



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		MW0068042	MW0064392	MW0058399
Sample Date		Client Info		01 Feb 2024	01 Jan 2024	29 Nov 2023
Machine Age	hrs	Client Info		0	2668	0
Oil Age	hrs	Client Info		0	0	0
Filter Age	hrs	Client Info		3304	0	1912
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	3	4
Chromium	ppm	ASTM D5185m	>15	<1	<1	<1
Nickel	ppm	ASTM D5185m	>5	0	0	0
Titanium	ppm	ASTM D5185m		0	0	<1
Silver	ppm	ASTM D5185m		0	0	0
Aluminum	ppm	ASTM D5185m	>5	<1	2	2
Lead	ppm	ASTM D5185m	>10	0	0	<1
Copper	ppm	ASTM D5185m	>50	5	6	6
Tin	ppm	ASTM D5185m	>5	<1	0	0
Vanadium	ppm	ASTM D5185m		0	0	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

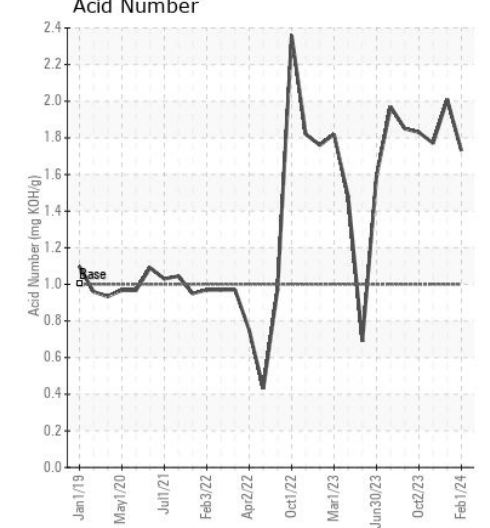
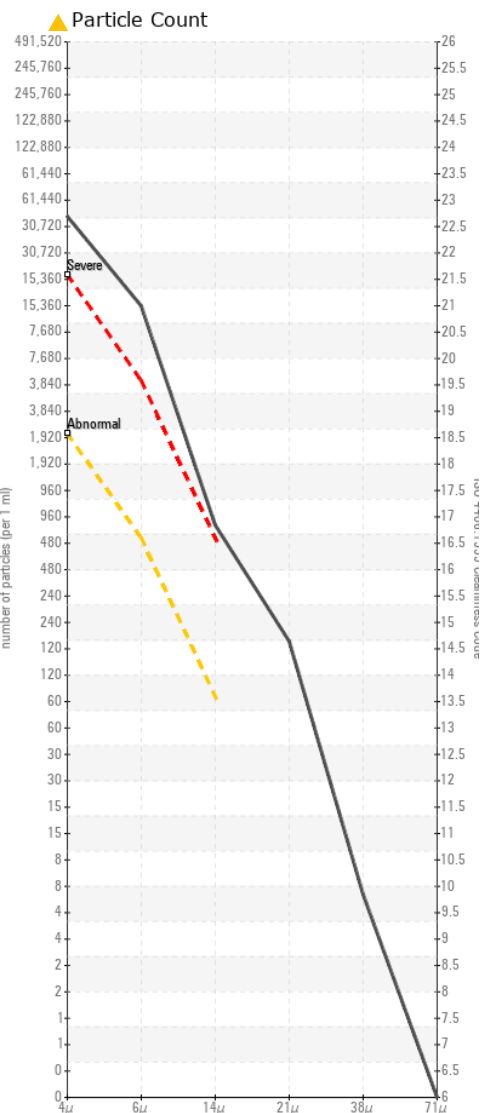
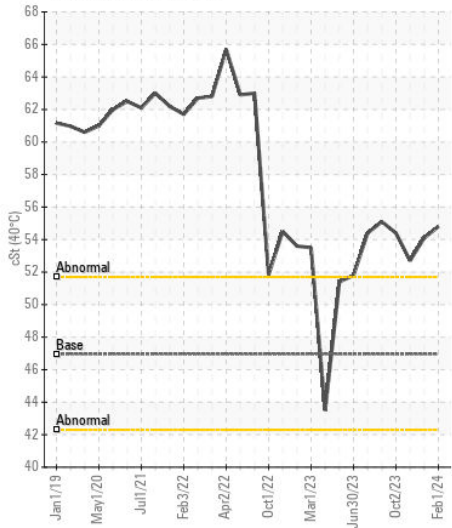
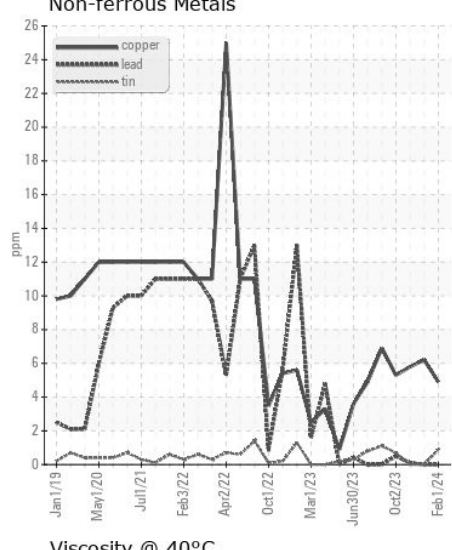
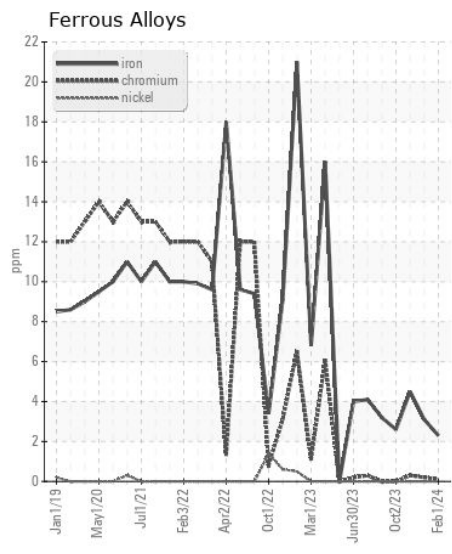
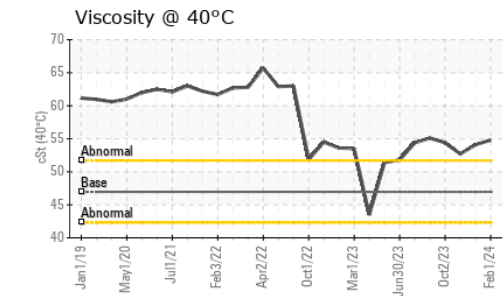
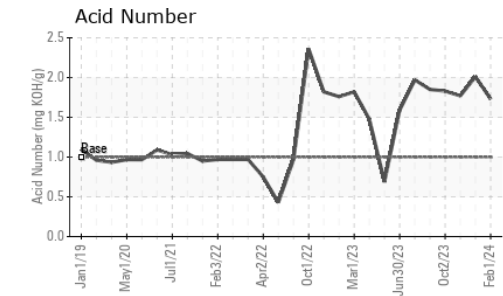
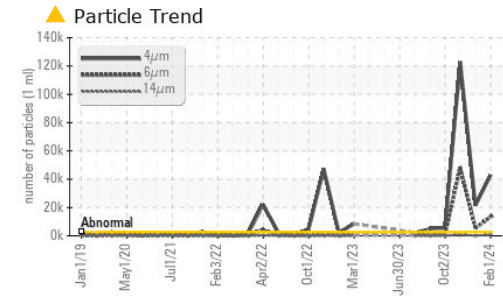
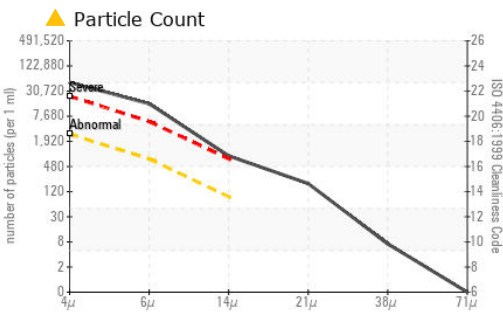
There is a high amount of particulates present in the fluid.

Silicon	ppm	ASTM D5185m	>15	<1	1	1
Potassium	ppm	ASTM D5185m	>20	2	2	1
Water		WC Method	>0.2	NEG	NEG	NEG
Particles >4µm		ASTM D7647	>2500	▲ 42926	▲ 21456	▲ 122746
Particles >6µm		ASTM D7647	>640	▲ 13264	▲ 5338	▲ 48421
Particles >14µm		ASTM D7647	>80	▲ 755	▲ 101	▲ 842
Particles >21µm		ASTM D7647	>20	▲ 165	19	▲ 69
Particles >38µm		ASTM D7647	>4	▲ 6	1	3
Particles >71µm		ASTM D7647	>3	0	0	1
Oil Cleanliness		ISO 4406 (c)	>18/16/13	▲ 23/21/17	▲ 22/20/14	▲ 24/23/17
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		2	<1	6
Boron	ppm	ASTM D5185m		2	2	2
Barium	ppm	ASTM D5185m		0	0	7
Molybdenum	ppm	ASTM D5185m		0	0	0
Manganese	ppm	ASTM D5185m		<1	0	0
Magnesium	ppm	ASTM D5185m		2	2	3
Calcium	ppm	ASTM D5185m		16	8	38
Phosphorus	ppm	ASTM D5185m		386	487	437
Zinc	ppm	ASTM D5185m		152	153	164
Sulfur	ppm	ASTM D5185m		476	443	490
Acid Number (AN)	mg KOH/g	ASTM D8045	1.0	1.73	2.01	1.77
Visc @ 40°C	cSt	ASTM D445	46.96	54.8	54.1	52.7



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : MW0068042 **Received** : 08 Feb 2024
Lab Number : 06084310 **Tested** : 09 Feb 2024
Unique Number : 10871755 **Diagnosed** : 12 Feb 2024 - Don Baldrige
Test Package : MAR 2 (Additional Tests: PrtCount)
 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)

INGRAM BARGE
 900 S 3RD ST
 PADUCAH, KY
 US 42003
 Contact: CHARLES COPELAND
 charles.copeland@ingrambarga.com
 T: (270)415-4467
 F: (615)695-3697