



OIL ANALYSIS REPORT

WEAR
CONTAMINATION
FLUID CONDITION

ATTENTION
ABNORMAL
SEVERE

Machine Id
NISSAN ROGUE
Component
Gasoline Engine
Fluid
MOBIL 1 0W20 (--- QTS)

RECOMMENDATION

We advise that you check the air filter, air induction system, and any areas where dirt may enter the component. We recommend that you drain the oil from the component if this has not already been done. We recommend an early resample to monitor this condition.

WEAR

All component wear rates are normal.

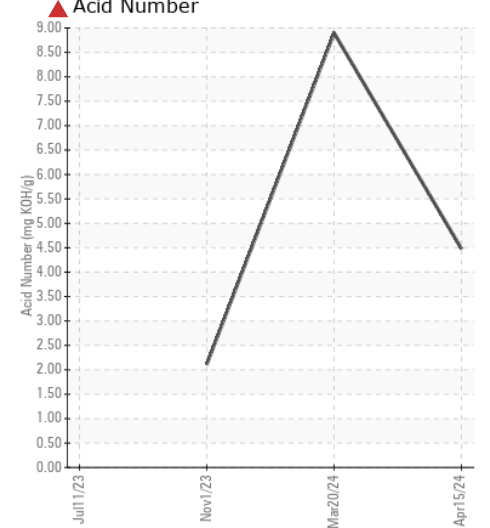
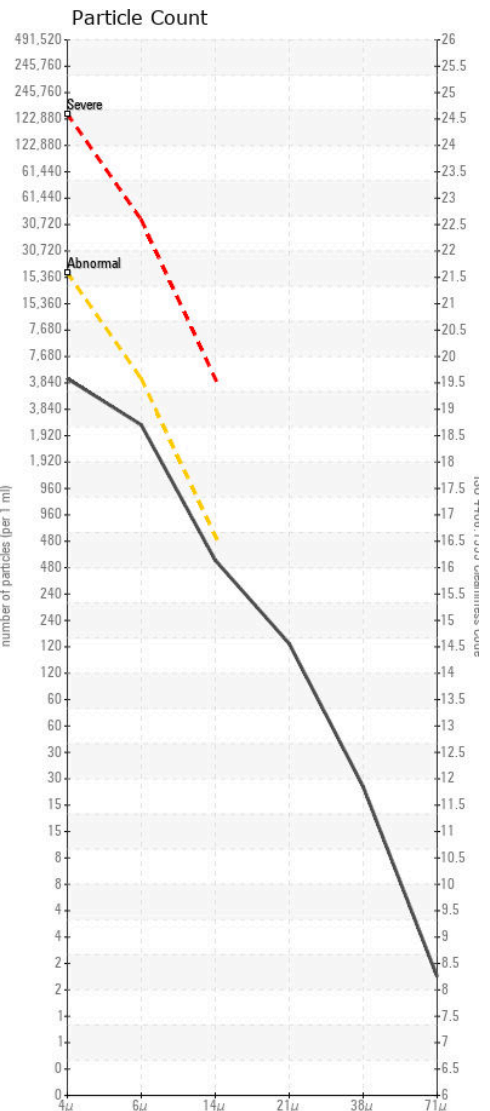
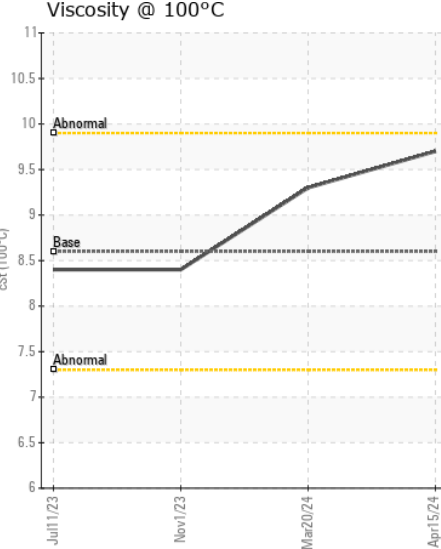
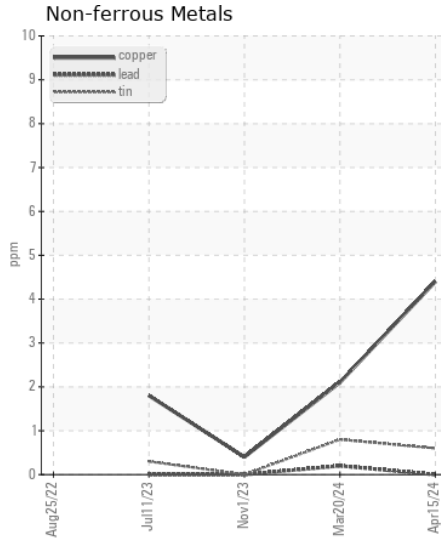
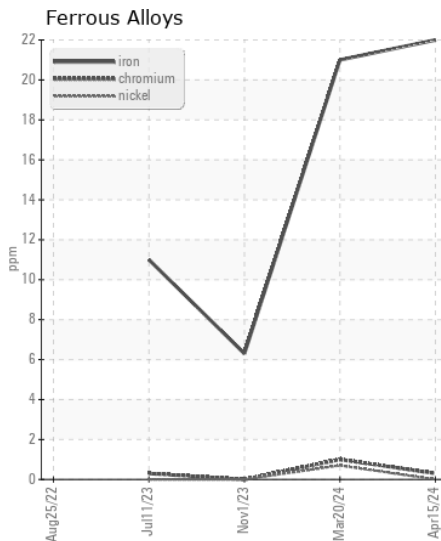
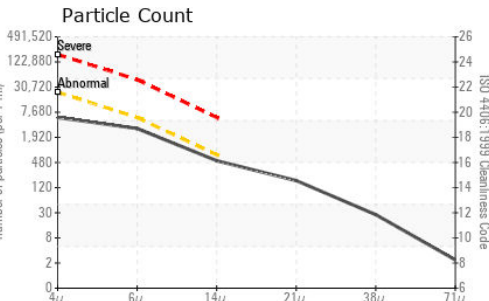
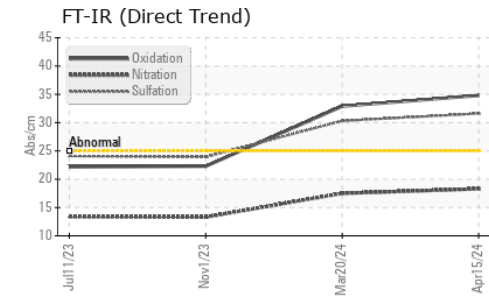
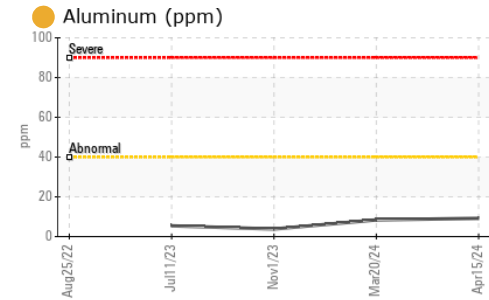
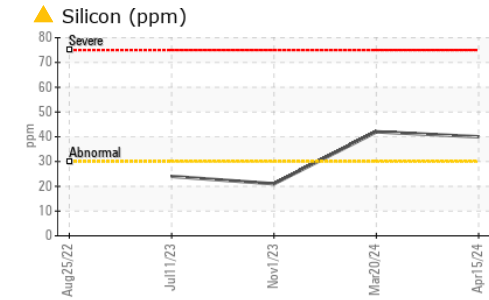
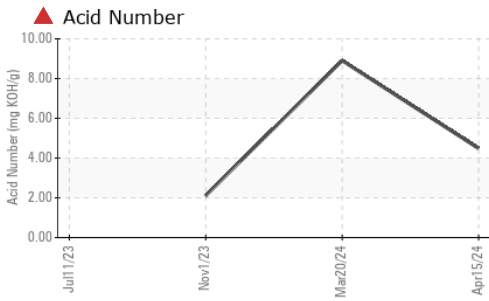
CONTAMINATION

Elemental levels of silicon (Si) and aluminum (Al) indicate alumina-silicate (coarse dirt) ingress. The amount and size of particulates present in the system are acceptable.

FLUID CONDITION

The AN level is above the recommended limit. The oil is no longer serviceable.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		WC0886233	WC0886234	WC0806717
Sample Date		Client Info		15 Apr 2024	20 Mar 2024	01 Nov 2023
Machine Age	mls	Client Info		161586	161113	152018
Oil Age	mls	Client Info		0	0	0
Filter Age	mls	Client Info		0	0	0
Oil Changed		Client Info		N/A	N/A	N/A
Filter Changed		Client Info		N/A	N/A	N/A
Sample Status				SEVERE	SEVERE	NORMAL
Iron	ppm	ASTM D5185m	>150	22	21	6
Chromium	ppm	ASTM D5185m	>20	<1	1	0
Nickel	ppm	ASTM D5185m	>5	0	<1	0
Titanium	ppm	ASTM D5185m		0	<1	0
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>40	9	8	4
Lead	ppm	ASTM D5185m	>50	0	<1	0
Copper	ppm	ASTM D5185m	>155	4	2	<1
Tin	ppm	ASTM D5185m	>10	<1	<1	0
Vanadium	ppm	ASTM D5185m		<1	<1	0
White Metal	scalar	*Visual	NONE	LIGHT	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Silicon	ppm	ASTM D5185m	>30	40	42	21
Potassium	ppm	ASTM D5185m	>20	3	2	9
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	18.3	17.5	13.3
Sulfation	Abs/.1mm	*ASTM D7415	>30	31.6	30.3	23.9
Particles >4µm		ASTM D7647	>20000	5011	8717	1122
Particles >6µm		ASTM D7647	>5000	2730	4749	611
Particles >14µm		ASTM D7647	>640	465	808	104
Particles >21µm		ASTM D7647	>160	156	272	35
Particles >38µm		ASTM D7647	>40	24	42	5
Particles >71µm		ASTM D7647	>10	2	4	1
Oil Cleanliness		ISO 4406 (c)	>21/19/16	20/19/16	20/19/17	17/16/14
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	3	3	3
Boron	ppm	ASTM D5185m	70	30	26	34
Barium	ppm	ASTM D5185m	0	0	0	0
Molybdenum	ppm	ASTM D5185m	60	98	101	93
Manganese	ppm	ASTM D5185m	0	2	2	<1
Magnesium	ppm	ASTM D5185m	620	704	668	686
Calcium	ppm	ASTM D5185m	875	725	737	703
Phosphorus	ppm	ASTM D5185m	450	725	643	653
Zinc	ppm	ASTM D5185m	525	870	838	853
Sulfur	ppm	ASTM D5185m	1300	2535	2140	2147
Oxidation	Abs/.1mm	*ASTM D7414	>25	34.8	32.9	22.3
Acid Number (AN)	mg KOH/g	ASTM D8045		4.48	8.898	2.11
Visc @ 100°C	cSt	ASTM D445	8.6	9.7	9.3	8.4



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0886233 **Received** : 17 Apr 2024
Lab Number : 06152168 **Tested** : 18 Apr 2024
Unique Number : 10982246 **Diagnosed** : 22 Apr 2024 - Jonathan Hester
Test Package : MOB 2 (Additional Tests: PrtCount)

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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)