TRAAP
Texas Refinery Advanced Analysis Program

OIL ANALYSIS REPORT

WEAR	ATTENTION
CONTAMINATION	ABNORMAL
FLUID CONDITION	NORMAL

Machine Id
FORD KEVA EXPEDITION
Component
Gasoline Engine
Fluid
TRC PRO-SPEC III SAE 10W30 (6 QTS)

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. Resample at the next service interval to monitor.

WEAR

All component wear rates are normal.

CONTAMINATION

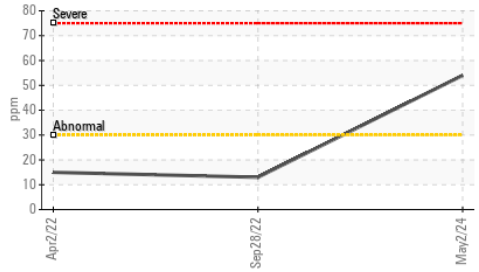
Elemental levels of silicon (Si) and aluminum (Al) indicate alumina-silicate (coarse dirt) ingress.

FLUID CONDITION

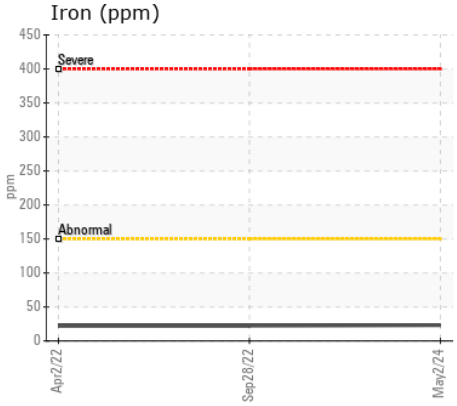
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is acceptable for the time in service.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		TR06174076	TR05659800	TR05517309
Sample Date		Client Info		02 May 2024	28 Sep 2022	02 Apr 2022
Machine Age	mls	Client Info		73423	121734	112500
Oil Age	mls	Client Info		8123	9234	10040
Filter Age	mls	Client Info		8123	9234	10040
Oil Changed		Client Info		Changed	Changed	Changed
Filter Changed		Client Info		Changed	Changed	Changed
Sample Status				ABNORMAL	NORMAL	NORMAL
Iron	ppm	ASTM D5185m	>150	23	22	22
Chromium	ppm	ASTM D5185m	>20	2	<1	1
Nickel	ppm	ASTM D5185m	>5	1	0	<1
Titanium	ppm	ASTM D5185m		<1	0	0
Silver	ppm	ASTM D5185m	>2	0	0	<1
Aluminum	ppm	ASTM D5185m	>40	7	3	5
Lead	ppm	ASTM D5185m	>50	<1	<1	<1
Copper	ppm	ASTM D5185m	>155	13	7	11
Tin	ppm	ASTM D5185m	>10	1	0	<1
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	>30	54	13	15
Potassium	ppm	ASTM D5185m	>20	7	<1	2
Fuel		WC Method	>4.0	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844		0.1	0.1	0.1
Nitration	Abs/cm	*ASTM D7624	>20	17.0	22.7	25.8
Sulfation	Abs/.1mm	*ASTM D7415	>30	31.7	36.9	40.0
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	>400	5	3	5
Boron	ppm	ASTM D5185m		6	0	3
Barium	ppm	ASTM D5185m		0	0	0
Molybdenum	ppm	ASTM D5185m		20	<1	2
Manganese	ppm	ASTM D5185m		2	2	3
Magnesium	ppm	ASTM D5185m		138	19	20
Calcium	ppm	ASTM D5185m	4500	6312	4364	4390
Phosphorus	ppm	ASTM D5185m		1612	945	921
Zinc	ppm	ASTM D5185m	1400	1838	1188	1033
Sulfur	ppm	ASTM D5185m		7175	4840	3646
Oxidation	Abs/.1mm	*ASTM D7414	>25	22.6	30.4	35.2
Base Number (BN)	mg KOH/g	ASTM D2896	15	8.71	8.00	8.01
Visc @ 100°C	cSt	ASTM D445	12.4	12.1	11.8	11.8

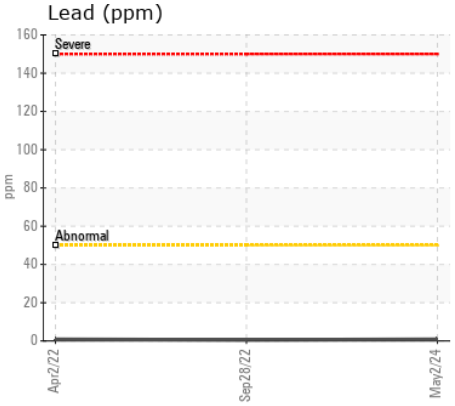
Silicon (ppm)



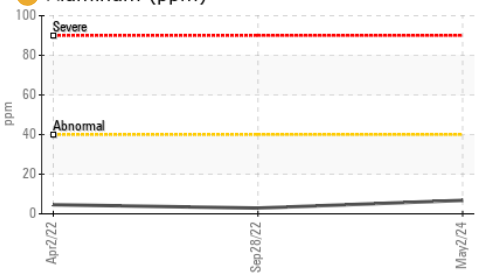
Iron (ppm)



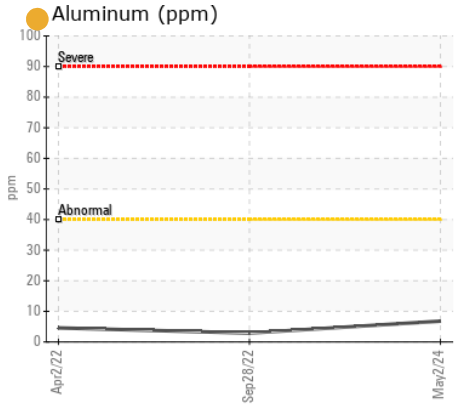
Lead (ppm)



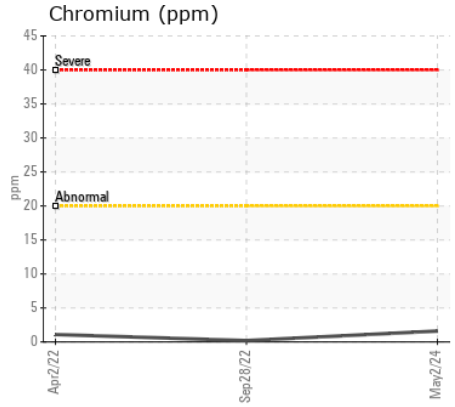
Aluminum (ppm)



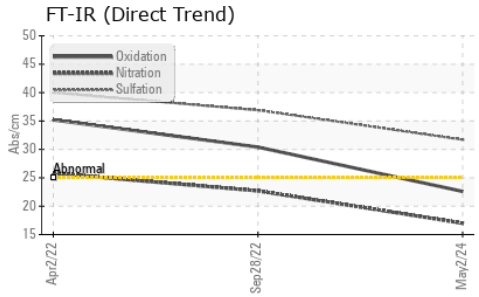
Aluminum (ppm)



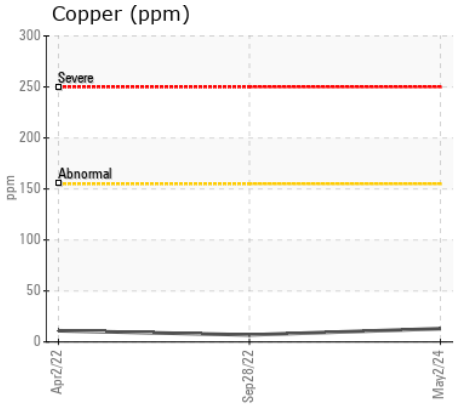
Chromium (ppm)



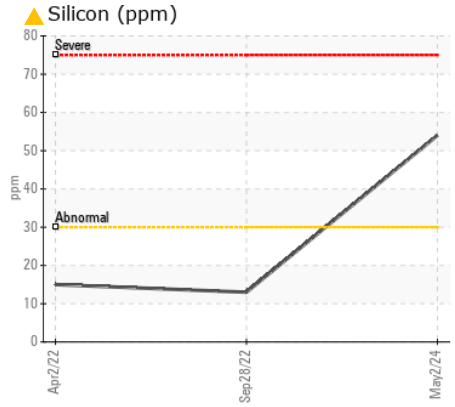
FT-IR (Direct Trend)



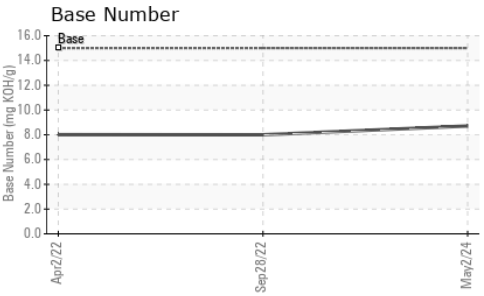
Copper (ppm)



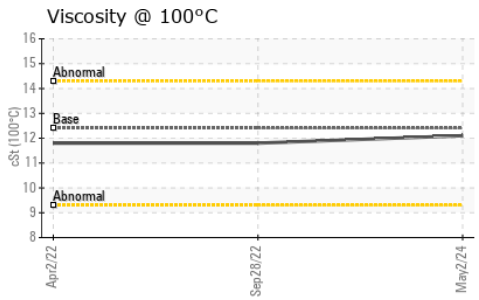
Silicon (ppm)



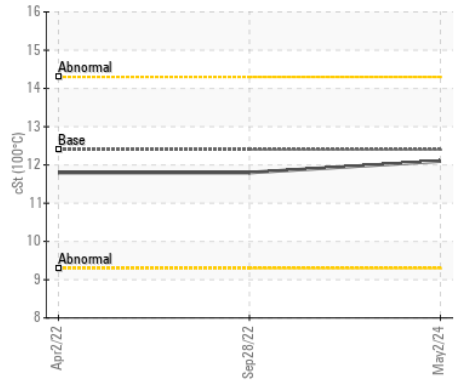
Base Number



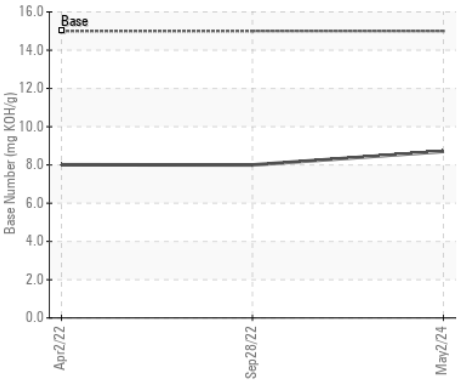
Viscosity @ 100°C



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory	: WearCheck USA - 501 Madison Ave., Cary, NC 27513		
Sample No.	: TR06174076	**Received**	: 09 May 2024
Lab Number	: 06174076	**Tested**	: 10 May 2024
Unique Number	: 11020129	**Diagnosed**	: 12 May 2024 - Don Baldridge
Test Package	: MOB 2		

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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