



WEAR	NORMAL
CONTAMINATION	ABNORMAL
FLUID CONDITION	NORMAL

Area
WILLARD HAMMOND
Machine Id
[WILLARD HAMMOND] 010 587215-10
Component
Steering
Fluid
NEPTUNE AW 46 (--- GAL)

RECOMMENDATION

We recommend you service the filters on this component. Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		MW0070933	MW0068075	MW0068044
Sample Date		Client Info		01 May 2024	31 Mar 2024	14 Mar 2024
Machine Age	hrs	Client Info		0	0	0
Oil Age	hrs	Client Info		0	12822	0
Filter Age	hrs	Client Info		0	12822	0
Oil Changed		Client Info		N/A	N/A	N/A
Filter Changed		Client Info		N/A	N/A	N/A
Sample Status				ABNORMAL	ABNORMAL	ABNORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>50	2	9	19
Chromium	ppm	ASTM D5185m	>15	0	2	1
Nickel	ppm	ASTM D5185m	>5	1	<1	<1
Titanium	ppm	ASTM D5185m		0	<1	<1
Silver	ppm	ASTM D5185m		<1	0	0
Aluminum	ppm	ASTM D5185m	>5	1	1	<1
Lead	ppm	ASTM D5185m	>10	1	6	4
Copper	ppm	ASTM D5185m	>50	5	7	21
Tin	ppm	ASTM D5185m	>5	<1	1	1
Vanadium	ppm	ASTM D5185m		<1	<1	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

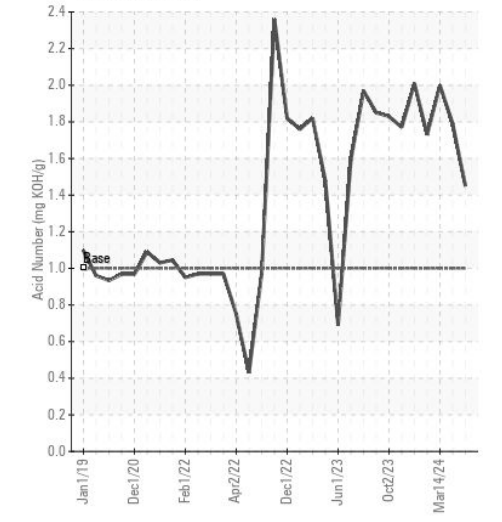
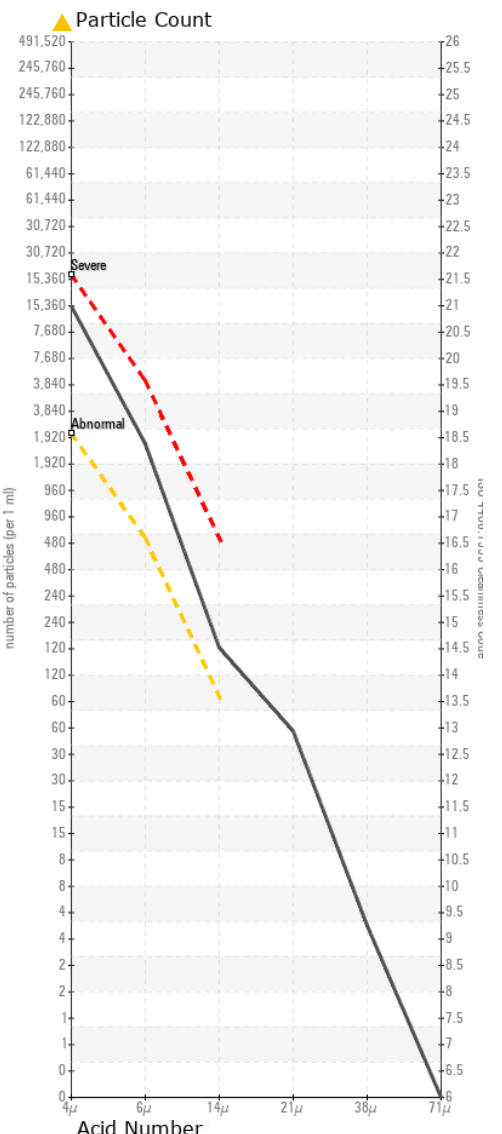
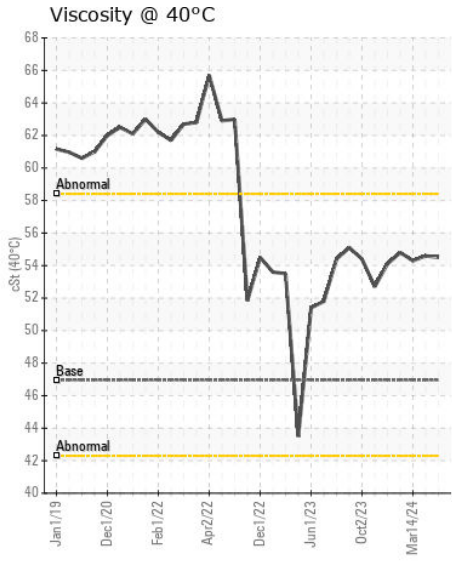
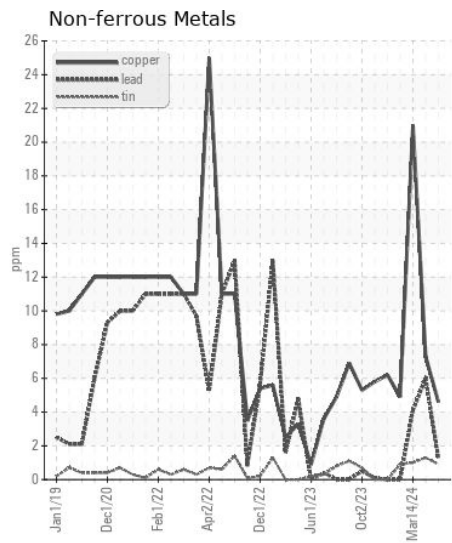
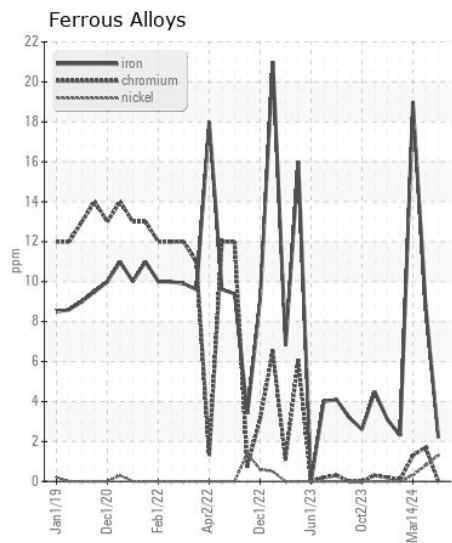
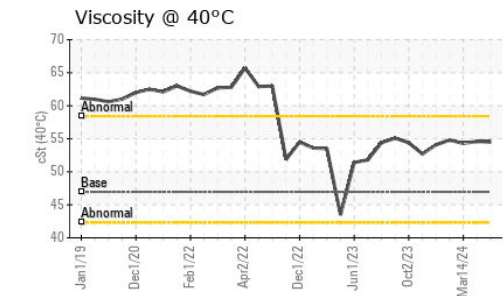
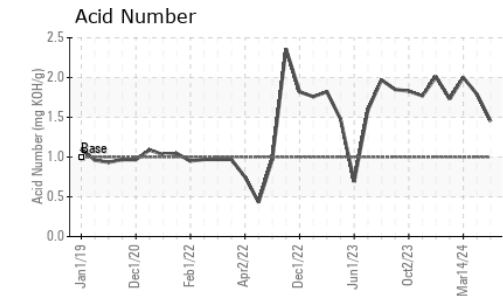
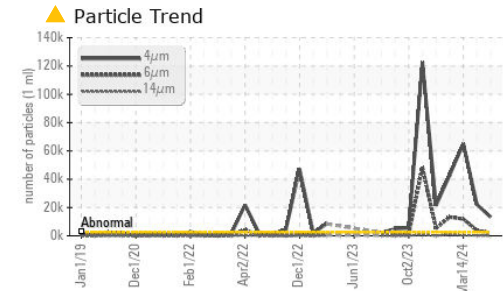
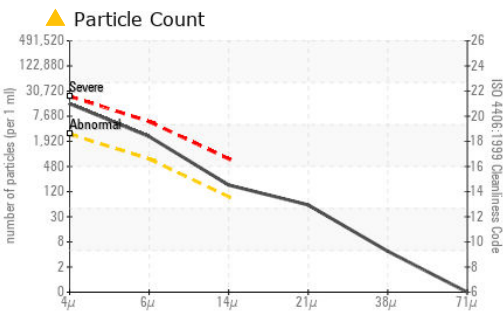
There is a high amount of particulates present in the fluid.

Silicon	ppm	ASTM D5185m	>15	1	<1	1
Potassium	ppm	ASTM D5185m	>20	5	3	3
Water		WC Method	>0.2	NEG	NEG	NEG
Particles >4µm		ASTM D7647	>2500	▲ 13263	▲ 22073	▲ 65038
Particles >6µm		ASTM D7647	>640	▲ 2190	▲ 3750	▲ 11892
Particles >14µm		ASTM D7647	>80	▲ 152	▲ 208	▲ 324
Particles >21µm		ASTM D7647	>20	▲ 51	▲ 54	▲ 65
Particles >38µm		ASTM D7647	>4	4	2	2
Particles >71µm		ASTM D7647	>3	0	0	0
Oil Cleanliness		ISO 4406 (c)	>18/16/13	▲ 21/18/14	▲ 22/19/15	▲ 23/21/16
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 AN level is acceptable for this fluid. The condition of the fluid is suitable for further service.

Sodium	ppm	ASTM D5185m		3	16	15
Boron	ppm	ASTM D5185m		5	0	0
Barium	ppm	ASTM D5185m		0	<1	0
Molybdenum	ppm	ASTM D5185m		0	1	0
Manganese	ppm	ASTM D5185m		<1	1	2
Magnesium	ppm	ASTM D5185m		4	2	3
Calcium	ppm	ASTM D5185m		9	87	85
Phosphorus	ppm	ASTM D5185m		367	115	189
Zinc	ppm	ASTM D5185m		126	51	80
Sulfur	ppm	ASTM D5185m		487	1158	1244
Acid Number (AN)	mg KOH/g	ASTM D8045	1.0	1.45	1.79	2.00
Visc @ 40°C	cSt	ASTM D445	46.96	54.5	54.6	54.3



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : MW0070933 **Received** : 28 May 2024
Lab Number : 06192759 **Tested** : 30 May 2024
Unique Number : 11049511 **Diagnosed** : 30 May 2024 - Don Baldrige
Test Package : MAR 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)