JOHN DEERE 409 - DIESEL ENGINE

Sample No: JR0135309

Oil Type: MOBIL 15W40

SAMPLE INFORMATION

Sample Number		**JR0135309**	JR0135390	JR0135469	JR0135525
Sample Date		**10 Aug 2023**	14 Jun 2023	08 Mar 2023	06 Dec 2022
Machine Hours		**5337**	5074	4491	3999
Oil Hours		**337**	574	500	495
Oil Changed		**Not Changd**	Changed	Changed	Changed
Sample Status		**SEVERE**	SEVERE	ABNORMAL	NORMAL

OIL CONDITION

Visc @ 100°C	cSt	**13.0**	12.6	12.6	12.7
Base Number (BN)	mg KOH/g	**14.3**	11.1	10.5	10.7
Oxidation (PA)	%	**58**	60	59	69

CONTAMINATION

Water	%	**NEG**	NEG	NEG	NEG
Soot %	%	**0.2**	0.3	0.2	0.2
Nitration (PA)	%	**78**	75	58	57
Sulfation (PA)	%	**60**	58	55	60
Glycol	%	**0.20**	0.12	NEG	NEG
Fuel	%	**<1.0**	<1.0	<1.0	<1.0
Silicon	ppm	**20**	17	8	4
Sodium	ppm	**1526**	950	254	34
Potassium	ppm	**1317**	690	90	6

WEAR METALS

Iron	ppm	**24**	24	20	12
Copper	ppm	**19**	12	2	<1
Lead	ppm	**2**	<1	<1	0
Tin	ppm	**<1**	0	<1	<1
Aluminum	ppm	**4**	4	2	1
Chromium	ppm	**1**	<1	<1	<1
Molybdenum	ppm	**161**	99	67	50
Nickel	ppm	**2**	1	<1	0
Titanium	ppm	**0**	<1	0	0
Silver	ppm	**<1**	0	0	0
Manganese	ppm	**<1**	<1	<1	<1
Vanadium	ppm	**0**	<1	0	0

ADDITIVES

Calcium	ppm	**1270**	1204	1174	1271
Magnesium	ppm	**791**	852	777	667
Zinc	ppm	**1193**	1177	1112	1081
Phosphorus	ppm	**1011**	970	938	915
Barium	ppm	**<1**	0	0	0
Boron	ppm	**16**	13	13	15

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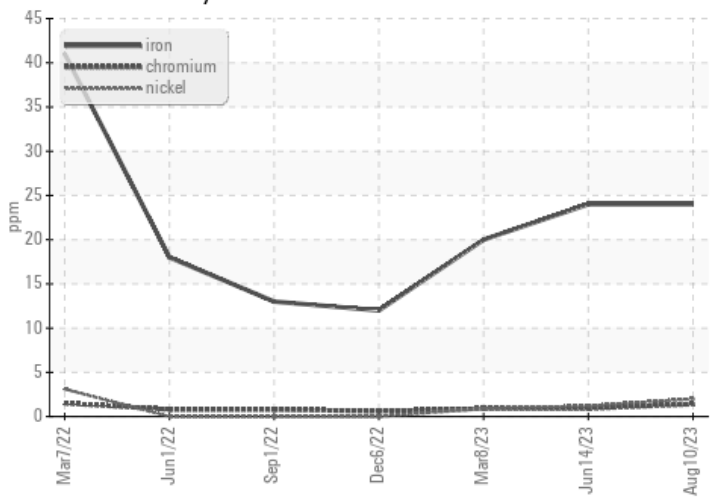
Diagnosis

We advise that you check for the source of the coolant leak. Check for low coolant level. We recommend that you drain the oil and perform a filter service on this component if not already done. We recommend an early resample to monitor this condition.All component wear rates are normal. Sodium and/or potassium levels are high. There is a high concentration of glycol present in the oil. The BN result indicates that there is suitable alkalinity remaining in the oil. The oil is no longer serviceable due to the presence of contaminants.

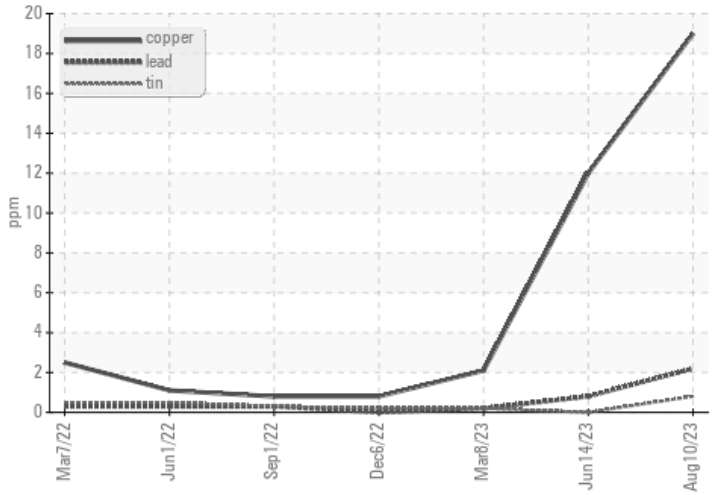
Depot: SCOLAW
Unique No: 10601990
Signed: Jonathan Hester
Report Date: 14 Aug 2023

GRAPHS

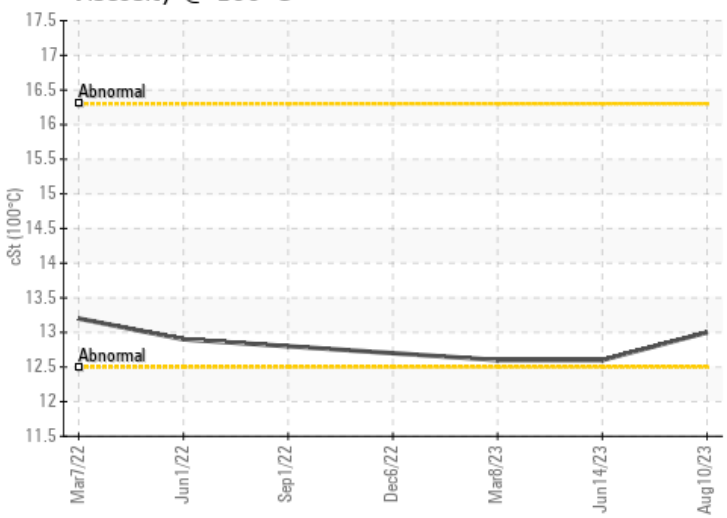
Ferrous Alloys



Non-ferrous Metals



Viscosity @ 100°C



Base Number