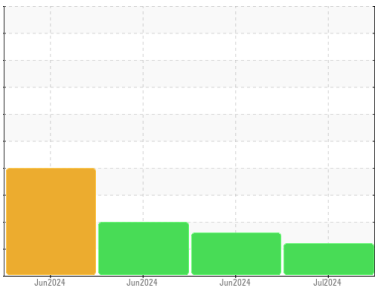
OIL ANALYSIS REPORT

Sample Rating Trend



ISO

Machine Id
FP60
Component
Diesel Engine
Fluid
DIESEL ENGINE OIL SAE 40 (--- GAL)

DIAGNOSIS

Recommendation
No corrective action is recommended at this time. Resample at the next service interval to monitor.

Wear
All component wear rates are normal.

Contamination
There is a moderate amount of particulates present in the oil.

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.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**KL0014468**	KL0014467	KL0014466
Sample Date		Client Info		**02 Jul 2024**	21 Jun 2024	18 Jun 2024
Machine Age	hrs	Client Info		**12212**	11952	11879
Oil Age	hrs	Client Info		**374**	114	40
Oil Changed		Client Info		**Not Changd**	Not Changd	Not Changd
Sample Status				**ATTENTION**	ATTENTION	ABNORMAL

CONTAMINATION		method	limit/base	current	history1	history2
Fuel		WC Method	>5	**<1.0**	<1.0	<1.0
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	**4**	<1	0
Chromium	ppm	ASTM D5185m	>20	**0**	0	0
Nickel	ppm	ASTM D5185m	>4	**0**	0	<1
Titanium	ppm	ASTM D5185m		**<1**	<1	<1
Silver	ppm	ASTM D5185m	>3	**0**	0	0
Aluminum	ppm	ASTM D5185m	>20	**2**	<1	<1
Lead	ppm	ASTM D5185m	>40	**0**	0	0
Copper	ppm	ASTM D5185m	>330	**<1**	0	0
Tin	ppm	ASTM D5185m	>15	**<1**	0	<1
Vanadium	ppm	ASTM D5185m		**0**	0	0
Cadmium	ppm	ASTM D5185m		**0**	0	<1

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	250	**76**	83	86
Barium	ppm	ASTM D5185m	10	**0**	0	0
Molybdenum	ppm	ASTM D5185m	100	**<1**	0	0
Manganese	ppm	ASTM D5185m		**0**	<1	<1
Magnesium	ppm	ASTM D5185m	450	**729**	715	733
Calcium	ppm	ASTM D5185m	3000	**1470**	1378	1411
Phosphorus	ppm	ASTM D5185m	1150	**1136**	1068	1089
Zinc	ppm	ASTM D5185m	1350	**1333**	1201	1251
Sulfur	ppm	ASTM D5185m	4250	**5518**	5109	5266

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>25	**4**	3	4
Sodium	ppm	ASTM D5185m	>216	**<1**	2	2
Potassium	ppm	ASTM D5185m	>20	**2**	2	3

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>3	**0.2**	0.1	0.1
Nitration	Abs/cm	*ASTM D7624	>20	**9.1**	6.3	6.0
Sulfation	Abs/.1mm	*ASTM D7415	>30	**21.4**	18.6	18.5

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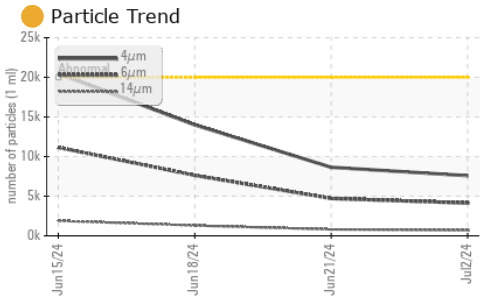
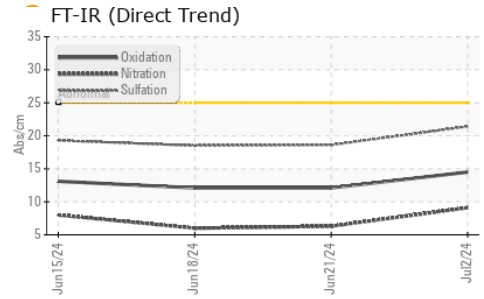
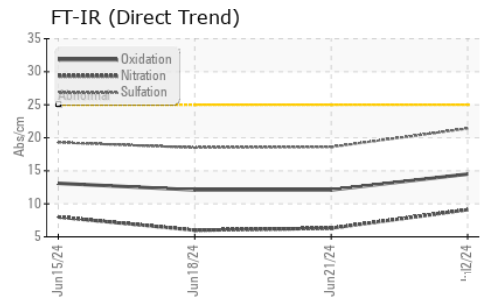
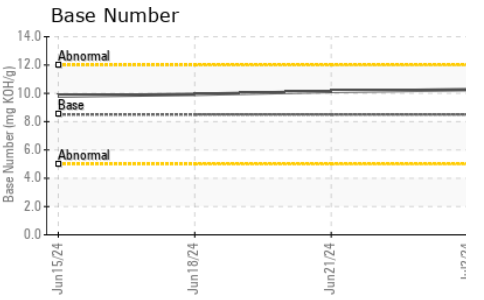
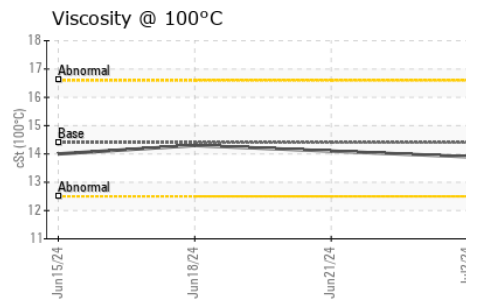










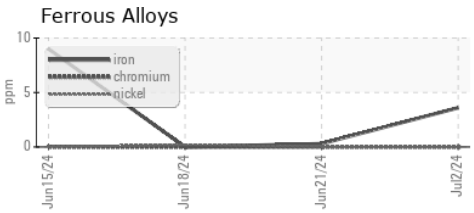
FLUID CLEANLINESS		method	limit/base	current	history1	history2
Particles >4µm		ASTM D7647	>20000	**7586**	8647	13998
Particles >6µm		ASTM D7647	>5000	**4133**	4711	7625
Particles >14µm		ASTM D7647	>640	**703**	802	1298
Particles >21µm		ASTM D7647	>160	**237**	270	437
Particles >38µm		ASTM D7647	>40	**37**	42	67
Particles >71µm		ASTM D7647	>10	**4**	4	7
Oil Cleanliness		ISO 4406 (c)	>21/19/16	**20/19/17**	20/19/17	21/20/17

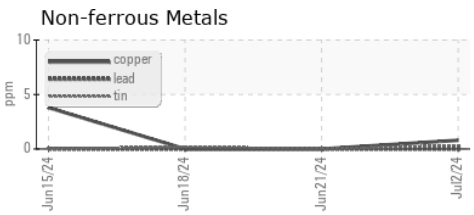
FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	**14.5**	12.1	12.1
Base Number (BN)	mg KOH/g	ASTM D2896	8.5	**10.26**	10.13	9.93

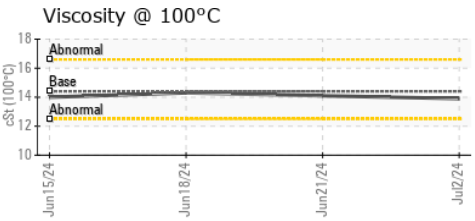
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	LIGHT	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Debris	scalar	*Visual	NONE	**NONE**	NONE	NONE
Sand/Dirt	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
Free Water	scalar	*Visual		**NEG**	NEG	NEG

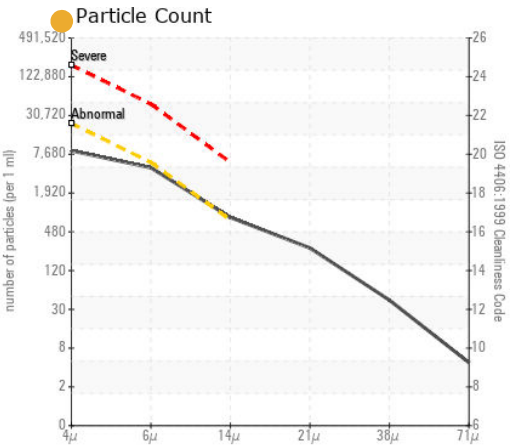
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	14.4	**13.9**	14.1	14.3

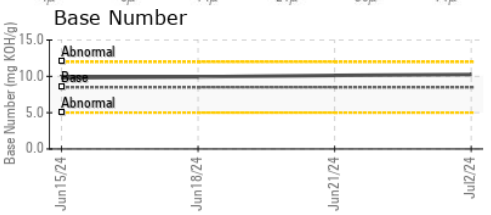
GRAPHS











Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : KL0014468
Lab Number : 06235120
Unique Number : 11123954
Test Package : MOB 2 (Additional Tests: PrtCount)

Received : 12 Jul 2024
Tested : 15 Jul 2024
Diagnosed : 15 Jul 2024 - Sean Felton

IRON CLAD ENERGY
9015 W COUNTY RD 127
MIDLAND, TX
US 79706
Contact: TREVOR FRENETTE

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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