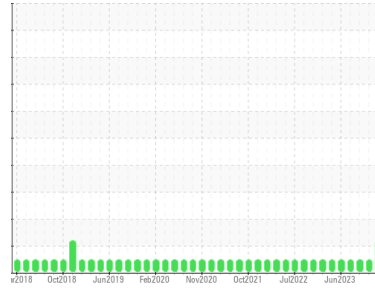




OIL ANALYSIS REPORT

Sample Rating Trend



ISO



Machine Id
ALLISON 231
 Component
Rear Transmission (Auto)
 Fluid
CASTROL TRANSYND (--- GAL)

DIAGNOSIS

Recommendation

We recommend you service the filters on this component. We recommend an early resample to monitor this condition.

Wear

All component wear rates are normal.

Contamination

There is a moderate amount of silt (particulates < 14 microns in size) present in the fluid.

Fluid Condition

The AN level is acceptable for this fluid. The fluid is still serviceable provided that the contaminant(s) can be reduced to acceptable levels.

SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		WC0866495	WC0866465	WC0816397
Sample Date	Client Info		21 Dec 2023	03 Nov 2023	18 Sep 2023
Machine Age	kms	Client Info	0	0	0
Oil Age	kms	Client Info	19110	9447	48098
Oil Changed	Client Info		Not Changed	Not Changed	Not Changed
Sample Status			ABNORMAL	NORMAL	NORMAL

CONTAMINATION

	method	limit/base	current	history1	history2
Water	WC Method	>0.1	NEG	NEG	NEG

WEAR METALS

	method	limit/base	current	history1	history2	
Iron	ppm	ASTM D5185(m)	>230	30	33	56
Chromium	ppm	ASTM D5185(m)	>2	0	0	0
Nickel	ppm	ASTM D5185(m)	>5	0	<1	0
Titanium	ppm	ASTM D5185(m)	>2	0	0	0
Silver	ppm	ASTM D5185(m)	>5	0	<1	<1
Aluminum	ppm	ASTM D5185(m)	>65	5	5	8
Lead	ppm	ASTM D5185(m)	>55	1	2	3
Copper	ppm	ASTM D5185(m)	>85	6	7	12
Tin	ppm	ASTM D5185(m)	>5	0	0	<1
Antimony	ppm	ASTM D5185(m)		0	0	0
Vanadium	ppm	ASTM D5185(m)		0	0	0
Beryllium	ppm	ASTM D5185(m)		0	0	0
Cadmium	ppm	ASTM D5185(m)		0	0	0

ADDITIVES

	method	limit/base	current	history1	history2	
Boron	ppm	ASTM D5185(m)	150	75	82	85
Barium	ppm	ASTM D5185(m)	0	0	<1	<1
Molybdenum	ppm	ASTM D5185(m)	0	0	0	0
Manganese	ppm	ASTM D5185(m)		0	0	0
Magnesium	ppm	ASTM D5185(m)	0	1	<1	1
Calcium	ppm	ASTM D5185(m)	40	126	127	126
Phosphorus	ppm	ASTM D5185(m)	320	236	242	281
Zinc	ppm	ASTM D5185(m)	5	3	4	5
Sulfur	ppm	ASTM D5185(m)	1050	1593	1566	1655
Lithium	ppm	ASTM D5185(m)		<1	<1	<1

CONTAMINANTS

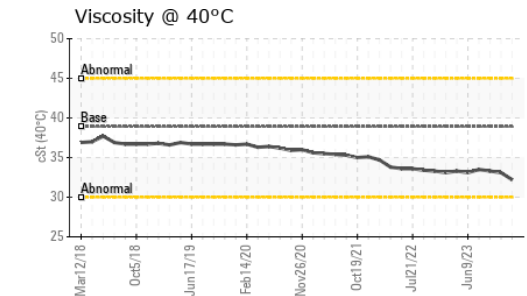
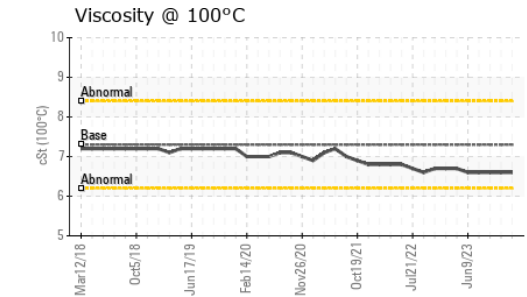
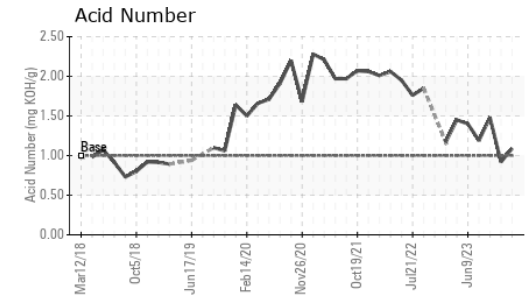
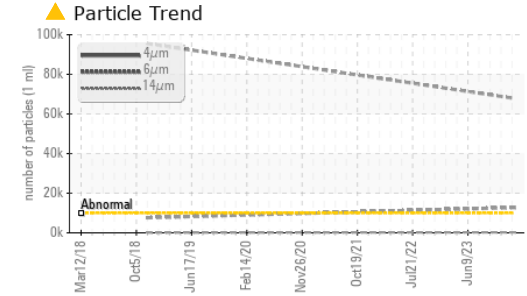
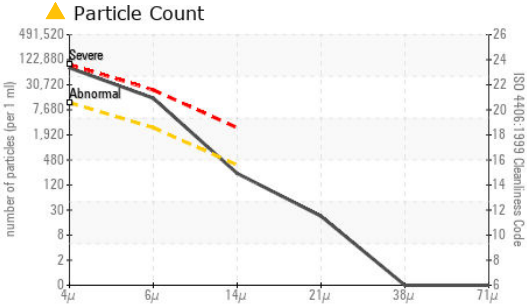
	method	limit/base	current	history1	history2	
Silicon	ppm	ASTM D5185(m)	>20	8	6	10
Sodium	ppm	ASTM D5185(m)		3	3	6
Potassium	ppm	ASTM D5185(m)	>20	1	<1	<1

FLUID CLEANLINESS

	method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647	>10000	▲ 67993	---	---
Particles >6µm	ASTM D7647	>2500	▲ 12707	---	---
Particles >14µm	ASTM D7647	>320	201	---	---
Particles >21µm	ASTM D7647	>80	19	---	---
Particles >38µm	ASTM D7647	>20	0	---	---
Particles >71µm	ASTM D7647	>4	0	---	---
Oil Cleanliness	ISO 4406 (c)	>20/18/15	▲ 23/21/15	---	---



OIL ANALYSIS REPORT

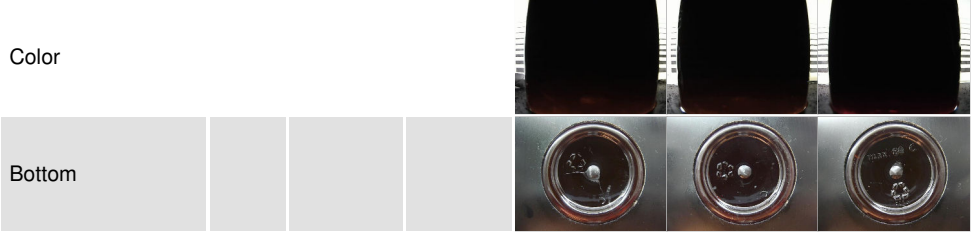


FLUID DEGRADATION	method	limit/base	current	history1	history2	
Acid Number (AN)	mg KOH/g	ASTM D974*	1.0	1.09	0.92	1.48

VISUAL	method	limit/base	current	history1	history2	
White Metal	scalar	Visual*	NONE	NONE	NONE	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*	>0.1	NEG	NEG	NEG
Free Water	scalar	Visual*		NEG	NEG	NEG

FLUID PROPERTIES	method	limit/base	current	history1	history2	
Visc @ 40°C	cSt	ASTM D7279(m)	38.9	32.2	33.1	33.3
Visc @ 100°C	cSt	ASTM D7279(m)	7.3	6.6	6.6	6.6
Viscosity Index (VI)	Scale	ASTM D2270*	168	166	159	158

SAMPLE IMAGES



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : WC0866495 **Received** : 27 Dec 2023
Lab Number : **02605336** **Diagnosed** : 28 Dec 2023
Unique Number : 5698421 **Diagnostician** : Wes Davis
Test Package : MOB 2 (Additional Tests: KV100, PrtCount, VI)

CITY OF THUNDER BAY
 AUTO MAINTENANCE STORES, 570 FORT WILLIAM ROAD
 THUNDER BAY, ON
 CA P7B 2Z8
 Contact: Sean Malcolm
 sean.malcolm@thunderbay.ca
 T: (807)684-2716
 F: (807)344-0237

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.