ce fluide. l'huile peut encore servir si la contamination peut être réduite à un niveau acceptable.

SAMPLE INFORMATION

method	limit/base	current	history1	history2
Sample Number	Client Info	WC	WC	WC
Sample Date	Client Info	19 Dec 2023	09 Dec 2022	06 Oct 2021
Machine Age	hrs Client Info	3530	2260	443
Oil Age	hrs Client Info	0	0	0
Oil Changed	Client Info	N/A	N/A	N/A
Sample Status		ABNORMAL	ATTENTION	ATTENTION

WEAR METALS

method	limit/base	current	history1	history2
Iron	ppm ASTM D5185(m) >32	5	2	0
Chromium	ppm ASTM D5185(m) >9	0	0	0
Nickel	ppm ASTM D5185(m) >5	<1	<1	<1
Titanium	ppm ASTM D5185(m)	0	<1	<1
Silver	ppm ASTM D5185(m)	0	0	0
Aluminum	ppm ASTM D5185(m) >9	<1	0	0
Lead	ppm ASTM D5185(m) >28	<1	0	0
Copper	ppm ASTM D5185(m) >50	2	1	<1
Tin	ppm ASTM D5185(m) >5	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) 0	2	0	2
Barium	ppm ASTM D5185(m) 0	0	0	0
Molybdenum	ppm ASTM D5185(m) 0	0	0	0
Manganese	ppm ASTM D5185(m) 0	0	0	0
Magnesium	ppm ASTM D5185(m) 0	<1	0	0
Calcium	ppm ASTM D5185(m) 0	7	<1	18
Phosphorus	ppm ASTM D5185(m) 1700	1395	1641	1645
Zinc	ppm ASTM D5185(m) 0	25	11	6
Sulfur	ppm ASTM D5185(m) 1350	1511	1345	1480
Lithium	ppm ASTM D5185(m)	<1	<1	<1

CONTAMINANTS

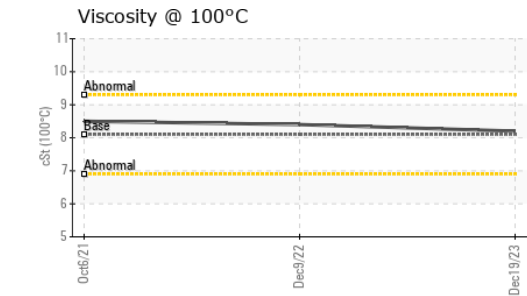
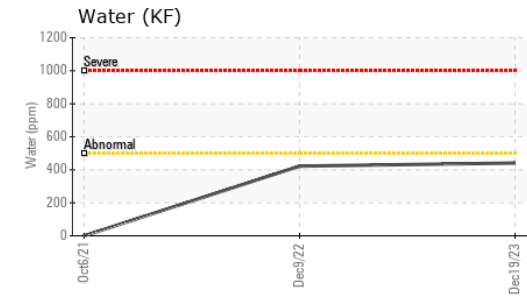
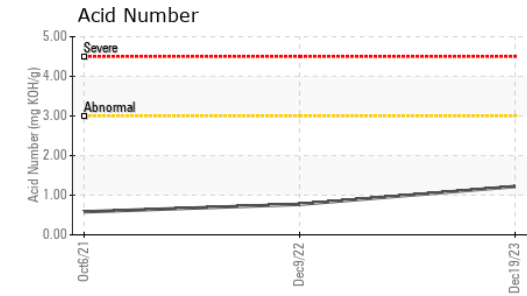
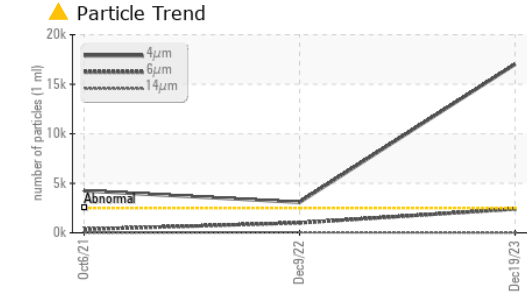
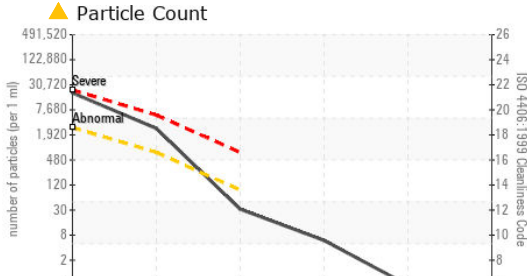
method	limit/base	current	history1	history2
Silicon	ppm ASTM D5185(m) >11	1	1	1
Sodium	ppm ASTM D5185(m) >21	<1	<1	<1
Potassium	ppm ASTM D5185(m) >20	<1	<1	<1
Water	% ASTM D6304* >0.05	0.044	0.042	---
ppm Water	ppm ASTM D6304* >500	441	422.2	---

INFRA-RED

method	limit/base	current	history1	history2
Soot %	% ASTM D7844*	0	0	---
Nitration	Abs/cm ASTM D7624*	4.4	4.5	---
Sulfation	Abs/.1mm ASTM D7415*	156.1	181.9	---
Mineral Oil Content	% ASTM D7418* <5.0%	<5.0	<5.0	0.1



OIL ANALYSIS REPORT



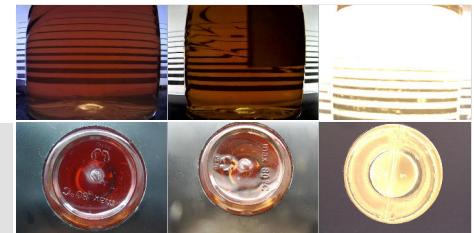
FLUID CLEANLINESS	method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647	>2500	▲ 17012	▲ 3078	▲ 4245
Particles >6µm	ASTM D7647	>640	▲ 2406	▲ 1005	354
Particles >14µm	ASTM D7647	>80	28	55	20
Particles >21µm	ASTM D7647	>20	5	8	7
Particles >38µm	ASTM D7647	>4	0	0	0
Particles >71µm	ASTM D7647	>3	0	0	0
Oil Cleanliness	ISO 4406 (c)	>18/16/13	▲ 21/18/12	▲ 19/17/13	▲ 19/16/11

FLUID DEGRADATION	method	limit/base	current	history1	history2
Oxidation	Abs./1mm	ASTM D7414*	154.0	159.8	---
Acid Number (AN)	mg KOH/g	ASTM D974*	1.22	0.77	0.58

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

FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D7279(m)	47.0	45.8	46.4
Visc @ 100°C	cSt	ASTM D7279(m)	8.1	8.4	8.5
Viscosity Index (VI)	Scale	ASTM D2270*	146	161	162

SAMPLE IMAGES	method	limit/base	current	history1	history2
Color					
Bottom					



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : WC
Lab Number : 02604553
Unique Number : 5697638
Test Package : MOB 2 (Additional Tests: TAN Man)
Received : 20 Dec 2023
Diagnosed : 02 Jan 2024
Diagnostician : Bill Quesnel

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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.



MINERAL OIL CONTENT REPORT

PASS

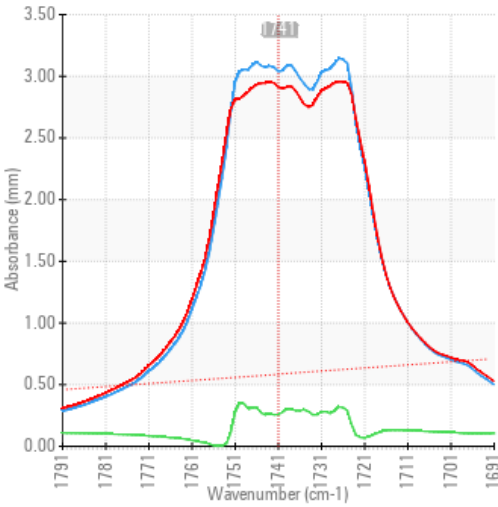


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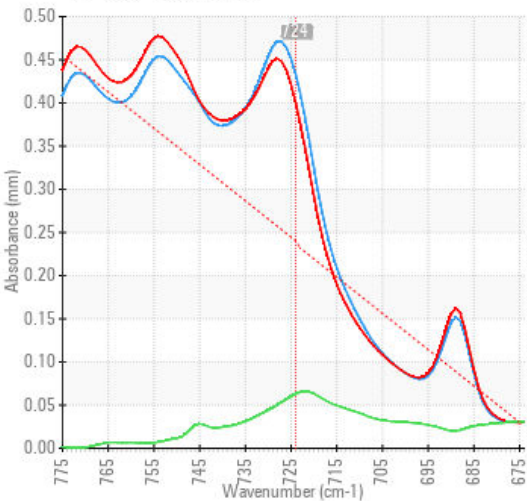
SPECTRAL ANALYSIS

		method	limit/base	current	history1	history2
Zinc	ppm	ASTM D5185(m)	0	25	11	6
Mineral Oil Content	%	ASTM D7418*	<5.0%	<5.0	<5.0	0.1

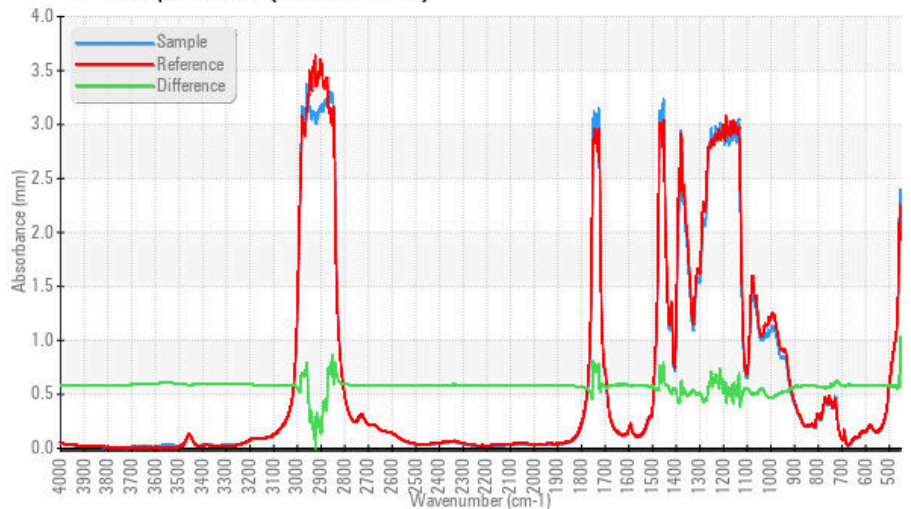
FT-IR - Esters I



FT-IR - Esters II



FT-IR Spectrum (Absorbance)



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