



TRAAP

Texas Refinery Advanced Analysis Program

OIL ANALYSIS REPORT

WEAR	ABNORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	ATTENTION

Machine Id
CATERPILLAR 950K 950K-L04 R4A00936
 Component
Diesel Engine
 Fluid
TRC MOLY XL PRO-SPEC IV XP 15W40 (6 GAL)

RECOMMENDATION

No corrective action is recommended at this time. We recommend an early resample to monitor this condition.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		TR06161034	TR06101164	TR06018439
Sample Date		Client Info		03 Apr 2024	15 Feb 2024	21 Nov 2023
Machine Age	hrs	Client Info		11136	11036	10867
Oil Age	hrs	Client Info		639	539	370
Filter Age	hrs	Client Info		100	539	370
Oil Changed		Client Info		Not Changd	Not Changd	Not Changd
Filter Changed		Client Info		Not Changd	Changed	Not Changd
Sample Status				ABNORMAL	ABNORMAL	ABNORMAL

WEAR

The aluminum level is abnormal. All other component wear rates are normal.

Iron	ppm	ASTM D5185m	>100	63	51	35
Chromium	ppm	ASTM D5185m	>20	1	1	<1
Nickel	ppm	ASTM D5185m	>2	0	0	0
Titanium	ppm	ASTM D5185m	>2	0	0	0
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>25	▲ 55	▲ 56	▲ 29
Lead	ppm	ASTM D5185m	>40	<1	0	<1
Copper	ppm	ASTM D5185m	>330	21	23	20
Tin	ppm	ASTM D5185m	>15	0	0	<1
Vanadium	ppm	ASTM D5185m		0	0	<1
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

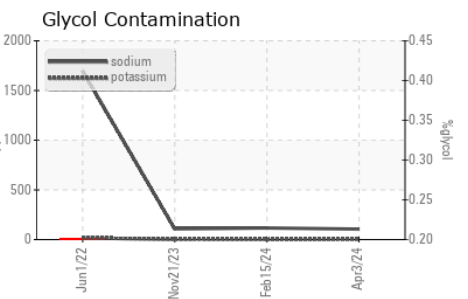
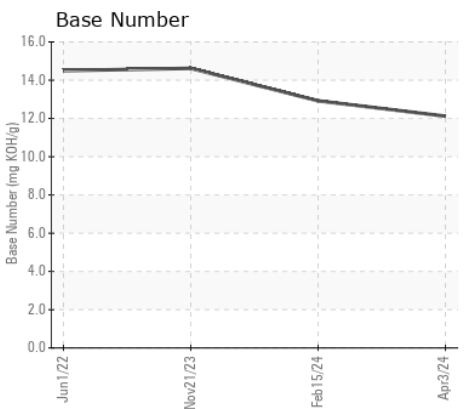
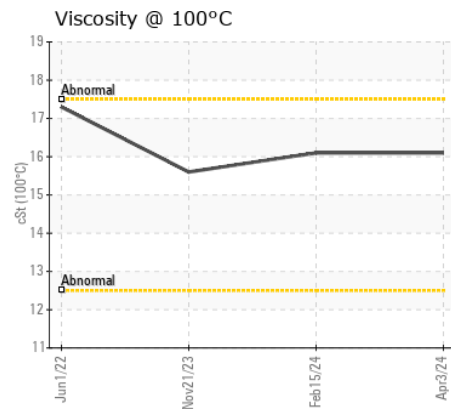
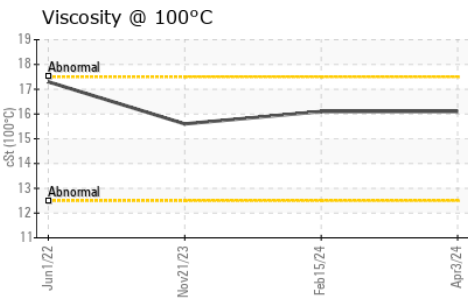
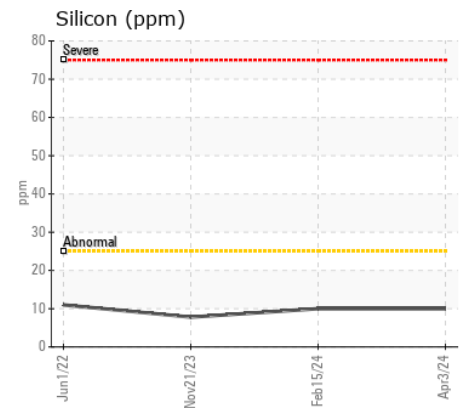
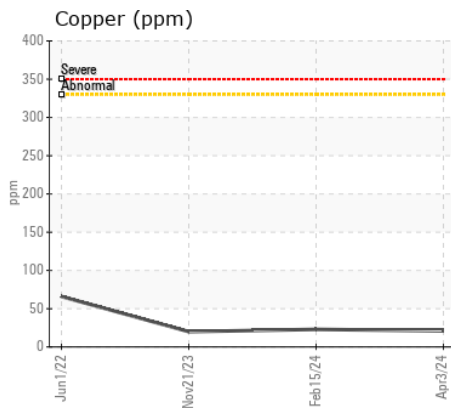
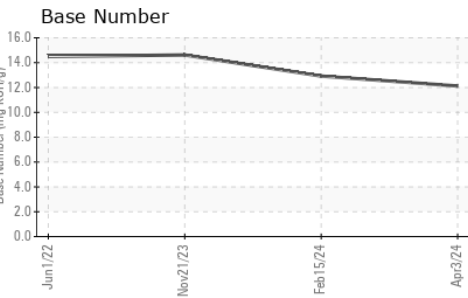
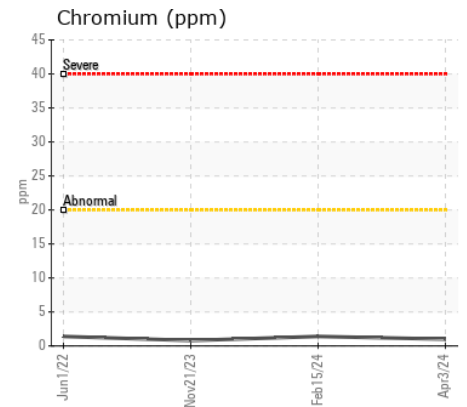
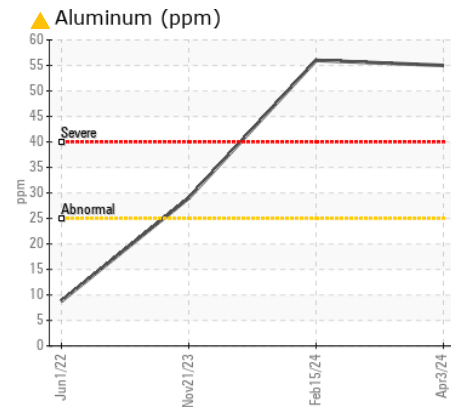
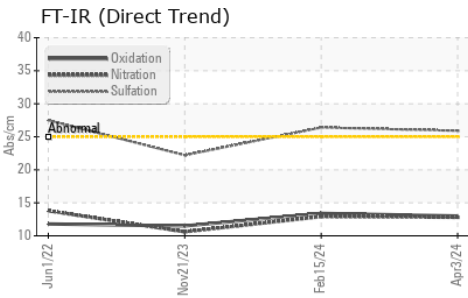
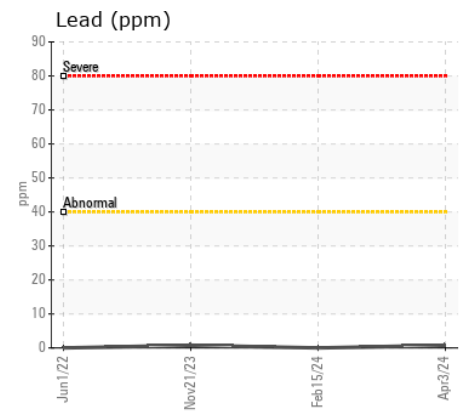
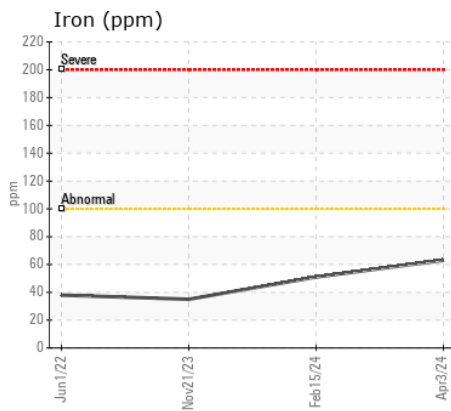
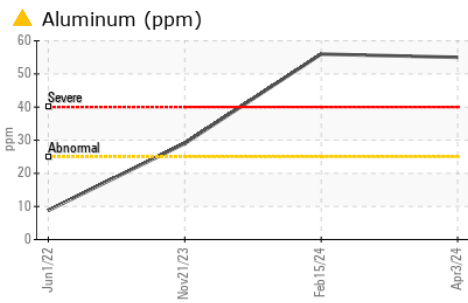
Sodium and/or potassium levels are high. Test for glycol is negative.

Silicon	ppm	ASTM D5185m	>25	10	10	8
Potassium	ppm	ASTM D5185m	>20	3	0	2
Fuel		WC Method	>5	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol	%	*ASTM D2982		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>3	2.6	2.7	1.8
Nitration	Abs/cm	*ASTM D7624	>20	12.8	12.9	10.6
Sulfation	Abs/.1mm	*ASTM D7415	>30	25.9	26.4	22.2
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	>0.2	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		● 105	● 117	● 106
Boron	ppm	ASTM D5185m		0	0	1
Barium	ppm	ASTM D5185m		<1	0	0
Molybdenum	ppm	ASTM D5185m		153	138	134
Manganese	ppm	ASTM D5185m		<1	1	<1
Magnesium	ppm	ASTM D5185m		96	89	76
Calcium	ppm	ASTM D5185m		4624	3989	3995
Phosphorus	ppm	ASTM D5185m		1077	866	949
Zinc	ppm	ASTM D5185m		1262	1108	1050
Sulfur	ppm	ASTM D5185m		5949	4226	4154
Oxidation	Abs/.1mm	*ASTM D7414	>25	13.0	13.4	11.5
Base Number (BN)	mg KOH/g	ASTM D2896		12.12	12.92	14.62
Visc @ 100°C	cSt	ASTM D445		16.1	16.1	15.6



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : TR06161034 **Received** : 25 Apr 2024
Lab Number : 06161034 **Tested** : 29 Apr 2024
Unique Number : 10996457 **Diagnosed** : 29 Apr 2024 - Don Baldrige
Test Package : MOB 2 (Additional Tests: Glycol)

BARR-TECH COMPOSTING
 9117 KALLENBERGER RD N
 SPRAGUE, WA
 US 99032
 Contact: RON 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)

T: (509)590-0437

F: