



WEAR	<b>NORMAL</b>
CONTAMINATION	<b>NORMAL</b>
FLUID CONDITION	<b>NORMAL</b>

Machine Id  
**PAUL F BROTZGE FLANKING PUMP SYSTEM**

Component  
**Hydraulic System**

Fluid  
**CHEVRON RANDO HD 68 (240 GAL)**

**RECOMMENDATION**

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>MW0053165</b>	MW0066427	MW0046357
Sample Date		Client Info		<b>01 Jun 2024</b>	26 Jan 2024	13 May 2023
Machine Age	hrs	Client Info		<b>64260</b>	0	0
Oil Age	hrs	Client Info		<b>64260</b>	0	0
Filter Age	hrs	Client Info		<b>0</b>	6	0
Oil Changed		Client Info		<b>Not Changed</b>	Not Changed	Not Changed
Filter Changed		Client Info		<b>Changed</b>	Not Changed	Changed
Sample Status				<b>NORMAL</b>	ATTENTION	NORMAL

**WEAR**

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>20	<b>1</b>	0	0
Chromium	ppm	ASTM D5185m	>10	<b>&lt;1</b>	0	0
Nickel	ppm	ASTM D5185m	>10	<b>&lt;1</b>	0	0
Titanium	ppm	ASTM D5185m		<b>&lt;1</b>	0	<1
Silver	ppm	ASTM D5185m		<b>&lt;1</b>	0	0
Aluminum	ppm	ASTM D5185m	>10	<b>3</b>	0	<1
Lead	ppm	ASTM D5185m	>20	<b>1</b>	0	0
Copper	ppm	ASTM D5185m	>20	<b>9</b>	6	3
Tin	ppm	ASTM D5185m	>10	<b>&lt;1</b>	0	0
Vanadium	ppm	ASTM D5185m		<b>&lt;1</b>	0	0
White Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE

**CONTAMINATION**

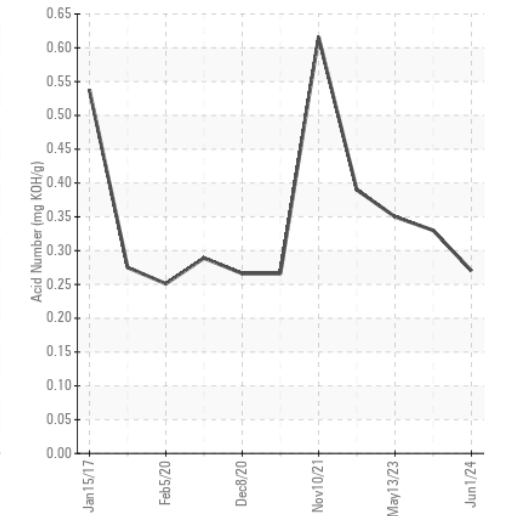
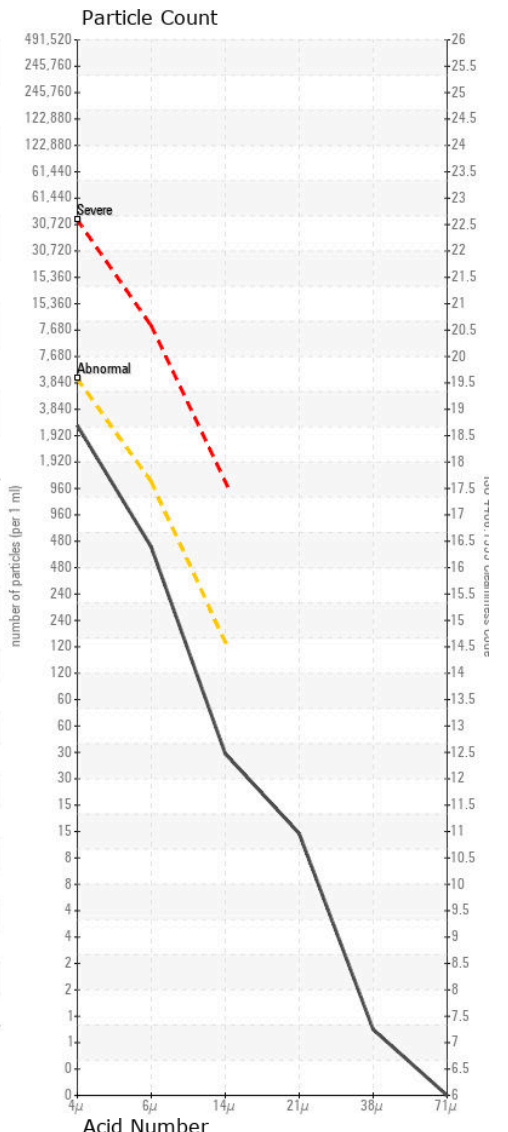
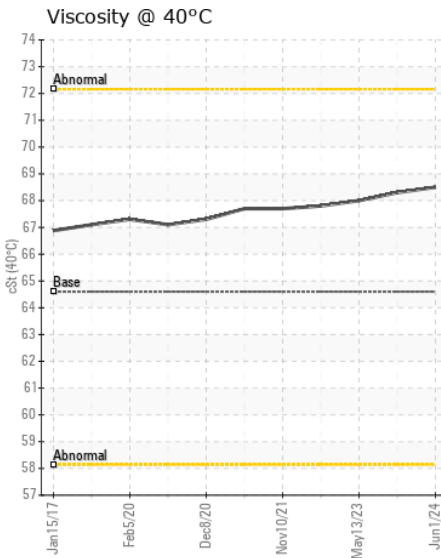
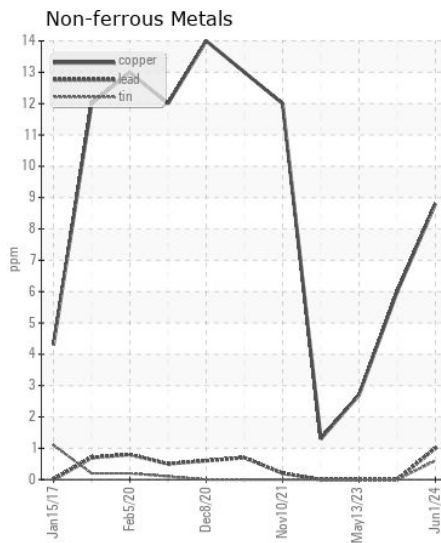
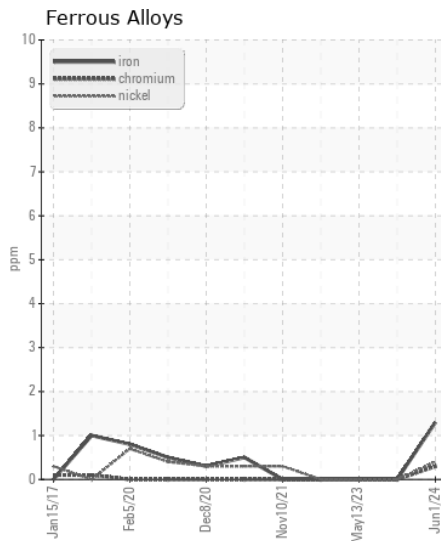
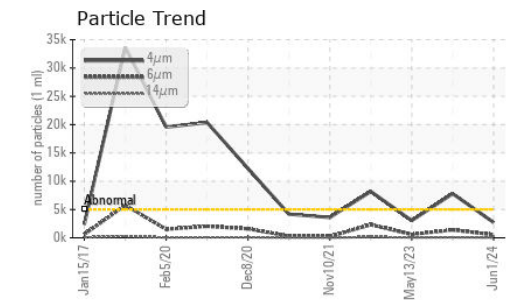
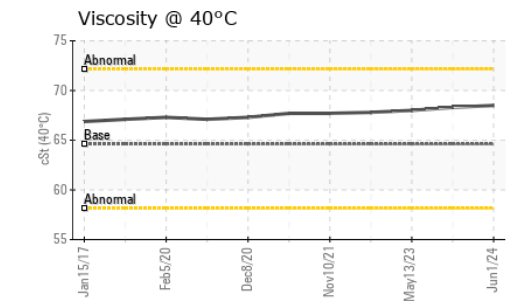
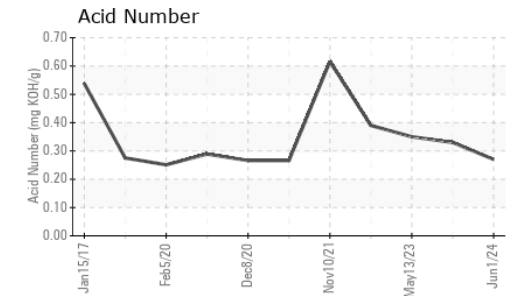
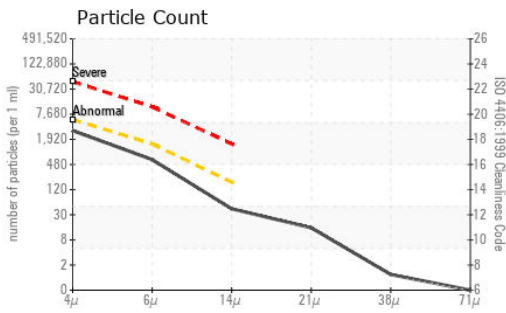
The system cleanliness is acceptable for your target ISO 4406 cleanliness code. The system and fluid cleanliness is acceptable.

Silicon	ppm	ASTM D5185m	>15	<b>4</b>	3	<1
Potassium	ppm	ASTM D5185m	>20	<b>1</b>	0	0
Water		WC Method	>0.05	<b>NEG</b>	NEG	NEG
Particles >4µm		ASTM D7647	>5000	<b>2713</b>	7798	3043
Particles >6µm		ASTM D7647	>1300	<b>552</b>	1398	594
Particles >14µm		ASTM D7647	>160	<b>37</b>	84	41
Particles >21µm		ASTM D7647	>40	<b>13</b>	31	11
Particles >38µm		ASTM D7647	>10	<b>1</b>	2	1
Particles >71µm		ASTM D7647	>3	<b>0</b>	0	0
Oil Cleanliness		ISO 4406 (c)	>19/17/14	<b>19/16/12</b>	20/18/14	19/16/13
Silt	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Debris	scalar	*Visual	NONE	<b>NONE</b>	LIGHT	NONE
Sand/Dirt	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Appearance	scalar	*Visual	NORML	<b>NORML</b>	NORML	NORML
Odor	scalar	*Visual	NORML	<b>NORML</b>	NORML	NORML
Emulsified Water	scalar	*Visual	>0.05	<b>NEG</b>	NEG	NEG

**FLUID CONDITION**

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

Sodium	ppm	ASTM D5185m		<b>0</b>	1	0
Boron	ppm	ASTM D5185m		<b>0</b>	0	0
Barium	ppm	ASTM D5185m		<b>1</b>	0	0
Molybdenum	ppm	ASTM D5185m		<b>&lt;1</b>	0	0
Manganese	ppm	ASTM D5185m		<b>&lt;1</b>	0	0
Magnesium	ppm	ASTM D5185m		<b>&lt;1</b>	0	0
Calcium	ppm	ASTM D5185m		<b>43</b>	32	43
Phosphorus	ppm	ASTM D5185m		<b>355</b>	302	339
Zinc	ppm	ASTM D5185m		<b>453</b>	364	416
Sulfur	ppm	ASTM D5185m		<b>826</b>	650	847
Acid Number (AN)	mg KOH/g	ASTM D8045		<b>0.27</b>	0.33	0.35
Visc @ 40°C	cSt	ASTM D445	64.6	<b>68.5</b>	68.3	68.0



**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : MW0053165  
**Lab Number** : 06217258  
**Unique Number** : 11090122  
**Test Package** : MAR 2

**Received** : 21 Jun 2024  
**Tested** : 24 Jun 2024  
**Diagnosed** : 24 Jun 2024 - Wes Davis

**AMERICAN COMMERCIAL LINES**  
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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)