



WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	ATTENTION

Machine Id
HYUNDAI E-1
Component
Diesel Engine
Fluid
FLEETLINE SUPERFLEET XHD 15W40 (14 GAL)

RECOMMENDATION

Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		LP0000875	LP0000860	LP0000852
Sample Date		Client Info		28 Feb 2024	04 Dec 2023	20 Nov 2023
Machine Age	hrs	Client Info		5631	5453	5359
Oil Age	hrs	Client Info		250	94	104
Filter Age	hrs	Client Info		250	94	104
Oil Changed		Client Info		Changed	Changed	Changed
Filter Changed		Client Info		Changed	Changed	Changed
Sample Status				ATTENTION	ATTENTION	ATTENTION

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>100	15	2	11
Chromium	ppm	ASTM D5185m	>20	1	<1	<1
Nickel	ppm	ASTM D5185m	>4	<1	0	0
Titanium	ppm	ASTM D5185m		<1	<1	<1
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>20	3	2	2
Lead	ppm	ASTM D5185m	>40	3	0	0
Copper	ppm	ASTM D5185m	>330	4	<1	0
Tin	ppm	ASTM D5185m	>15	2	<1	<1
Vanadium	ppm	ASTM D5185m		<1	0	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

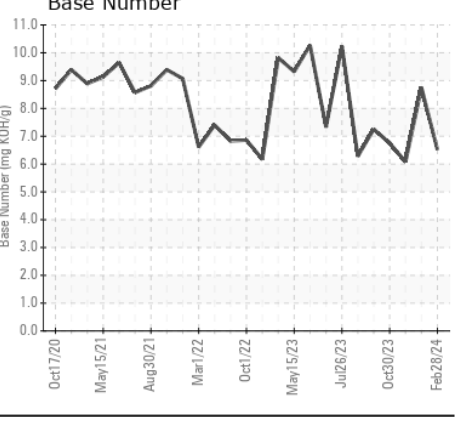
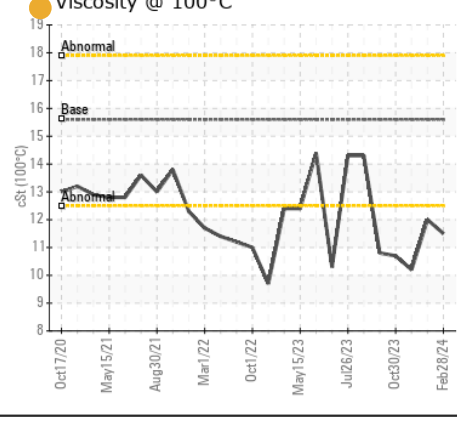
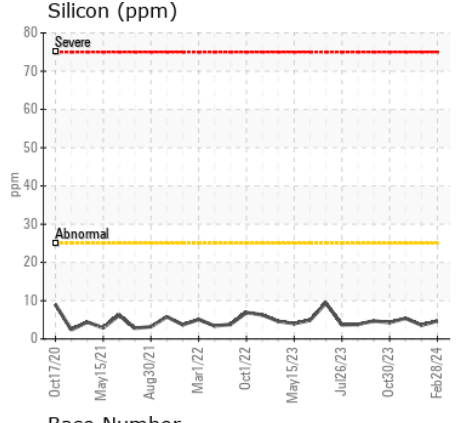
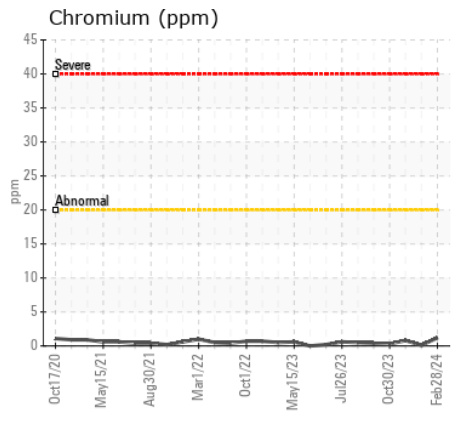
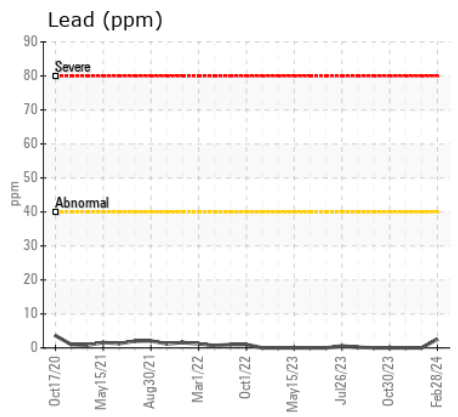
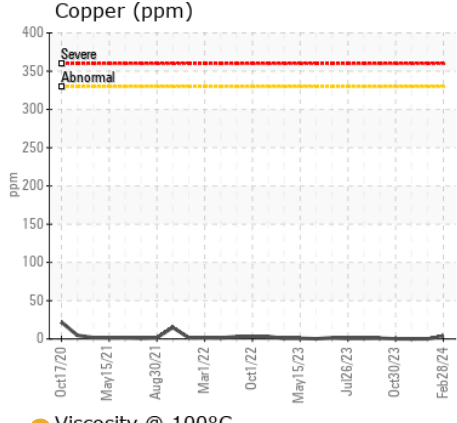
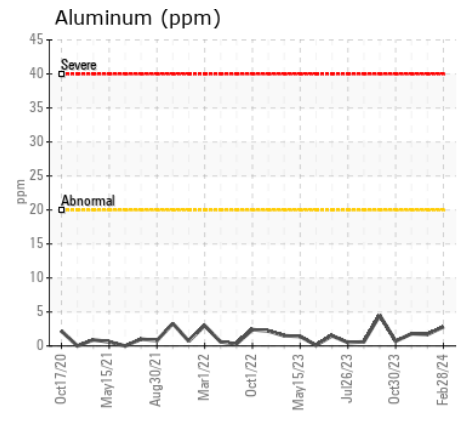
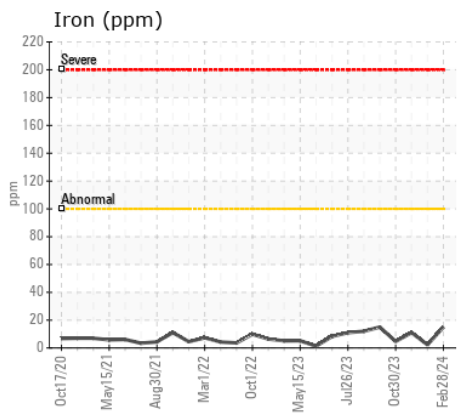
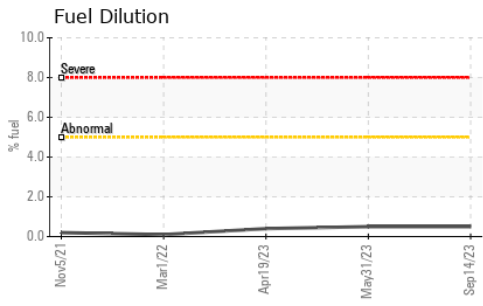
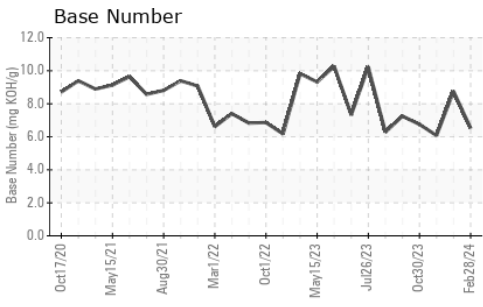
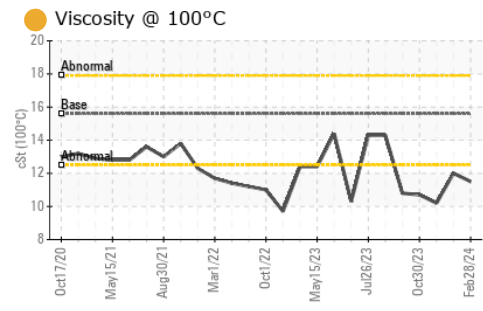
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>25	5	4	5
Potassium	ppm	ASTM D5185m	>20	1	2	0
Fuel	%	ASTM D3524	>5	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>3	0.5	0.5	1.3
Nitration	Abs/cm	*ASTM D7624	>20	6.9	5.5	5.4
Sulfation	Abs/.1mm	*ASTM D7415	>30	16.5	16.0	16.5
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 oil viscosity is lower than normal. The BN result indicates that there is suitable alkalinity remaining in the oil. Confirm oil type.

Sodium	ppm	ASTM D5185m		<1	<1	0
Boron	ppm	ASTM D5185m		19	33	7
Barium	ppm	ASTM D5185m		0	0	0
Molybdenum	ppm	ASTM D5185m		42	42	13
Manganese	ppm	ASTM D5185m		<1	<1	<1
Magnesium	ppm	ASTM D5185m		266	235	190
Calcium	ppm	ASTM D5185m		1770	1456	1260
Phosphorus	ppm	ASTM D5185m		820	817	727
Zinc	ppm	ASTM D5185m		1186	967	874
Sulfur	ppm	ASTM D5185m		3167	2936	2348
Oxidation	Abs/.1mm	*ASTM D7414	>25	10.2	9.3	7.7
Base Number (BN)	mg KOH/g	ASTM D2896		6.52	8.75	6.08
Visc @ 100°C	cSt	ASTM D445	15.6	11.5	12.0	10.2



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : LP0000875
Lab Number : 06103831
Unique Number : 10902061
Test Package : MOB 2 (Additional Tests: FuelDilution)

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Certificate L2367
 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)