TRAAP
Texas Refinery Advanced Analysis Program

OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	ABNORMAL
FLUID CONDITION	NORMAL

Machine Id
KENWORTH T-800 BOB (S/N 127941)
Component
Diesel Engine
Fluid
TRC MOLY XL PRO-SPEC IV XP 15W40 (12 GAL)

RECOMMENDATION

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

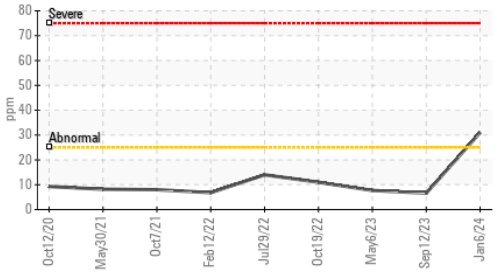
Elemental level of silicon (Si) above normal indicating ingress of seal material. No other contaminants were detected in the oil.

FLUID CONDITION

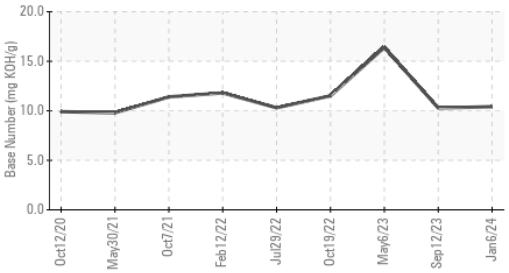
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is acceptable for the time in service.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		TR06056887	TR06033650	TR05861427
Sample Date		Client Info		06 Jan 2024	12 Sep 2023	06 May 2023
Machine Age	mls	Client Info		280689	260605	0
Oil Age	mls	Client Info		20084	20172	24029
Filter Age	mls	Client Info		20084	20172	24029
Oil Changed		Client Info		Changed	Changed	Changed
Filter Changed		Client Info		Changed	Changed	Changed
Sample Status				ABNORMAL	NORMAL	NORMAL
Iron	ppm	ASTM D5185m	>90	14	19	21
Chromium	ppm	ASTM D5185m	>20	<1	<1	1
Nickel	ppm	ASTM D5185m	>2	0	0	0
Titanium	ppm	ASTM D5185m	>2	<1	<1	<1
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>20	2	4	2
Lead	ppm	ASTM D5185m	>40	2	8	4
Copper	ppm	ASTM D5185m	>330	2	2	<1
Tin	ppm	ASTM D5185m	>15	<1	<1	0
Vanadium	ppm	ASTM D5185m		<1	0	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Silicon	ppm	ASTM D5185m	>25	▲ 31	7	8
Potassium	ppm	ASTM D5185m	>20	1	4	3
Fuel		WC Method	>3.0	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>6	0.2	0.2	0.3
Nitration	Abs/cm	*ASTM D7624	>20	11.0	12.1	12.4
Sulfation	Abs/.1mm	*ASTM D7415	>30	26.5	28.3	26.8
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
Sodium	ppm	ASTM D5185m		2	4	2
Boron	ppm	ASTM D5185m		2	2	2
Barium	ppm	ASTM D5185m		0	0	0
Molybdenum	ppm	ASTM D5185m		137	131	137
Manganese	ppm	ASTM D5185m		<1	<1	<1
Magnesium	ppm	ASTM D5185m		48	21	22
Calcium	ppm	ASTM D5185m		4407	4576	4927
Phosphorus	ppm	ASTM D5185m		1001	1035	984
Zinc	ppm	ASTM D5185m		1160	1194	1186
Sulfur	ppm	ASTM D5185m		4237	4703	5307
Oxidation	Abs/.1mm	*ASTM D7414	>25	15.7	17.0	15.4
Base Number (BN)	mg KOH/g	ASTM D2896		10.41	10.28	16.40
Visc @ 100°C	cSt	ASTM D445		15.5	15.8	15.5

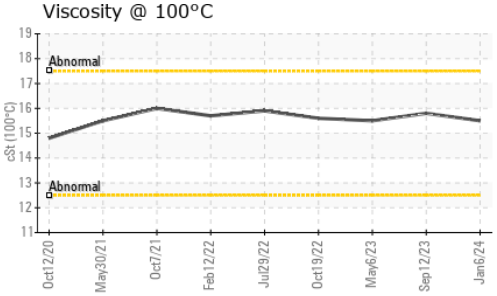
Silicon (ppm)



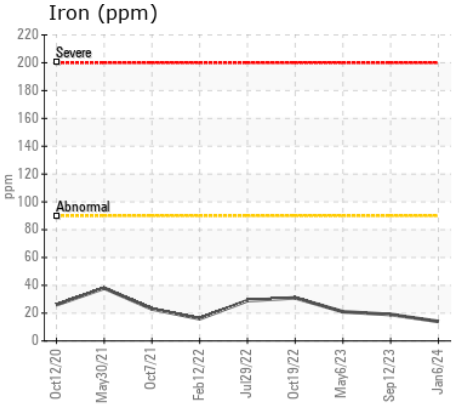
Base Number



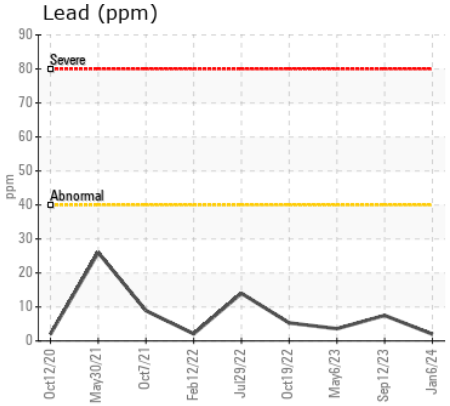
Viscosity @ 100°C



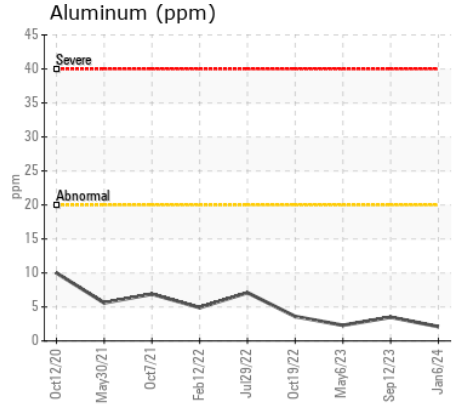
Iron (ppm)



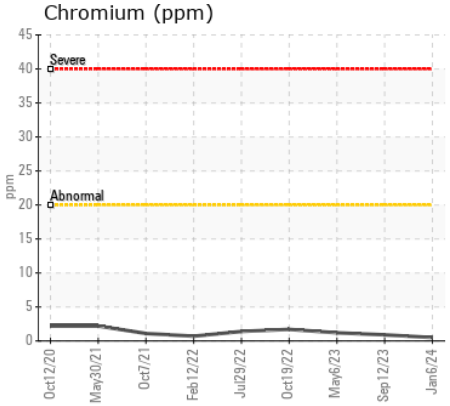
Lead (ppm)



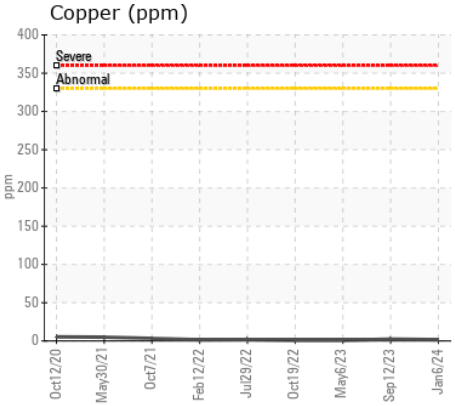
Aluminum (ppm)



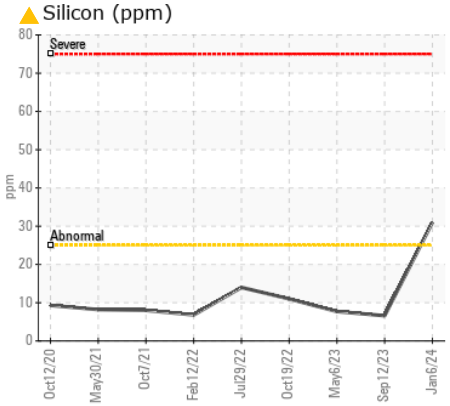
Chromium (ppm)



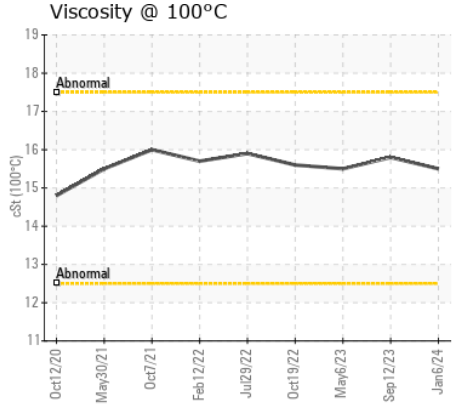
Copper (ppm)



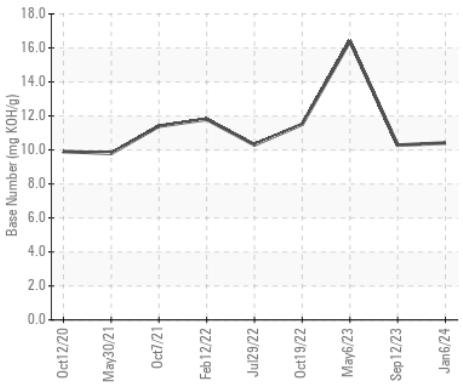
Silicon (ppm)



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory	: WearCheck USA - 501 Madison Ave., Cary, NC 27513		
Sample No.	: TR06056887	**Recieved**	: 10 Jan 2024
Lab Number	: 06056887	**Diagnosed**	: 11 Jan 2024
Unique Number	: 10822836	**Diagnostician**	: Angela Borella
Test Package	: MOB 2		

HANNEMAN FOREST PRODUCTS
13551 GREENWOOD RD
GLEN ALLEN, VA
US 23059
Contact: TIM SMITH

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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F: