

ghi.ya JOHN DEERE Feed Generator (S/N PE4045N026883)

Diesel Engine

MOBIL 15W40 (30 LTR)

RECOMMENDATION

The oil change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

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Copper ppm levels are abnormal. Bearing wear is indicated.

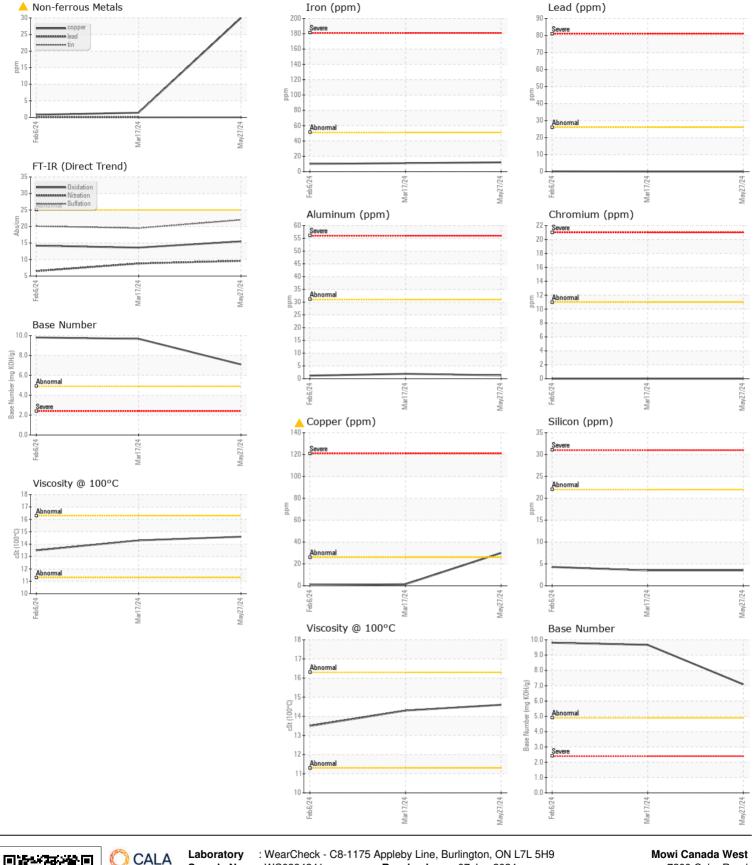
CONTAMINATION

There is no indication of any contamination in the oil.

FLUID CONDITION

The BN result indicates that there is suitable alkalinity remaining in the oil. The oil is no longer serviceable as a result of the abnormal and/or severe wear.

Sample DateClient InfoZ May 202417 Mar 202406 Feb 2024Machine AgehrsClient Info361029102475Oil AgehrsClient Info700435340Filter AgehrsClient Info19016340Oil ChangedClient InfoImageChangedChangedChangedFilter ChangedClient InfoImageChangedChangedChangedFilter ChangedClient InfoImageChangedChangedChangedSample StatusVirtual MarkNORMALNORMALNORMALIronppmASTMD5165(m)>51121110ChromiumppmASTMD5165(m)>510<11<11TtaniumppmASTMD5165(m)>510<11<11ItaniumppmASTMD5165(m)>3000AluminumppmASTMD5165(m)>2600<11ItaappmASTMD5165(m)>2600<11ItaappmASTMD5165(m)>2600<11ItaappmASTMD5165(m)>2600<11ItaappmASTMD5165(m)>2600<11ItaappmASTMD5165(m)>263011<11ItaappmASTMD5165(m)>261<1.0<1.0VanadiumppmASTMD5165(m)>201<1.0<1							
Sample DateClient InfoZ May 202417 Mar 202406 Feb 2024Machine AgehrsClient Info361029102475Oil AgehrsClient Info700435340Filter AgehrsClient Info19016340Oil ChangedClient InfoImageChangedChangedChangedFilter ChangedClient InfoImageChangedChangedChangedFilter ChangedClient InfoImageChangedChangedChangedSample StatusVXTMD5185(m)>51121110ChromiumppmASTMD5185(m)>510<11<11ChromiumppmASTMD5185(m)>510<11<11TitaniumppmASTMD5185(m)>3000AluminumppmASTMD5185(m)>300<11LeadppmASTMD5185(m)>263011<11TinppmASTMD5185(m)>263011<11FuelVC Method>2.14.1<1.0<1.0SiliconppmASTMD5185(m)>201<1.0<1.0VanadiumppmASTMD5185(m)>21AstM<1.0<1.0SiliconppmASTMD5185(m)>21AstM<1.0<1.0VanadiumppmASTMD5185(m)>21AstM<1.0<1.0SiliconppmASTMD5185(m)>	Test	UOM	Method	Limit/Abn	Current	History1	History2
Machine AgehrsClient Info361029102475Oil AgehrsClient Info700435340Filter AgehrsClient Info19016340Oil ChangedClient InfoChangedChangedChangedFilter ChangedClient InfoChangedChangedChangedSample StatusClient InfoChangedChangedChangedIronppmASTM D5185(m>51121110ChromiumppmASTM D5185(m>50<1<1TitaniumppmASTM D5185(m>500<1<1TitaniumppmASTM D5185(m>500<1<1LeadppmASTM D5185(m>31121<1LeadppmASTM D5185(m>6000<1CopperppmASTM D5185(m>26A301<1TinppmASTM D5185(m>26A3000VanadiumppmASTM D5185(m>22444PotassiumppmASTM D5185(m>221<1.0<1.0SiliconppmASTM D5185(m>22444PotassiumppmASTM D5185(m>221<1.0<1.0KaterWC Method>.21NEGNEGNEGNEGSoliconppmASTM D5185(m201<1.0<1.0KaterWC	Sample Number		Client Info		WC0894241	WC0894276	WC0894255
Oil Age Filter Age Filter Age (Client Info700435340Filter Age (Client Info19016340Oil ChangedClient InfoChanged (ChangedChanged (ChangedChanged (ChangedFilter ChangedClient InfoChanged (ChangedChanged (ChangedChanged (ChangedSample StatusClient InfoDASTM05185(m) >51121110Chromium ppmppmASTM05185(m) >510<1<1<1Chromium ppmppmASTM05185(m) >510<1<1<1Titanium ppmppmASTM05185(m) >33000<1<1LeadppmASTM05185(m) >2600<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<	Sample Date		Client Info		27 May 2024	17 Mar 2024	06 Feb 2024
Filter AgehrsClient Info19016340Oil ChangedClient InfoChangedChangedChangedChangedFilter ChangedClient InfoChangedChangedChangedChangedSample StatusASTM D5185(m)>51121110IronppmASTM D5185(m)>50<	Machine Age	hrs	Client Info		3610	2910	2475
Oil ChangedClient InfoChangedChangedChangedChangedChangedChangedFilter ChangedClient InfoASNORIMALNORMALNORMALNORMALIronppmASTMD5185(m) >51121110ChromiumppmASTMD5185(m) >510<1<11NickelppmASTMD5185(m) >510<1<11TitaniumppmASTMD5185(m) >50000SilverppmASTMD5185(m) >51121LeadppmASTMD5185(m) >2600<11CopperppmASTMD5185(m) >26A 301<11TinppmASTMD5185(m) >26A 301<11FuelppmASTMD5185(m) >22444PotassiumppmASTMD5185(m) >22444PotassiumppmASTMD5185(m) >22444PotassiumppmASTMD5185(m) >22444PotassiumppmASTMD5185(m) >22444PotassiumppmASTMD5185(m) >201<1<1FuelWC Method>.1NEGNEGNEGSolfwictNGASTM D5185(m) >201<1<1FuelWC Method>.1NEGNEGNEGSolfwictNGASTM D5185(m) >131.22.0SolfwictNGASTM D5185(m) <01.1<1F	Oil Age	hrs	Client Info		700	435	340
Filter Changed Sample Status Client Info Changed ABNORMAL Changed NORMAL Changed NORMAL Changed NORMAL Changed NORMAL Iron ppm ASTM D5185(m) >51 12 11 10 Oromium ppm ASTM D5185(m) >5 0 <1 <1 Titanium ppm ASTM D5185(m) >5 0 <1 <1 Titanium ppm ASTM D5185(m) >5 0 0 0 Silver ppm ASTM D5185(m) >3 1 2 1 Lead ppm ASTM D5185(m) >26 0 0 0 Vanadium ppm ASTM D5185(m) >22 4 4 4 Potassium ppm ASTM D5185(m) >20 1 <1 <1 Fuel WC Method >2.1 REG NEG NEG NEG Solt actor % ASTM D5185(m) >20 1 <1 <1 Fuel <td< th=""><th>Filter Age</th><th>hrs</th><th>Client Info</th><th></th><th>190</th><th>16</th><th>340</th></td<>	Filter Age	hrs	Client Info		190	16	340
Sample Status ABNORMAL NORMAL NORMAL Iron ppm ASTM D5185(m) >51 12 111 10 Chromium ppm ASTM D5185(m) >5 0 <1 <11 Nickel ppm ASTM D5185(m) >5 0 <1 <11 Titanium ppm ASTM D5185(m) >5 0 <1 <11 Titanium ppm ASTM D5185(m) >3 0 0 0 Silver ppm ASTM D5185(m) >3 0 0 <11 Lead ppm ASTM D5185(m) >26 0 0 0 Copper ppm ASTM D5185(m) >20 1 <1 <1 Tin ppm ASTM D5185(m) >22 4 4 4 Potassium ppm ASTM D5185(m) >20 1 <1< <1< Fuel WC Method >2.1 <1.0 <1.0 <1.0	Oil Changed		Client Info		Changed	Changed	Changed
Iron ppm ASTM DS185(m) >51 12 11 10 Chromium ppm ASTM DS185(m) >11 0 0 0 Nickel ppm ASTM DS185(m) >5 0 <1 <1 Titanium ppm ASTM DS185(m) >3 0 0 0 Silver ppm ASTM DS185(m) >3 0 0 0 Aluminum ppm ASTM DS185(m) >26 0 0 <1 Lead ppm ASTM DS185(m) >26 0 0 0 0 Vanadium ppm ASTM DS185(m) >22 4 4 4 Potassium ppm ASTM DS185(m) >20 1 <1< <1 Fuel WC Method >2.1 4.10 <1.0 <1.0 <1.0 Water WC Method >2.1 1.2 0.8 0.6 NEG Soot % % ASTM D764* 20	Filter Changed		Client Info		Changed	Changed	Changed
Chromium ppm ASTM D5185(m) >11 0 0 0 Nickel ppm ASTM D5185(m) >5 0 <1	Sample Status				ABNORMAL	NORMAL	NORMAL
Chromium ppm ASTM D5185(m) >11 0 0 0 Nickel ppm ASTM D5185(m) >5 0 <1							
Nickel ppm ASTM D5185(m) >5 0 <1		ppm		>51	12		
Titanium ppm ASTM D5185(m) O O O Silver ppm ASTM D5185(m) >3 0 0 0 Aluminum ppm ASTM D5185(m) >31 1 2 1 Lead ppm ASTM D5185(m) >26 0 0 <11 Copper ppm ASTM D5185(m) >26 30 1 <1 Tin ppm ASTM D5185(m) >26 30 1 <1 Tin ppm ASTM D5185(m) >22 4 4 4 Potassium ppm ASTM D5185(m) >22 4 4 4 Potassium ppm ASTM D5185(m) >20 1 <1< <1 Fuel WC Method >0.21 NEG NEG NEG Glycol WC Method >0.21 NEG NEG NEG Soto % % ASTM D5185(m) >30 22.0 19.5 20.1 <tr< th=""><th></th><th>ppm</th><th></th><th>>11</th><th>0</th><th>0</th><th>0</th></tr<>		ppm		>11	0	0	0
Silver ppm ASTM D5185(m) >3 0 0 0 Aluminum ppm ASTM D5185(m) >31 1 2 1 Lead ppm ASTM D5185(m) >26 0 0 <1	Nickel	ppm		>5	0	<1	<1
Aluminum ppm ASTM D5185(m) >31 1 2 1 Lead ppm ASTM D5185(m) >26 0 0 <1		ppm	ASTM D5185(m)		0	0	
Lead ppm ASTM D5185(m) >26 0 0 <1	Silver	ppm	()		-	0	
Copper ppm ASTM D5185(m) >26 30 1 <1	Aluminum	ppm	ASTM D5185(m)	>31	1	2	1
Tin ppm ASTM D5185(m) >4 0 0 0 Vanadium ppm ASTM D5185(m) >22 4 4 4 Potassium ppm ASTM D5185(m) >22 4 4 4 WC Method >2.1 <1.0	Lead	ppm	ASTM D5185(m)	>26	0		<1
Vanadium ppm ASTM D5185(m) 0 0 0 Silicon ppm ASTM D5185(m) >22 4 4 4 Potassium ppm ASTM D5185(m) >20 1 <1 <1 Fuel WC Method >2.1 <1.0 <1.0 <1.0 Water WC Method >0.21 NEG NEG NEG Glycol WC Method >0.21 NEG NEG NEG Soot % % ASTM D7844* >3 1.2 0.8 0.6 Nitration Abs/cm ASTM D7624* >20 9.6 8.8 6.5 Sulfation Abs/.1mm ASTM D715* >30 22.0 19.5 20.1 Emulsified Water scalar Visual* >0.21 NEG NEG NEG Sodium ppm ASTM D5185(m) 118 4 1 <1 Boron ppm ASTM D5185(m) 0 <1 0 0	Copper	ppm	ASTM D5185(m)	>26	<mark>▲</mark> 30	1	<1
Silicon ppm ASTM D5185(m) >22 4 4 4 Potassium ppm ASTM D5185(m) >20 1 <1	Tin	ppm	ASTM D5185(m)	>4	0	0	0
Potassium ppm ASTM D5185(m) >20 1 <1	Vanadium	ppm	ASTM D5185(m)		0	0	0
Fuel WC Method<>2.1 <1.0	Silicon	ppm	ASTM D5185(m)	>22	4	4	4
Water WC Method >0.21 NEG NEG NEG Glycol WC Method NEG NEG NEG Soot % % ASTM D7844* >3 1.2 0.8 0.6 Nitration Abs/cm ASTM D7624* >20 9.6 8.8 6.5 Sulfation Abs/cm ASTM D7624* >20 19.5 20.1 Emulsified Water scalar Visual* >0.21 NEG NEG Sodium ppm ASTM D5185(m) 18 4 1 <1 Boron ppm ASTM D5185(m) 0 <1 0 <1 Molybdenum ppm ASTM D5185(m) 37 205 949 <	Potassium	ppm	ASTM D5185(m)	>20	1	<1	<1
Glycol WC Method NEG NEG NEG Soot % % ASTM D7844* >3 1.2 0.8 0.6 Nitration Abs/cm ASTM D7624* >20 9.6 8.8 6.5 Sulfation Abs/.1mm ASTM D7624* >20 9.6 8.8 6.5 Sulfation Abs/.1mm ASTM D7415* >30 22.0 19.5 20.1 Emulsified Water scalar Visual* >0.21 NEG NEG NEG Sodium ppm ASTM D5185(m) >118 4 1 <1 Boron ppm ASTM D5185(m) >118 4 1 <1 Barium ppm ASTM D5185(m) I 0 <1 0 Molybdenum ppm ASTM D5185(m) I 66 85 62 Magnesium ppm ASTM D5185(m) I 37 205 949 Calcium ppm ASTM D5185(m) I <t< th=""><th>Fuel</th><th></th><th>WC Method</th><th>>2.1</th><th><1.0</th><th><1.0</th><th><1.0</th></t<>	Fuel		WC Method	>2.1	<1.0	<1.0	<1.0
Soot % % ASTM D7844* >3 1.2 0.8 0.6 Nitration Abs/cm ASTM D7624* >20 9.6 8.8 6.5 Sulfation Abs/.1mm ASTM D7415* >30 22.0 19.5 20.1 Emulsified Water scalar Visual* >0.21 NEG NEG NEG Sodium ppm ASTM D5185(m) >118 4 1 <1 Boron ppm ASTM D5185(m) >118 4 1 <1 Barium ppm ASTM D5185(m) 10 <10 0 Malganese ppm ASTM D5185(m) 66 85 62 Manganese ppm ASTM D5185(m) <10 0 0 Magnesium ppm ASTM D5185(m) <37 205 949 Calcium ppm ASTM D5185(m) <37 205 949 Phosphorus ppm ASTM D5185(m) <977 976 1014 <tr< th=""><th>Water</th><th></th><th>WC Method</th><th>>0.21</th><th>NEG</th><th>NEG</th><th>NEG</th></tr<>	Water		WC Method	>0.21	NEG	NEG	NEG
NitrationAbs/cmASTM D7624*>209.68.86.5SulfationAbs/1mmASTM D7415*>3022.019.520.1Emulsified WaterscalarVisual*>0.21NEGNEGNEGSodiumppmASTM D5185(m)>11841<1BoronppmASTM D5185(m)>11841<1BariumppmASTM D5185(m)Image: Soliar0<10MolybdenumppmASTM D5185(m)Image: Soliar0<10ManganeseppmASTM D5185(m)Image: SoliarImage: Soliar1000MagnesiumppmASTM D5185(m)Image: Soliar11191119PhosphorusppmASTM D5185(m)Image: Soliar110141119PhosphorusppmASTM D5185(m)Image: Soliar1168111751181SulfurppmASTM D5185(m)Image: Soliar126527702770SulfurppmASTM D5185(m)Image: Soliar13.614.2Base Number (BN)mg KOHigASTM D2886*Tmage: Soliar9.6779.6779.81	Glycol		WC Method		NEG	NEG	NEG
SulfationAbs/.1mmASTM D7415*>3022.019.520.1Emulsified WaterscalarVisual*>0.21NEGNEGNEGSodiumppmASTM D5185(m)>11841<1BoronppmASTM D5185(m)>11841<1BariumppmASTM D5185(m)C0<10MolybdenumppmASTM D5185(m)C668562ManganeseppmASTM D5185(m)C37205949CalciumppmASTM D5185(m)C37205949CalciumppmASTM D5185(m)C11681119PhosphorusppmASTM D5185(m)C116811751181SulfurppmASTM D5185(m)C279328552770OxidationAbs/.1mmASTM D7414*>2515.513.614.2Base Number (BN)mg KOHgASTM D2896*7.099.679.81	Soot %	%	ASTM D7844*	>3	1.2	0.8	0.6
Emulsified WaterscalarVisual*>0.21NEGNEGNEGSodiumppmASTM D5185(m)>11841<1BoronppmASTM D5185(m)19122BariumppmASTM D5185(m)0<10MolybdenumppmASTM D5185(m)668562ManganeseppmASTM D5185(m)<1100MagnesiumppmASTM D5185(m)<137205949CalciumppmASTM D5185(m)2063118861119PhosphorusppmASTM D5185(m)97779761014ZincppmASTM D5185(m)116811751181SulfurppmASTM D5185(m)279328552770OxidationAbs/.1mmASTM D2896*15.513.614.2Base Number (BN)mg KOH/gASTM D2896*7.099.679.81	Nitration	Abs/cm	ASTM D7624*	>20	9.6	8.8	6.5
SodiumppmASTM D5185(m)>11841<1	Sulfation	Abs/.1mm	ASTM D7415*	>30	22.0	19.5	20.1
Boron ppm ASTM D5185(m) 19 12 2 Barium ppm ASTM D5185(m) 0 <1 0 Molybdenum ppm ASTM D5185(m) 0 <1 0 Molybdenum ppm ASTM D5185(m) 666 855 622 Manganese ppm ASTM D5185(m) <1 0 0 Magnesium ppm ASTM D5185(m) <1 0 0 Calcium ppm ASTM D5185(m) 377 2053 949 Calcium ppm ASTM D5185(m) 377 976 1014 Phosphorus ppm ASTM D5185(m) 9777 976 1014 Zinc ppm ASTM D5185(m) 1168 1175 1181 Sulfur ppm ASTM D5185(m) 2793 2855 2770 Oxidation Abs/.1mm ASTM D7414* >25 15.5 13.6 14.2 Base Number (BN) mg KOH/g ASTM D2896* 7.09	Emulsified Water	scalar	Visual*	>0.21	NEG	NEG	NEG
Barium ppm ASTM D5185(m) 0 <1	Sodium	ppm	ASTM D5185(m)	>118	4	1	<1
Molybdenum ppm ASTM D5185(m) 66 85 62 Manganese ppm ASTM D5185(m) <1	Boron	ppm	ASTM D5185(m)		19	12	2
Manganese ppm ASTM D5185(m) <1	Barium	ppm	ASTM D5185(m)		0	<1	0
Magnesium ppm ASTM D5185(m) 37 205 949 Calcium ppm ASTM D5185(m) 2063 1886 1119 Phosphorus ppm ASTM D5185(m) 977 976 1014 Zinc ppm ASTM D5185(m) 1168 1175 1181 Sulfur ppm ASTM D5185(m) 2793 2855 2770 Oxidation Abs/.1mm ASTM D7414*<>25 15.5 13.6 14.2 Base Number (BN) mg KOH/g ASTM D2896* 7.09 9.67 9.81	Molybdenum	ppm	ASTM D5185(m)		66	85	62
Calcium ppm ASTM D5185(m) 2063 1886 1119 Phosphorus ppm ASTM D5185(m) 977 976 1014 Zinc ppm ASTM D5185(m) 1168 1175 1181 Sulfur ppm ASTM D5185(m) 2793 2855 2770 Oxidation Abs/.1mm ASTM D7414*<>25 15.5 13.6 14.2 Base Number (BN) mg KOH/g ASTM D2896* 7.09 9.67 9.81	Manganese	ppm	ASTM D5185(m)		<1	0	0
Phosphorus ppm ASTM D5185(m) 977 976 1014 Zinc ppm ASTM D5185(m) 1168 1175 1181 Sulfur ppm ASTM D5185(m) 2793 2855 2770 Oxidation Abs/.1mm ASTM D7414* >25 15.5 13.6 14.2 Base Number (BN) mg KOH/g ASTM D2896* 7.09 9.67 9.81	Magnesium	ppm	ASTM D5185(m)		37	205	949
Zinc ppm ASTM D5185(m) 1168 1175 1181 Sulfur ppm ASTM D5185(m) 2793 2855 2770 Oxidation Abs/.1mm ASTM D7414*<>25 15.5 13.6 14.2 Base Number (BN) mg KOH/g ASTM D2896* 7.09 9.67 9.81	Calcium	ppm	ASTM D5185(m)		2063	1886	1119
Sulfur ppm ASTM D5185(m) 2793 2855 2770 Oxidation Abs/.1mm ASTM D7414*<>25 15.5 13.6 14.2 Base Number (BN) mg KOH/g ASTM D2896* 7.09 9.67 9.81	Phosphorus	ppm	ASTM D5185(m)		977	976	1014
Oxidation Abs/.1mm ASTM D7414* >25 15.5 13.6 14.2 Base Number (BN) mg KOH/g ASTM D2896* 7.09 9.67 9.81	Zinc	ppm	ASTM D5185(m)		1168	1175	1181
Base Number (BN) mg KOH/g ASTM D2896* 7.09 9.67 9.81	Sulfur	ppm	ASTM D5185(m)		2793	2855	2770
	Oxidation	Abs/.1mm	ASTM D7414*	>25	15.5	13.6	14.2
	Base Number (BN)	mg KOH/g	ASTM D2896*		7.09	9.67	9.81
		cSt	ASTM D7279(m)			14.3	13.5



CALA Sample No. : WC0894241 Received : 07 Jun 2024 Lab Number : 02640425 Tested : 10 Jun 2024 ISO 17025:2017 Accredited Unique Number : 5789587 : 10 Jun 2024 - Kevin Marson Diagnosed Laboratory Test Package : MOB 2 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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Submitted By: Brian Dalton Page 2 of 2