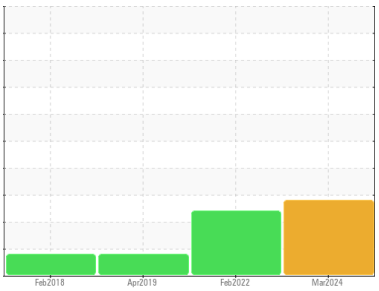
OIL ANALYSIS REPORT

Sample Rating Trend



DIRT

Area
K5 CONSTRUCTION CORPORATION - HODGKINS IL
Machine Id
4356
Component
Diesel Engine
Fluid
GASOLINE ENGINE OIL SAE 5W40 (15 hrs)

DIAGNOSIS

Recommendation
We advise that you check the fuel injection system. Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

Wear
All component wear rates are normal.

Contamination
Elemental level of silicon (Si) above normal indicating ingress of seal material. There is a moderate amount of fuel present in the oil.

Fluid Condition
Fuel is present in the oil and is lowering the viscosity. The BN result indicates that there is suitable alkalinity remaining in the oil.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**PCA0122081**	LW0004288	LWI-452157
Sample Date		Client Info		**28 Mar 2024**	11 Feb 2022	01 Apr 2019
Machine Age	hrs	Client Info		**8532**	6236	3487
Oil Age	hrs	Client Info		**2296**	205	225
Oil Changed		Client Info		**Changed**	Changed	Changed
Sample Status				**ABNORMAL**	SEVERE	MARGINAL

CONTAMINATION		method	limit/base	current	history1	history2
Water		WC Method	>0.2	**NEG**	NEG	NEG
Glycol		WC Method		**NEG**	NEG	NEG

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	**33**	16	23
Chromium	ppm	ASTM D5185m	>20	**1**	<1	0
Nickel	ppm	ASTM D5185m	>2	**0**	0	0
Titanium	ppm	ASTM D5185m	>2	**85**	87	100
Silver	ppm	ASTM D5185m	>2	**<1**	0	0
Aluminum	ppm	ASTM D5185m	>25	**4**	3	3
Lead	ppm	ASTM D5185m	>40	**0**	0	0
Copper	ppm	ASTM D5185m	>330	**3**	1	2
Tin	ppm	ASTM D5185m	>15	**<1**	0	0
Antimony	ppm	ASTM D5185m		**---**	0	0
Vanadium	ppm	ASTM D5185m		**<1**	<1	0
Cadmium	ppm	ASTM D5185m		**0**	0	0

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	75	**41**	78	55
Barium	ppm	ASTM D5185m	5	**0**	0	0
Molybdenum	ppm	ASTM D5185m	100	**0**	1	0
Manganese	ppm	ASTM D5185m		**<1**	<1	0
Magnesium	ppm	ASTM D5185m	12	**694**	625	730
Calcium	ppm	ASTM D5185m	2100	**1246**	1222	1393
Phosphorus	ppm	ASTM D5185m	650	**961**	949	1088
Zinc	ppm	ASTM D5185m	850	**1126**	1018	1208
Sulfur	ppm	ASTM D5185m	2500	**3775**	2894	---
Lithium	ppm	ASTM D5185m		**---**	---	0

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>25	▲ **26**	23	15
Sodium	ppm	ASTM D5185m		**5**	4	3
Potassium	ppm	ASTM D5185m	>20	**2**	2	3
Fuel	%	ASTM D3524	>5	▲ **5.4**	▲ 10.8	▲ 2.8

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>3	**0.5**	0.2	0.2
Nitration	Abs/cm	*ASTM D7624	>20	**12.7**	12.4	11
Sulfation	Abs/.1mm	*ASTM D7415	>30	**26.4**	23.9	---

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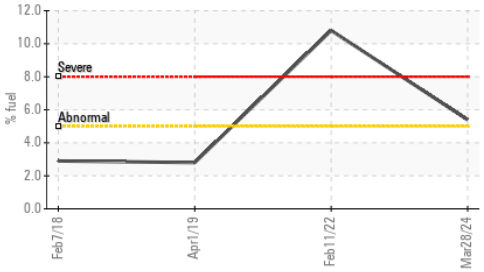
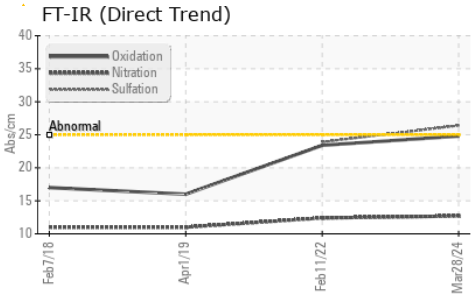
OIL DIAGNOSTICS

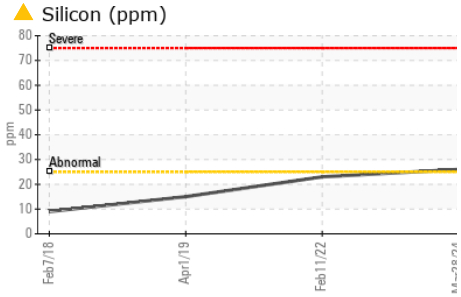
Fuel Dilution



FT-IR (Direct Trend)



Silicon (ppm)



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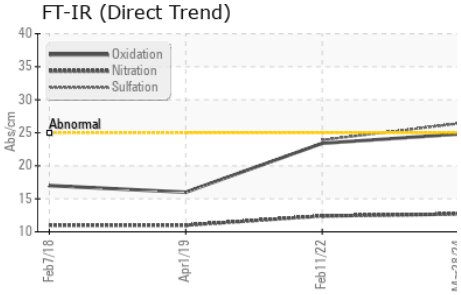
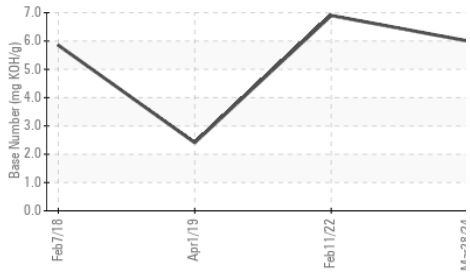


Base Number



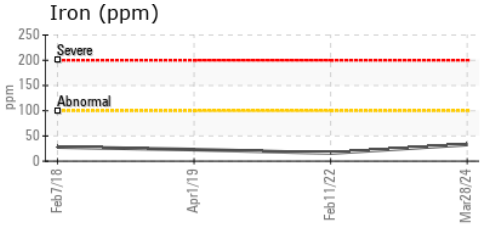
FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	**24.8**	23.4	16
Base Number (BN)	mg KOH/g	ASTM D2896		**6.0**	6.9	2.41

VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	---
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	---
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	---
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	---
Free Water	scalar	*Visual		**NEG**	NEG	---

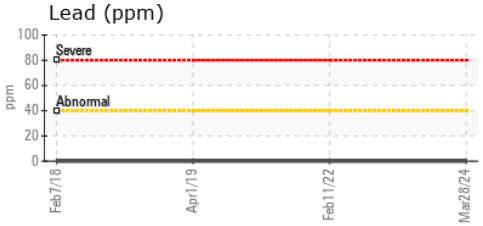
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	14.4	▲ **12.1**	▲ 11.7	13.2

GRAPHS

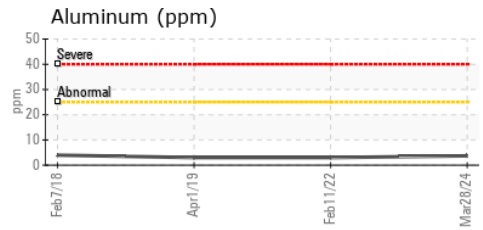
Iron (ppm)



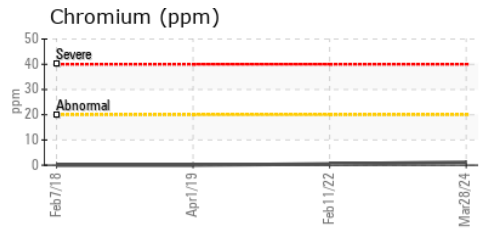
Lead (ppm)



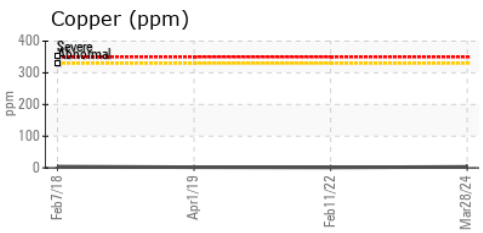
Aluminum (ppm)



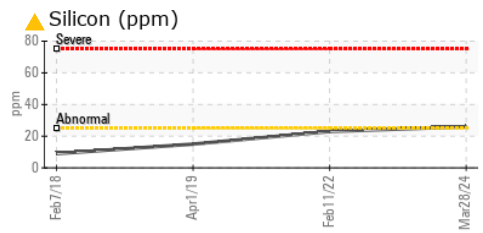
Chromium (ppm)



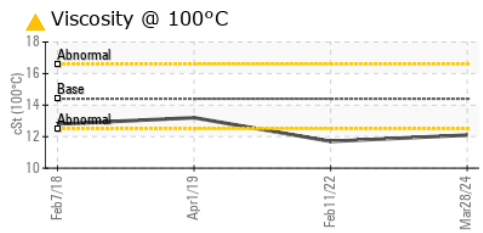
Copper (ppm)



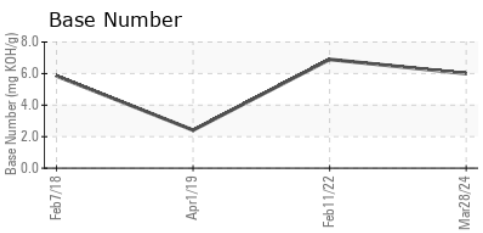
▲ Silicon (ppm)



▲ Viscosity @ 100°C



Base Number



ANAB ACCREDITED ISO/IEC 17025 TESTING LABORATORY
Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : PCA0122081
Lab Number : 06137104
Unique Number : 10956569
Test Package : MOB 1 (Additional Tests: PercentFuel, TBN)

Received : 03 Apr 2024
Tested : 05 Apr 2024
Diagnosed : 05 Apr 2024 - Sean Felton

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)

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Report Id: K5CWES [WUSCAR] 06137104 (Generated: 04/09/2024 15:23:17) Rev: 1

Submitted By: NOELLE TERRAULT