



T R A A P
Texas Refinery Advanced Analysis Program

OIL ANALYSIS REPORT

WEAR	ATTENTION
CONTAMINATION	ABNORMAL
FLUID CONDITION	NORMAL

Machine Id
COMBINE AF8120 Y9G205568

Component
Diesel Engine

Fluid
TRC MOLY XL PRO-SPEC IV XP 15W40 (10 GAL)

RECOMMENDATION

We advise that you check the air filter, air induction system, and any areas where dirt may enter the component. Oil and filter change at the time of sampling has been noted. We recommend an early resample to monitor this condition. Please note that this is a corrected copy for data entry updates.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		TR05943128	TR05659154	---
Sample Date		Client Info		01 Sep 2023	27 Sep 2022	---
Machine Age	hrs	Client Info		4120	3847	---
Oil Age	hrs	Client Info		100	200	---
Filter Age	hrs	Client Info		100	200	---
Oil Changed		Client Info		Changed	Changed	---
Filter Changed		Client Info		Changed	Changed	---
Sample Status				ABNORMAL	SEVERE	---

WEAR

Aluminum ppm levels are noted. All other component wear rates are normal.

Iron	ppm	ASTM D5185m	>100	42	255	---
Chromium	ppm	ASTM D5185m	>20	3	11	---
Nickel	ppm	ASTM D5185m	>4	<1	6	---
Titanium	ppm	ASTM D5185m		<1	<1	---
Silver	ppm	ASTM D5185m	>3	0	0	---
Aluminum	ppm	ASTM D5185m	>20	8	24	---
Lead	ppm	ASTM D5185m	>40	5	22	---
Copper	ppm	ASTM D5185m	>330	3	6	---
Tin	ppm	ASTM D5185m	>15	<1	2	---
Vanadium	ppm	ASTM D5185m		<1	<1	---
White Metal	scalar	*Visual	NONE	NONE	NONE	---
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	---

CONTAMINATION

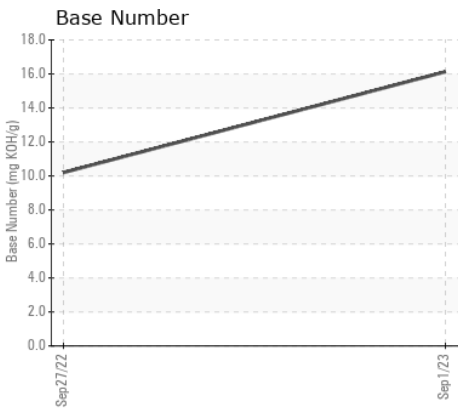
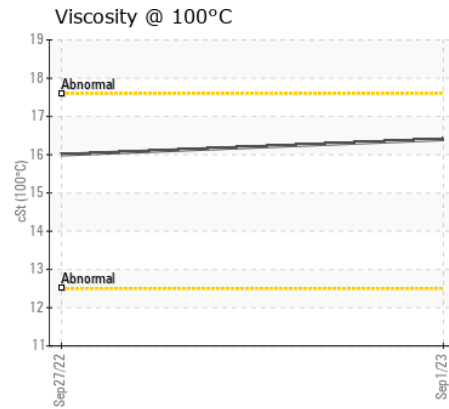
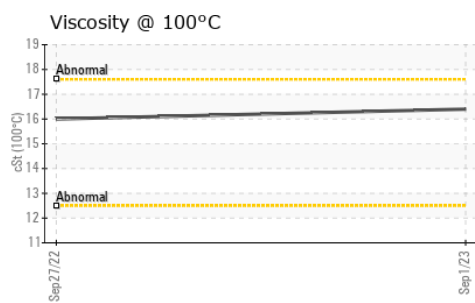
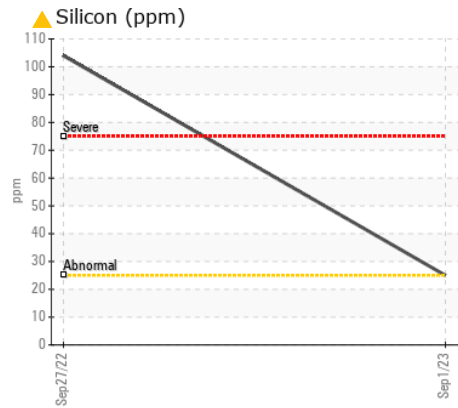
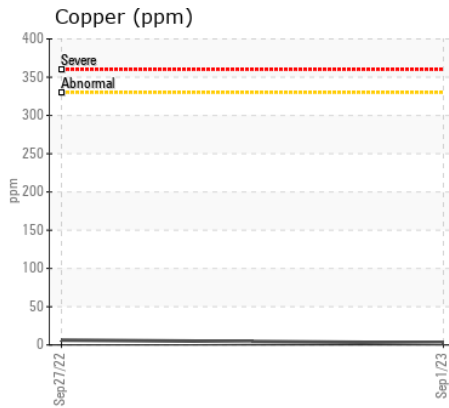
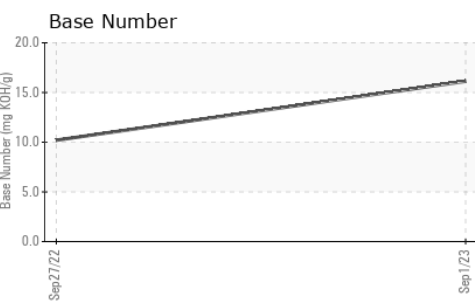
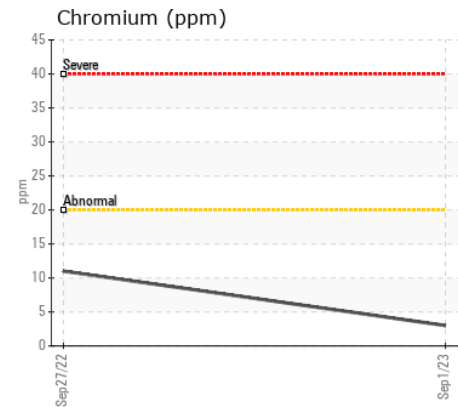
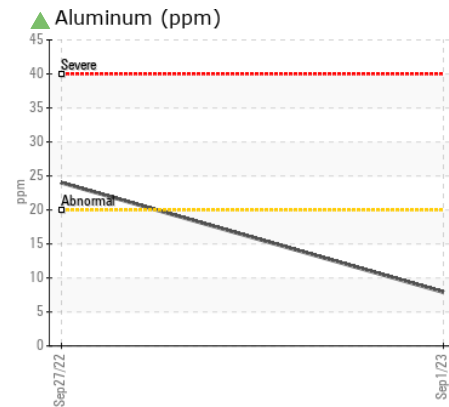
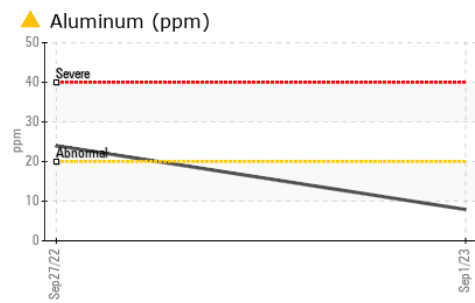
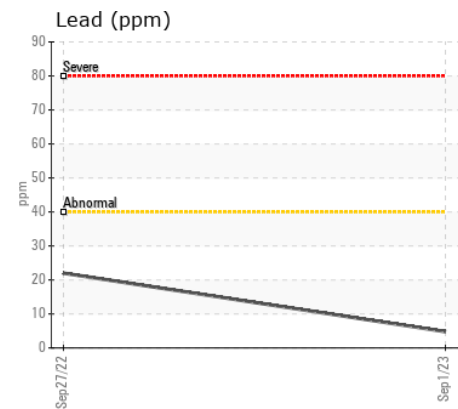
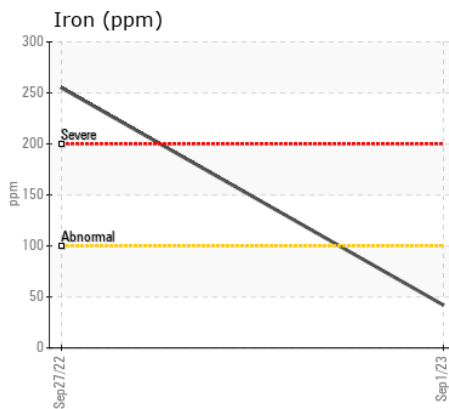
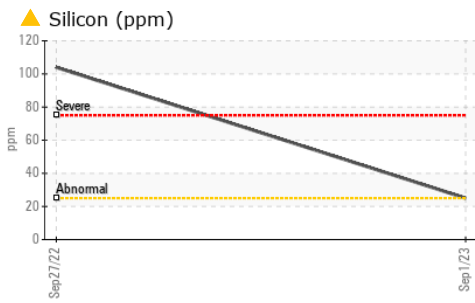
Elemental levels of silicon (Si) and aluminum (Al) indicate alumina-silicate (coarse dirt) ingress.

Silicon	ppm	ASTM D5185m	>25	25	104	---
Potassium	ppm	ASTM D5185m	>20	5	13	---
Fuel		WC Method	>5	<1.0	<1.0	---
Water		WC Method	>0.2	NEG	NEG	---
Glycol		WC Method		NEG	NEG	---
Soot %	%	*ASTM D7844	>3	0.3	0.4	---
Nitration	Abs/cm	*ASTM D7624	>20	11.3	12.4	---
Sulfation	Abs/.1mm	*ASTM D7415	>30	21.1	26.1	---
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	>0.2	NEG	NEG	---

FLUID CONDITION

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.

Sodium	ppm	ASTM D5185m		7	7	---
Boron	ppm	ASTM D5185m		15	295	---
Barium	ppm	ASTM D5185m		0	0	---
Molybdenum	ppm	ASTM D5185m		134	275	---
Manganese	ppm	ASTM D5185m		<1	2	---
Magnesium	ppm	ASTM D5185m		76	909	---
Calcium	ppm	ASTM D5185m		4514	1554	---
Phosphorus	ppm	ASTM D5185m		958	948	---
Zinc	ppm	ASTM D5185m		1226	1147	---
Sulfur	ppm	ASTM D5185m		5195	3370	---
Oxidation	Abs/.1mm	*ASTM D7414	>25	14.9	22.9	---
Base Number (BN)	mg KOH/g	ASTM D2896		16.13	10.2	---
Visc @ 100°C	cSt	ASTM D445		16.4	16.0	---



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : TR05943128
Lab Number : 05943128
Unique Number : 10633740
Test Package : MOB 2
Received : 05 Sep 2023
Tested : 15 Sep 2023
Diagnosed : 15 Sep 2023 - Doug Bogart

BUCKSHOT FARMS INC / ROLLING HILLS FARM INC
 27310 S DOWNING RD
 SPANGLE, WA
 US 99031
 Contact: RONALD GROGAN

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)

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