



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		MW0070941	MW0072272	MW0070933
Sample Date		Client Info		01 Jul 2024	01 Jun 2024	01 May 2024
Machine Age	hrs	Client Info		0	0	0
Oil Age	hrs	Client Info		0	0	0
Filter Age	hrs	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				ABNORMAL	NORMAL	ABNORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>50	8	4	2
Chromium	ppm	ASTM D5185m	>15	<1	0	0
Nickel	ppm	ASTM D5185m	>5	0	2	1
Titanium	ppm	ASTM D5185m		0	0	0
Silver	ppm	ASTM D5185m		0	<1	<1
Aluminum	ppm	ASTM D5185m	>5	0	1	1
Lead	ppm	ASTM D5185m	>10	3	<1	1
Copper	ppm	ASTM D5185m	>50	5	7	5
Tin	ppm	ASTM D5185m	>5	0	0	<1
Vanadium	ppm	ASTM D5185m		0	<1	<1
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

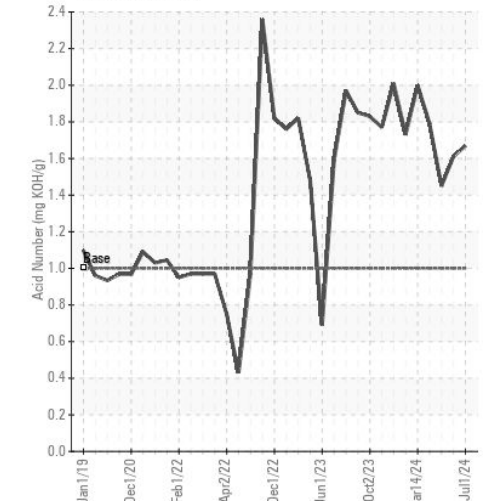
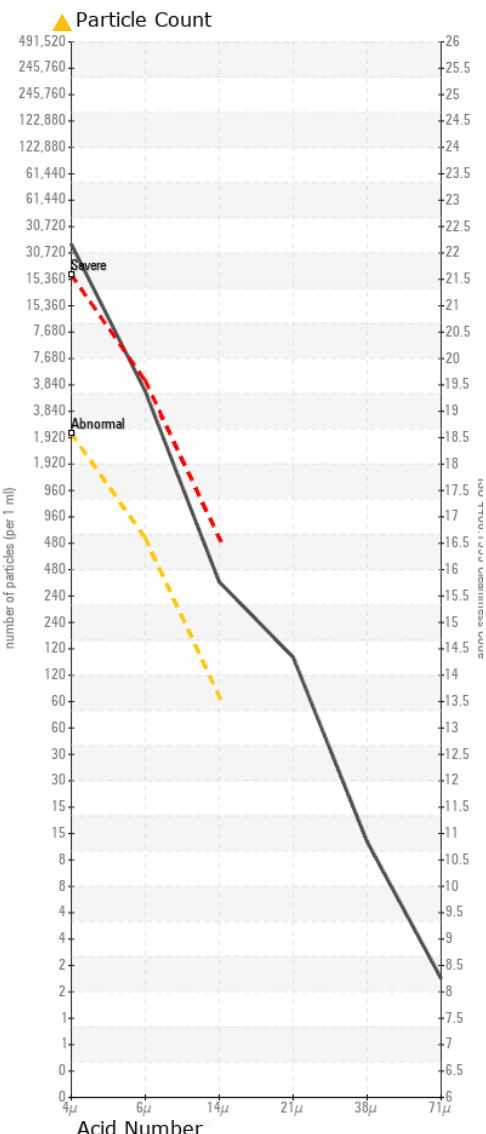
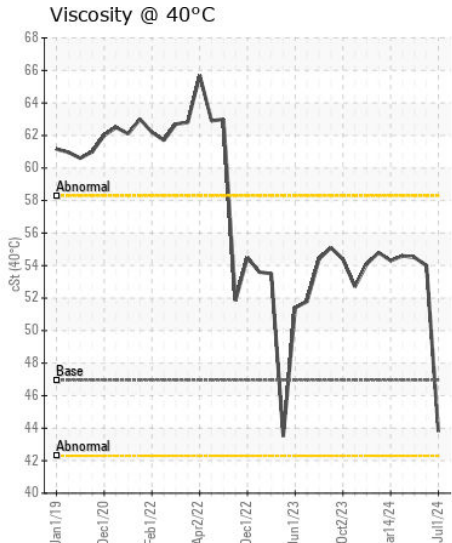
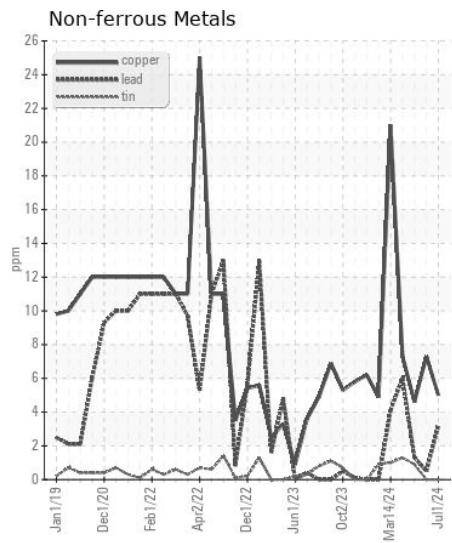
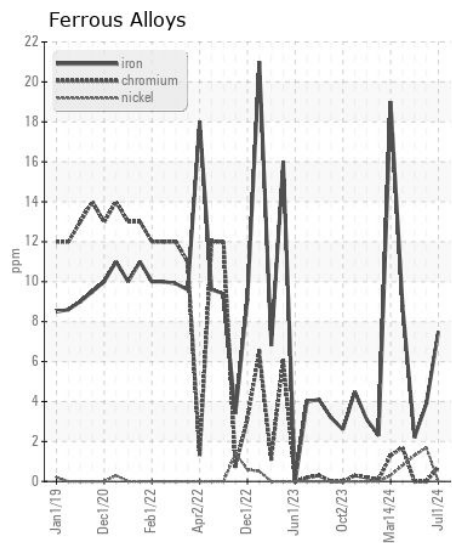
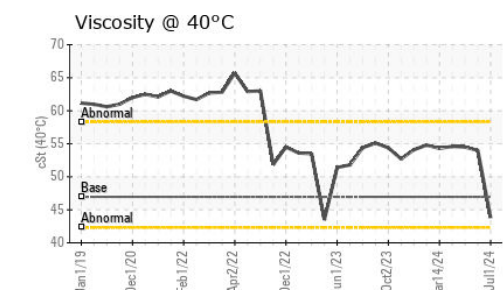
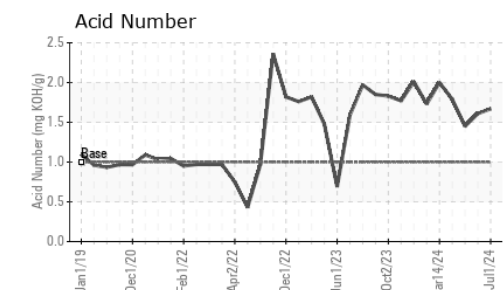
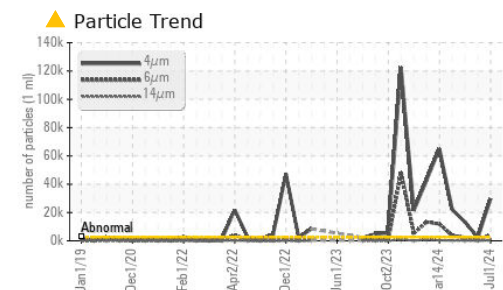
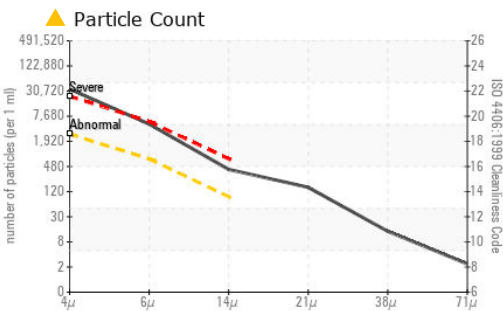
There is a high amount of particulates present in the fluid.

Silicon	ppm	ASTM D5185m	>15	<1	1	1
Potassium	ppm	ASTM D5185m	>20	2	5	5
Water		WC Method	>0.2	NEG	NEG	NEG
Particles >4µm		ASTM D7647	>2500	▲ 29764	2246	▲ 13263
Particles >6µm		ASTM D7647	>640	▲ 4359	475	▲ 2190
Particles >14µm		ASTM D7647	>80	▲ 359	19	▲ 152
Particles >21µm		ASTM D7647	>20	▲ 134	4	▲ 51
Particles >38µm		ASTM D7647	>4	▲ 12	0	4
Particles >71µm		ASTM D7647	>3	2	0	0
Oil Cleanliness		ISO 4406 (c)	>18/16/13	▲ 22/19/16	18/16/11	▲ 21/18/14
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

FLUID CONDITION

The AN level is acceptable for this fluid. The condition of the fluid is suitable for further service.

Sodium	ppm	ASTM D5185m		18	4	3
Boron	ppm	ASTM D5185m		0	12	5
Barium	ppm	ASTM D5185m		0	0	0
Molybdenum	ppm	ASTM D5185m		0	0	0
Manganese	ppm	ASTM D5185m		<1	1	<1
Magnesium	ppm	ASTM D5185m		2	5	4
Calcium	ppm	ASTM D5185m		102	18	9
Phosphorus	ppm	ASTM D5185m		102	409	367
Zinc	ppm	ASTM D5185m		47	152	126
Sulfur	ppm	ASTM D5185m		1172	674	487
Acid Number (AN)	mg KOH/g	ASTM D8045	1.0	1.67	1.61	1.45
Visc @ 40°C	cSt	ASTM D445	46.96	43.8	54.0	54.5



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : MW0070941 **Received** : 15 Jul 2024
Lab Number : 06236768 **Tested** : 17 Jul 2024
Unique Number : 11125602 **Diagnosed** : 17 Jul 2024 - Don Baldridge
Test Package : MAR 2 (Additional Tests: PrtCount)

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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)