



TRAAP

Texas Refinery Advanced Analysis Program

OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Machine Id
JOHN DEERE 160D 160D (S/N 051153)
 Component
Diesel Engine
 Fluid
TRC PRO-SPEC IV XP SYN BLEND 15W40 (4 GAL)

RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		TR05823478	TR05566562	TR05351119
Sample Date		Client Info		14 Apr 2023	09 Jun 2022	08 Sep 2021
Machine Age	hrs	Client Info		11299	10926	10614
Oil Age	hrs	Client Info		373	312	380
Filter Age	hrs	Client Info		373	312	380
Oil Changed		Client Info		Not Changd	Changed	Changed
Filter Changed		Client Info		Not Changd	Changed	Changed
Sample Status				NORMAL	NORMAL	NORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>51	39	35	59
Chromium	ppm	ASTM D5185m	>11	2	2	1
Nickel	ppm	ASTM D5185m	>5	1	<1	<1
Titanium	ppm	ASTM D5185m		<1	<1	<1
Silver	ppm	ASTM D5185m	>3	0	<1	<1
Aluminum	ppm	ASTM D5185m	>31	3	4	2
Lead	ppm	ASTM D5185m	>26	4	1	<1
Copper	ppm	ASTM D5185m	>26	1	2	2
Tin	ppm	ASTM D5185m	>4	<1	<1	<1
Vanadium	ppm	ASTM D5185m		0	<1	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

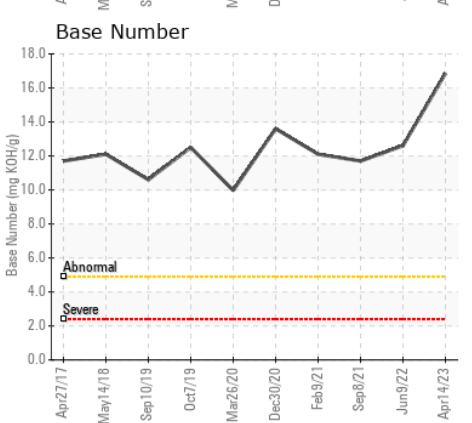
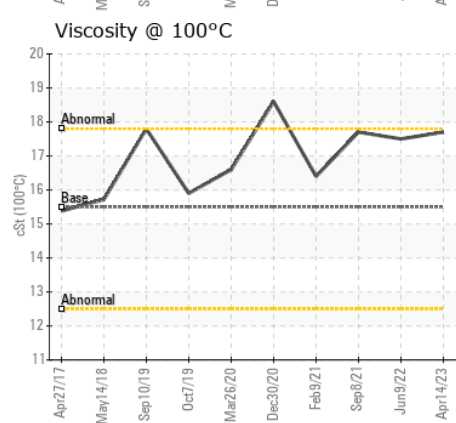
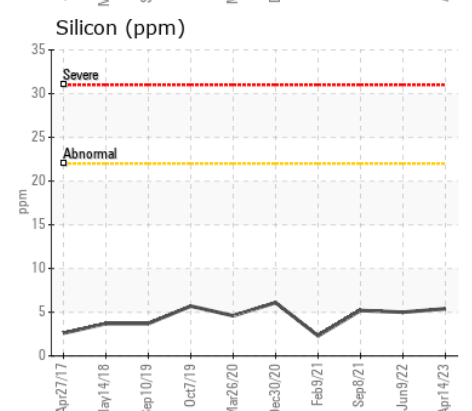
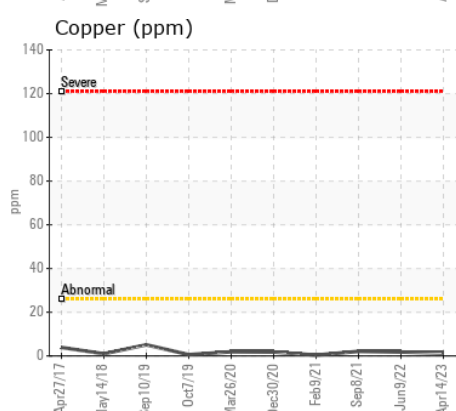
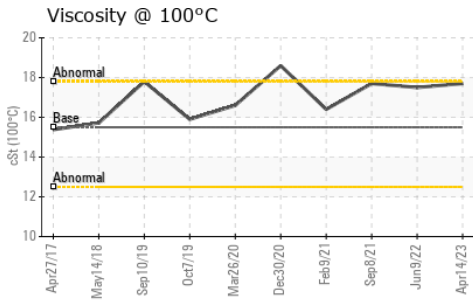
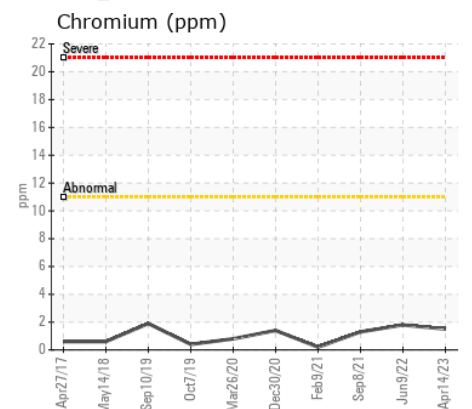
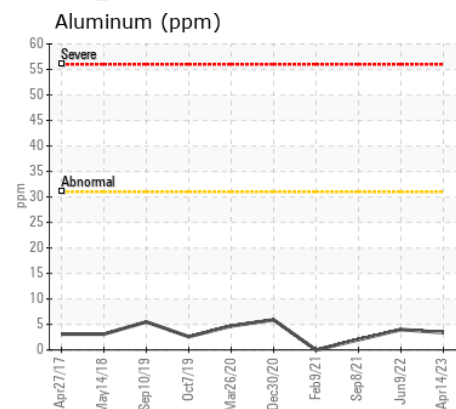
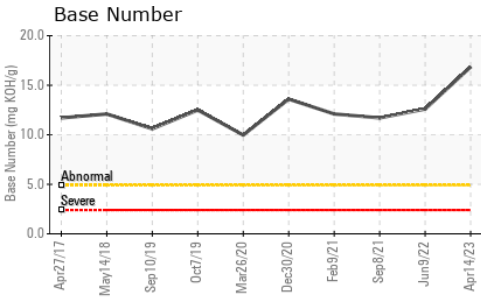
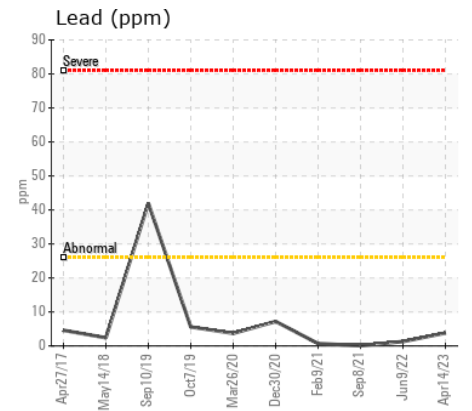
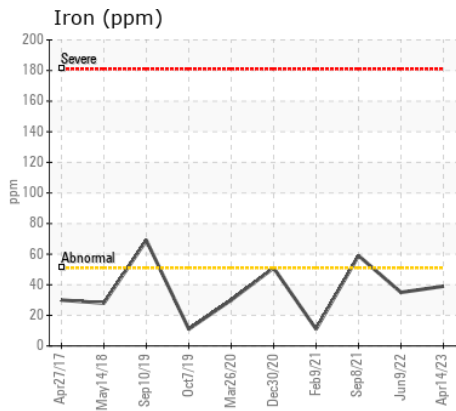
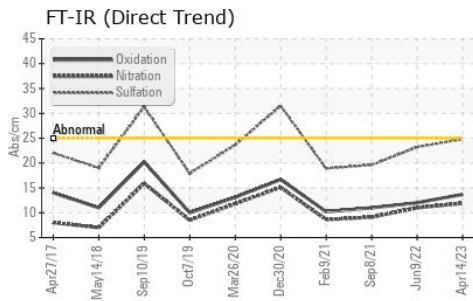
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>22	5	5	5
Potassium	ppm	ASTM D5185m	>20	3	2	1
Fuel		WC Method	>5	<1.0	<1.0	<1.0
Water		WC Method	>0.21	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>3	2.3	2	0.1
Nitration	Abs/cm	*ASTM D7624	>20	11.9	11.0	9.1
Sulfation	Abs/.1mm	*ASTM D7415	>30	24.8	23.2	19.6
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
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	>0.21	NEG	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	>31	<1	2	2
Boron	ppm	ASTM D5185m		0	4	10
Barium	ppm	ASTM D5185m		0	0	0
Molybdenum	ppm	ASTM D5185m		8	8	59
Manganese	ppm	ASTM D5185m		<1	<1	<1
Magnesium	ppm	ASTM D5185m		19	23	828
Calcium	ppm	ASTM D5185m		4997	4513	1289
Phosphorus	ppm	ASTM D5185m		975	972	1019
Zinc	ppm	ASTM D5185m		1160	1188	1133
Sulfur	ppm	ASTM D5185m		4036	4458	2610
Oxidation	Abs/.1mm	*ASTM D7414	>25	13.7	12.0	11
Base Number (BN)	mg KOH/g	ASTM D2896		16.85	12.6	11.7
Visc @ 100°C	cSt	ASTM D445	15.5	17.7	17.5	17.7



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : TR05823478
Lab Number : 05823478
Unique Number : 10431561
Test Package : MOB 2
Received : 18 Apr 2023
Tested : 19 Apr 2023
Diagnosed : 19 Apr 2023 - Wes Davis

FRANCIS TRACTOR SERVICE
 126 NORTH MILL DAM RD
 CAMDEN, NC
 US 27921
 Contact: MICHAEL FRANCIS
 francistractor@aol.com

To discuss this sample report, contact Customer Service at 1-800-827-0711.
 * - 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)