



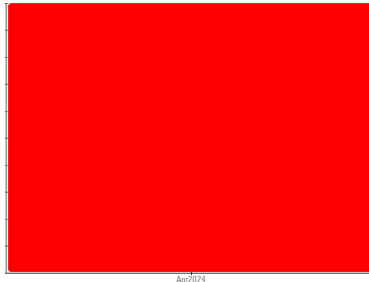
OIL ANALYSIS REPORT

Sample Rating Trend

WEAR



Area
{UNASSIGNED} [24065]
 Machine Id
HYUNDAI 2016 Hyundai Sonata
 Component
Gasoline Engine
 Fluid
SAE 5W30 (--- GAL)



DIAGNOSIS

▲ Recommendation

We advise that you check for the source of the coolant leak. We recommend that you drain the oil from the component if this has not already been done. We advise that you flush the component thoroughly before re-filling with oil. We recommend an early resample to monitor this condition. (Customer Sample Comment: 2016 Hyundai sonata engine oil - 5W30)

▲ Wear

Silver ppm levels are severe.

▲ Contamination

Test for glycol is positive. There is a moderate amount of fuel present in the oil. There is a light concentration of glycol present in the oil. There is a moderate concentration of water present in the oil. Free water present. Tests confirm the presence of fuel in the oil.

Fluid Condition

The BN result indicates that there is suitable alkalinity remaining in the oil. The oil is no longer serviceable as a result of the abnormal and/or severe wear.

SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		WC0779299	---	---
Sample Date	Client Info		15 Apr 2024	---	---
Machine Age	hrs	Client Info	0	---	---
Oil Age	hrs	Client Info	0	---	---
Oil Changed	Client Info		N/A	---	---
Sample Status			SEVERE	---	---

CONTAMINATION

	method	limit/base	current	history1	history2
Water	WC Method	>0.2	NEG	---	---

WEAR METALS

	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m)	>150	66	---
Chromium	ppm	ASTM D5185(m)	>20	<1	---
Nickel	ppm	ASTM D5185(m)	>5	<1	---
Titanium	ppm	ASTM D5185(m)		<1	---
Silver	ppm	ASTM D5185(m)	>2	▲ 7	---
Aluminum	ppm	ASTM D5185(m)	>40	7	---
Lead	ppm	ASTM D5185(m)	>50	0	---
Copper	ppm	ASTM D5185(m)	>155	6	---
Tin	ppm	ASTM D5185(m)	>10	<1	---
Antimony	ppm	ASTM D5185(m)		0	---
Vanadium	ppm	ASTM D5185(m)		<1	---
Beryllium	ppm	ASTM D5185(m)		0	---
Cadmium	ppm	ASTM D5185(m)		0	---

ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185(m)		26	---
Barium	ppm	ASTM D5185(m)		6	---
Molybdenum	ppm	ASTM D5185(m)		61	---
Manganese	ppm	ASTM D5185(m)		<1	---
Magnesium	ppm	ASTM D5185(m)		461	---
Calcium	ppm	ASTM D5185(m)		1328	---
Phosphorus	ppm	ASTM D5185(m)		589	---
Zinc	ppm	ASTM D5185(m)		758	---
Sulfur	ppm	ASTM D5185(m)		2068	---
Lithium	ppm	ASTM D5185(m)		1	---

CONTAMINANTS

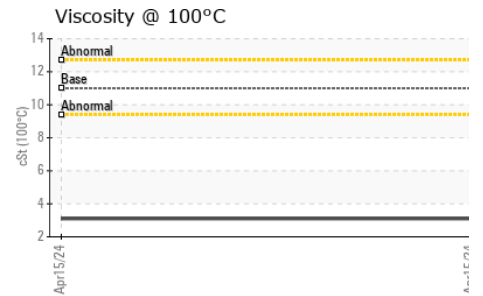
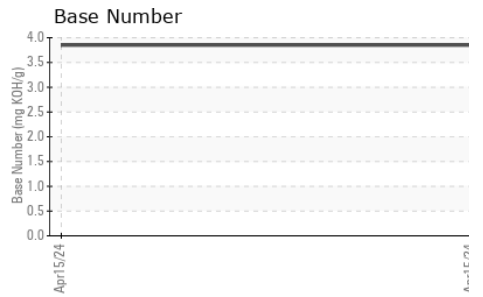
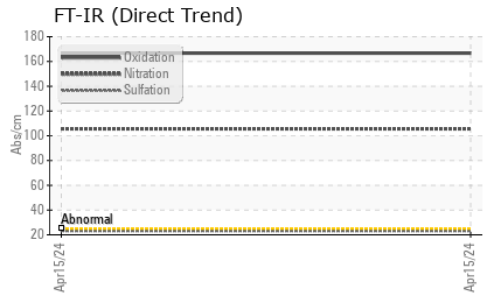
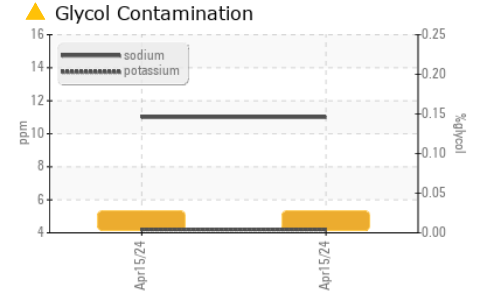
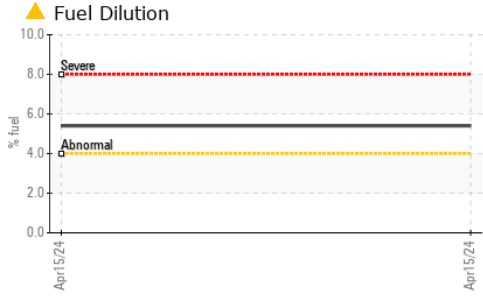
	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m)	>30	17	---
Sodium	ppm	ASTM D5185(m)	>400	11	---
Potassium	ppm	ASTM D5185(m)	>20	4	---
Fuel	%	ASTM D7593*	>4.0	▲ 5.4	---
Glycol	%	ASTM D7922*		▲ 0.027	---

INFRA-RED

	method	limit/base	current	history1	history2
Soot %	%	ASTM D7844*		2.8	---
Nitration	Abs/cm	ASTM D7624*	>20	105.6	---
Sulfation	Abs./1mm	ASTM D7415*	>30	23.1	---



OIL ANALYSIS REPORT

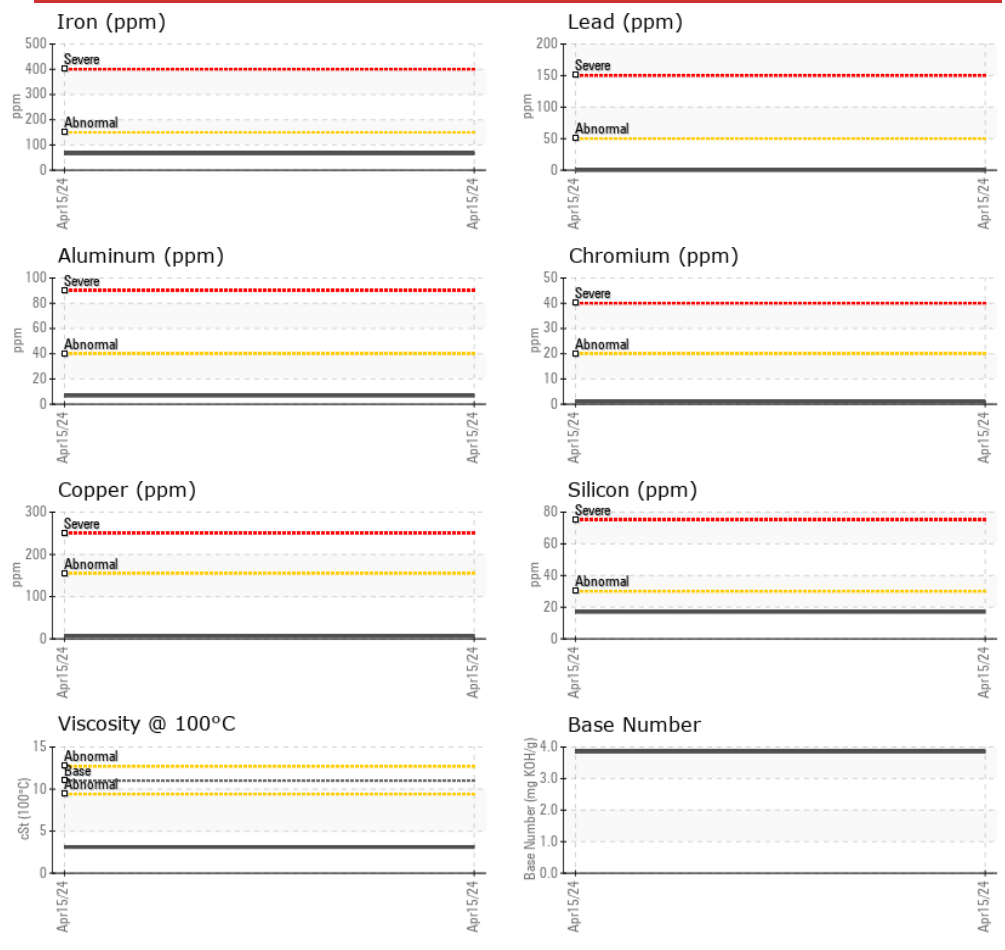


FLUID DEGRADATION	method	limit/base	current	history1	history2	
Oxidation	Abs./1mm	ASTM D7414*	>25	166.7	---	---
Base Number (BN)	mg KOH/g	ASTM D2896*		3.85	---	---

VISUAL	method	limit/base	current	history1	history2	
White Metal	scalar	Visual*	NONE	NONE	---	---
Yellow Metal	scalar	Visual*	NONE	NONE	---	---
Precipitate	scalar	Visual*	NONE	NONE	---	---
Silt	scalar	Visual*	NONE	NONE	---	---
Debris	scalar	Visual*	NONE	NONE	---	---
Sand/Dirt	scalar	Visual*	NONE	NONE	---	---
Appearance	scalar	Visual*	NORML	▲ LAYRD	---	---
Odor	scalar	Visual*	NORML	NORML	---	---
Emulsified Water	scalar	Visual*	>0.2	▲ 1%	---	---
Free Water	scalar	Visual*		▲ 5%	---	---

FLUID PROPERTIES	method	limit/base	current	history1	history2	
Visc @ 100°C	cSt	ASTM D7279(m)	11.0	3.1	---	---

GRAPHS



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : WC0779299 **Received** : 22 Apr 2024
Lab Number : 02630454 **Tested** : 24 Apr 2024
Unique Number : 5763586 **Diagnosed** : 24 Apr 2024 - Kevin Marson
Test Package : MOB 2 (Additional Tests: FuelDilution, Glycol, PercentFuel)

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To discuss this sample report, contact Customer Service at 1-800-268-2131.
 Test denoted (*) outside scope of accreditation, (m) method modified, (e) tested at external lab.
 Validity of results and interpretation are based on the sample and information as supplied.