



WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Area
SANDY B
Machine Id
[SANDY B] 001 562531-1
Component
Port Main Engine
Fluid
SHELL ROTELLA T 15W40 (--- GAL)

RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		MW0065728	MW0068796	MW0068846
Sample Date		Client Info		01 Jun 2024	03 May 2024	06 Apr 2024
Machine Age	hrs	Client Info		9187	8837	8482
Oil Age	hrs	Client Info		179	335	470
Filter Age	hrs	Client Info		179	335	470
Oil Changed		Client Info		Not Changd	Not Changd	Not Changd
Filter Changed		Client Info		Not Changd	Not Changd	Not Changd
Sample Status				NORMAL	NORMAL	NORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>75	2	0	4
Chromium	ppm	ASTM D5185m	>8	0	<1	<1
Nickel	ppm	ASTM D5185m	>2	0	0	<1
Titanium	ppm	ASTM D5185m	>3	0	0	<1
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>15	<1	<1	2
Lead	ppm	ASTM D5185m	>18	<1	0	<1
Copper	ppm	ASTM D5185m	>80	4	3	2
Tin	ppm	ASTM D5185m	>14	0	<1	<1
Vanadium	ppm	ASTM D5185m		<1	0	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

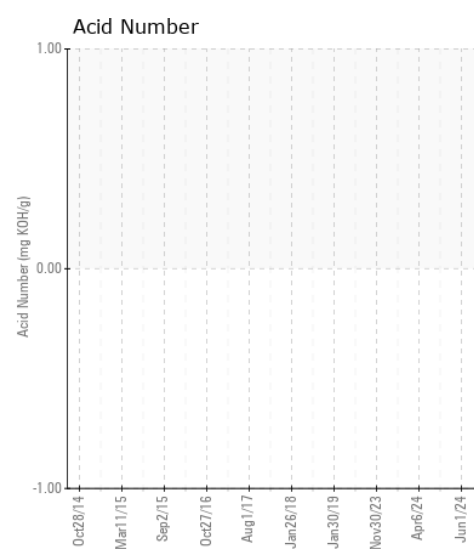
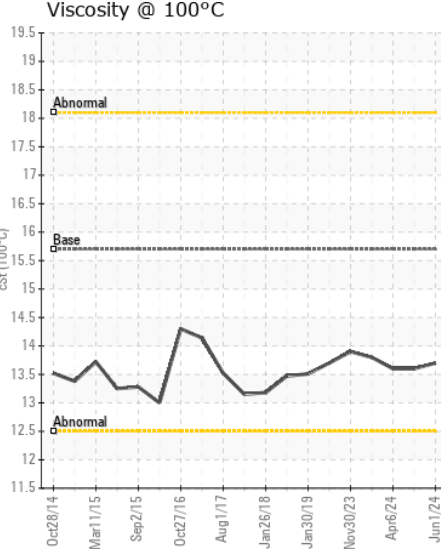
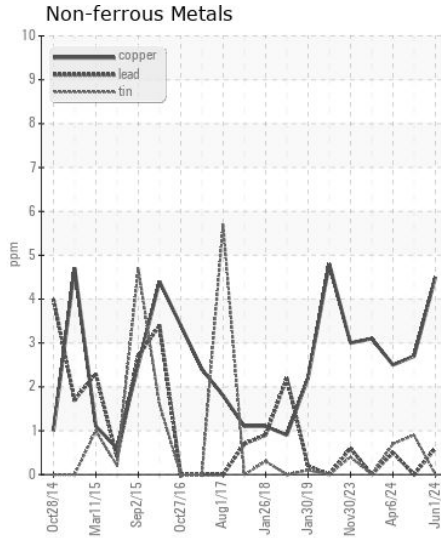
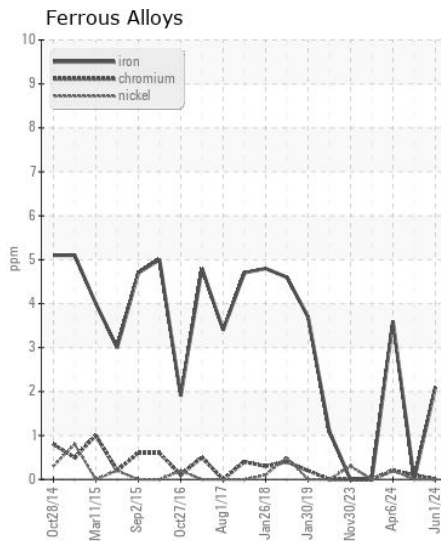
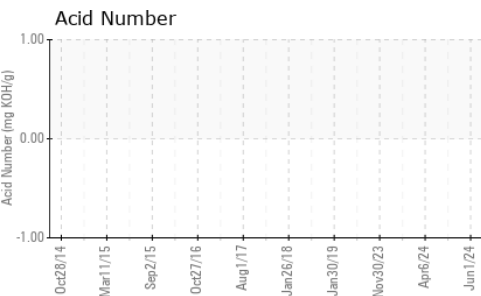
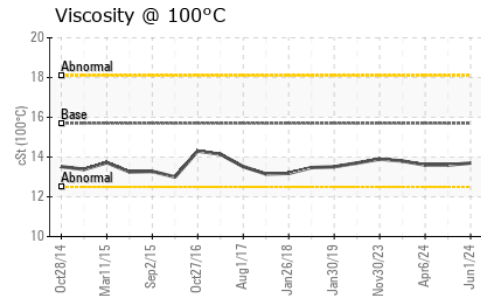
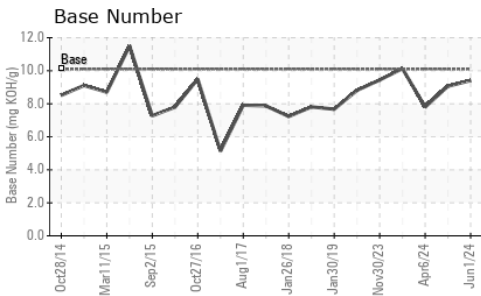
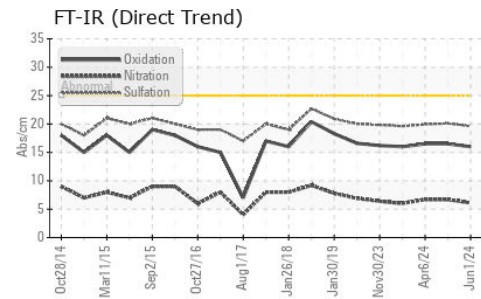
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>20	3	2	4
Potassium	ppm	ASTM D5185m	>20	8	7	9
Fuel		WC Method	>4.0	<1.0	<1.0	<1.0
Water		WC Method	>0.1	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844		0.1	0.1	0.1
Nitration	Abs/cm	*ASTM D7624	>20	6.1	6.7	6.7
Sulfation	Abs/.1mm	*ASTM D7415	>30	19.6	20.1	19.9
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

FLUID CONDITION

The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sodium	ppm	ASTM D5185m	>75	2	<1	<1
Boron	ppm	ASTM D5185m	316	195	205	198
Barium	ppm	ASTM D5185m	0.0	0	<1	0
Molybdenum	ppm	ASTM D5185m	1.2	13	12	11
Manganese	ppm	ASTM D5185m		<1	<1	<1
Magnesium	ppm	ASTM D5185m	24	63	63	51
Calcium	ppm	ASTM D5185m	2292	2413	2132	2234
Phosphorus	ppm	ASTM D5185m	1064	1059	988	1038
Zinc	ppm	ASTM D5185m	1160	1196	1124	1172
Sulfur	ppm	ASTM D5185m	4996	4287	3841	3868
Oxidation	Abs/.1mm	*ASTM D7414	>25	16.0	16.5	16.5
Base Number (BN)	mg KOH/g	ASTM D2896	10.1	9.41	9.06	7.8
Visc @ 100°C	cSt	ASTM D445	15.7	13.7	13.6	13.6



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : MW0065728 **Received** : 25 Jun 2024
Lab Number : 06220425 **Tested** : 27 Jun 2024
Unique Number : 11098622 **Diagnosed** : 27 Jun 2024 - Angela Borella
Test Package : MAR 2 (Additional Tests: TAN Man)

INGRAM BARGE
 900 S 3RD ST
 PADUCAH, KY
 US 42003
 Contact: KIM PRATER
 kim.prater@ingrambarga.com
 T: (270)415-4467
 F: (615)695-3697

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)