



WEAR	<b>NORMAL</b>
CONTAMINATION	<b>NORMAL</b>
FLUID CONDITION	<b>NORMAL</b>



Machine Id  
**CATERPILLAR 950GC C276161 (S/N CAT00950JM5T05442)**  
 Component  
**Diesel Engine**  
 Fluid  
**JOHN DEERE ENGINE OIL PLUS 50 II 15W40 (21 QTS)**

### RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>JR0225732</b>	JR0211354	JR0203111
Sample Date		Client Info		<b>21 Jun 2024</b>	17 Apr 2024	15 Feb 2024
Machine Age	hrs	Client Info		<b>3952</b>	3482	3016
Oil Age	hrs	Client Info		<b>470</b>	466	524
Filter Age	hrs	Client Info		<b>0</b>	466	0
Oil Changed		Client Info		<b>Changed</b>	Changed	Changed
Filter Changed		Client Info		<b>Changed</b>	Changed	Changed
Sample Status				<b>NORMAL</b>	NORMAL	NORMAL

### WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>100	<b>15</b>	13	13
Chromium	ppm	ASTM D5185m	>20	<b>&lt;1</b>	2	1
Nickel	ppm	ASTM D5185m	>2	<b>0</b>	2	<1
Titanium	ppm	ASTM D5185m	>2	<b>0</b>	<1	<1
Silver	ppm	ASTM D5185m	>2	<b>0</b>	<1	<1
Aluminum	ppm	ASTM D5185m	>25	<b>9</b>	16	16
Lead	ppm	ASTM D5185m	>40	<b>0</b>	1	<1
Copper	ppm	ASTM D5185m	>330	<b>&lt;1</b>	2	1
Tin	ppm	ASTM D5185m	>15	<b>0</b>	1	<1
Vanadium	ppm	ASTM D5185m		<b>&lt;1</b>	<1	<1
White Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE

### CONTAMINATION

There is no indication of any contamination in the oil.

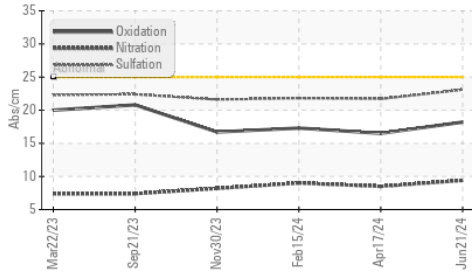
Silicon	ppm	ASTM D5185m	>25	<b>7</b>	8	8
Potassium	ppm	ASTM D5185m	>20	<b>&lt;1</b>	2	2
Fuel		WC Method	>5	<b>&lt;1.0</b>	<1.0	<1.0
Water		WC Method	>0.2	<b>NEG</b>	NEG	NEG
Glycol		WC Method		<b>NEG</b>	NEG	NEG
Soot %	%	*ASTM D7844	>3	<b>0.4</b>	0.3	0.5
Nitration	Abs/cm	*ASTM D7624	>20	<b>9.4</b>	8.5	9.0
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>23.1</b>	21.7	21.8
Silt	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Debris	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Appearance	scalar	*Visual	NORML	<b>NORML</b>	NORML	NORML
Odor	scalar	*Visual	NORML	<b>NORML</b>	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	<b>NEG</b>	NEG	NEG

### FLUID CONDITION

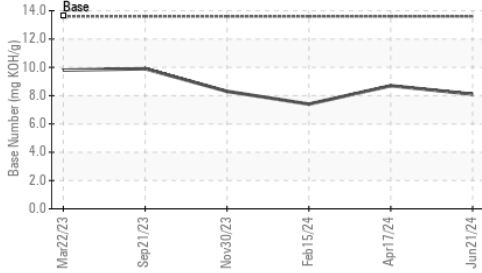
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sodium	ppm	ASTM D5185m		<b>2</b>	1	0
Boron	ppm	ASTM D5185m		<b>144</b>	239	169
Barium	ppm	ASTM D5185m		<b>&lt;1</b>	1	0
Molybdenum	ppm	ASTM D5185m		<b>255</b>	247	199
Manganese	ppm	ASTM D5185m		<b>&lt;1</b>	1	1
Magnesium	ppm	ASTM D5185m		<b>862</b>	782	745
Calcium	ppm	ASTM D5185m		<b>1610</b>	1400	1506
Phosphorus	ppm	ASTM D5185m		<b>936</b>	963	868
Zinc	ppm	ASTM D5185m		<b>1155</b>	1054	1061
Sulfur	ppm	ASTM D5185m		<b>3767</b>	3418	3347
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>18.2</b>	16.5	17.3
Base Number (BN)	mg KOH/g	ASTM D2896	13.6	<b>8.1</b>	8.7	7.4
Visc @ 100°C	cSt	ASTM D445	15.4	<b>13.2</b>	13.3	12.8

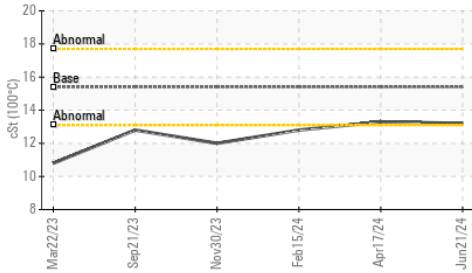
**FT-IR (Direct Trend)**



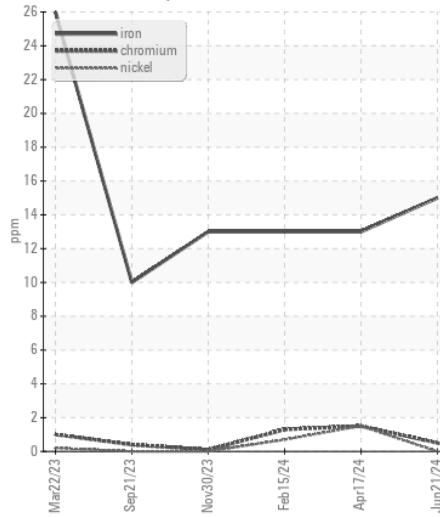
**Base Number**



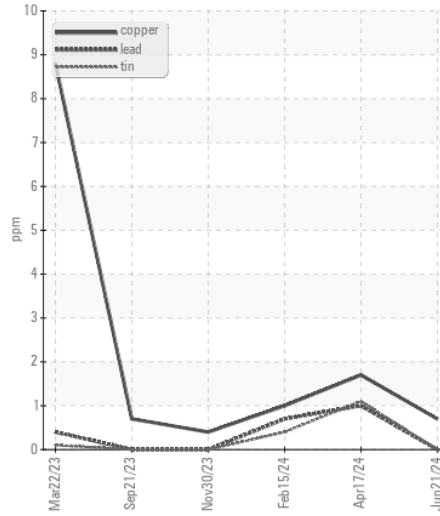
**Viscosity @ 100°C**



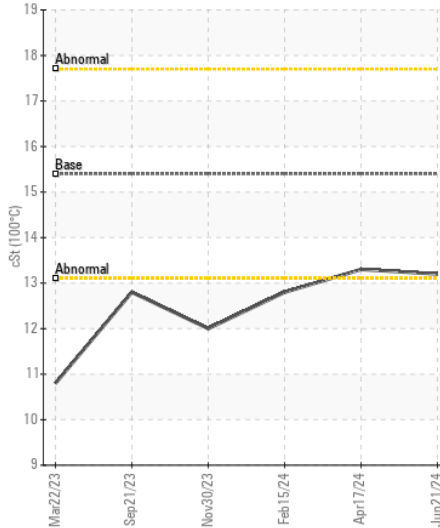
**Ferrous Alloys**



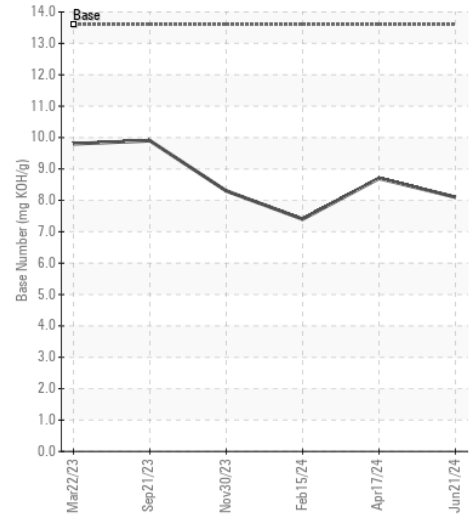
**Non-ferrous Metals**



**Viscosity @ 100°C**



**Base Number**



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513

**Sample No.** : JR0225732

**Lab Number** : 06217985

**Unique Number** : 11096182

**Test Package** : CONST ( Additional Tests: TBN )

**Received** : 24 Jun 2024

**Tested** : 25 Jun 2024

**Diagnosed** : 25 Jun 2024 - Wes Davis

**TITAN VIRGINIA READY MIX LLC**

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US 23502

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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)