

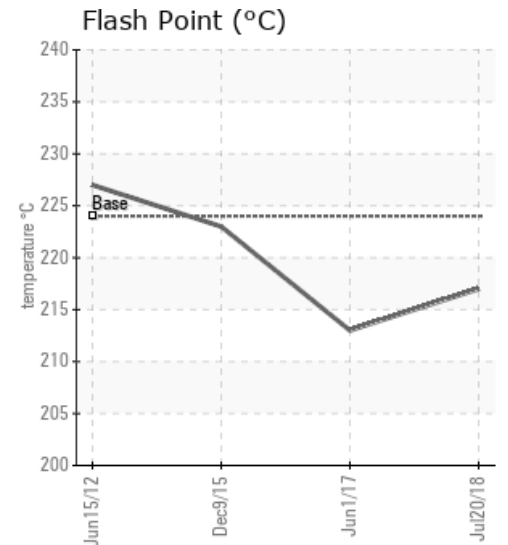
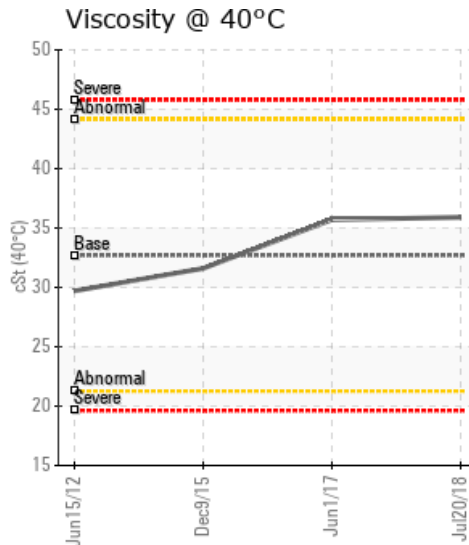
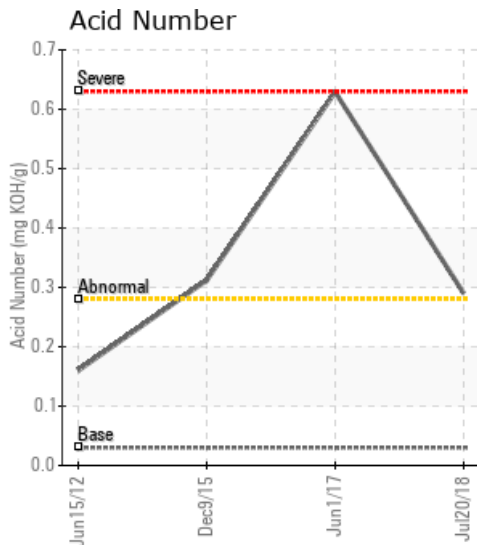
PASTE PLANT 1 HTF

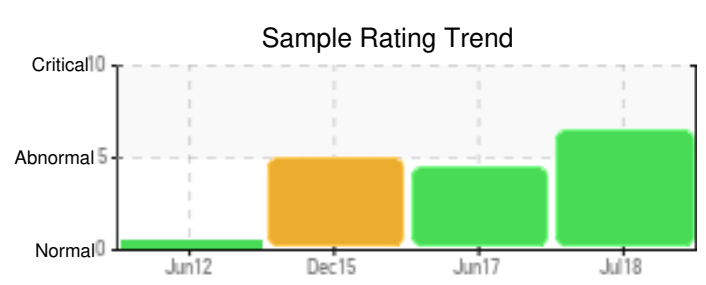
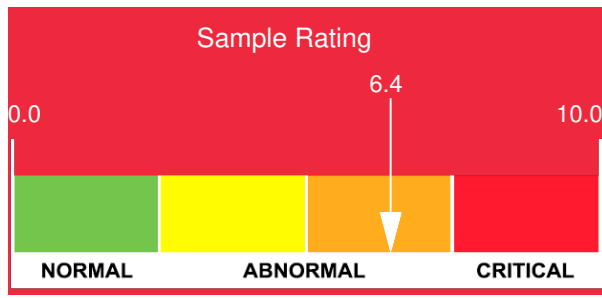
Customer: PTRHTF60012	System Information	Sample Information
TOMAGO ALUMINIUM COMPANY 638 TAMAGO ROAD, TOMAGO NEW SOUTH WALES NEWCASTLE, 2324 Australia Attn: KATE MANGAN/MAGALI GENDRE Tel: 249667018 E-Mail: kate.mangan@tomago.com.au	System Volume: 5000 ltr Bulk Operating Temp: 437F / 225C Heating Source: Blanket: Fluid: PETRO CANADA CALFLO AF Make:	Lab No: 02232584 Analyst: Yutong Gao Sample Date: 07/20/18 Received Date: 08/08/18 Completed: 08/29/18 To discuss this report contact Yutong Gao at (403)873-1876

Recommendation: The current fluid has a moderate oxidation, however it is suitable for further operation. The solid content is high due to the fluid oxidation or third party contamination. The 96ppm Fe reading is also a concern because the system should not have wears and tears. Please continue to run the fluid and take one sample in 6 months to monitor the conditions. Please make sure to flush the sampling line well enough before taking the representative samples.

Comments: PQ levels are abnormal. Iron ppm levels are abnormal. Solid levels are high. Acid Number (AN) is abnormally high. (GCD) 90% Distillation Point is abnormally low.

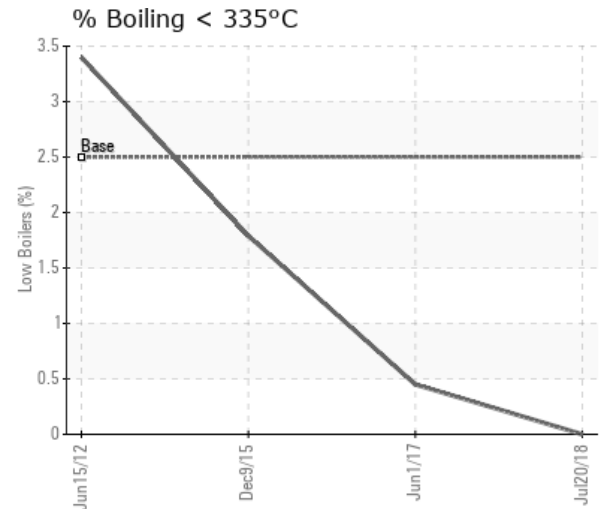
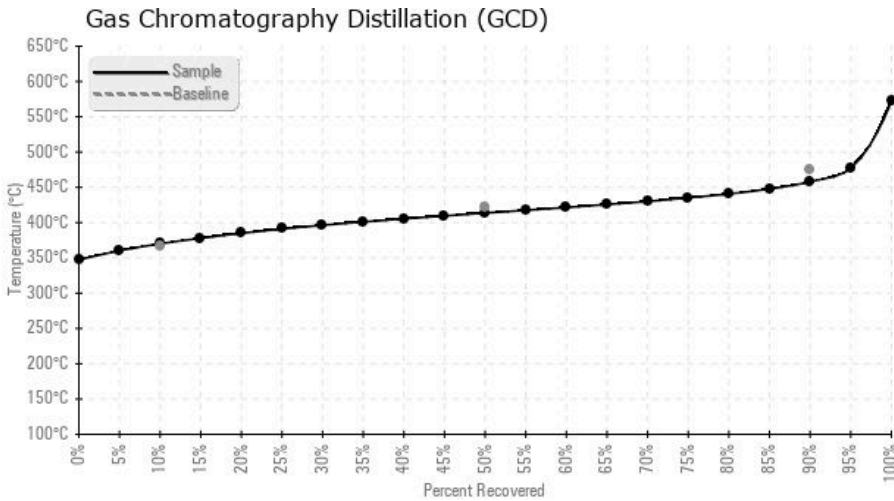
Sample Date	Received Date	Fluid Age	Sample Location	Flash Point (COC)	Water (KF)	Viscosity (40°C)	Acid Number	Solids	GCD 10%	GCD 50%	GCD 90%	GCD % < 335°C
	mm/dd/yy			°F/°C	ppm	cSt	mg/KOH/g	%wt	°F/°C	°F/°C	°F/°C	%
07/20/18	08/08/18	0c		423 / 217	2.4	35.9	0.29	0.916	698 / 370	776 / 414	856 / 458	0.00
06/01/17	08/08/17	0c	HEATER ROOM	415 / 213	65.2	35.7	0.629	0.547	740 / 393	818 / 437	919 / 493	0.45
12/09/15	12/29/15	0c		433 / 223	682.8	31.6	0.312	0.238	694 / 368	794 / 424	892 / 478	1.79
06/15/12	07/03/12			441 / 227	85	29.7	0.16	0.062	685 / 363	793 / 423	900 / 482	3.4
Baseline Data				435 / 224		32.7	0.03		693 / 367	790 / 421	887 / 475	2.5





Sample Date	Iron	Chromium	Nickel	Aluminum	Copper	Lead	Tin	Cadmium	Silver	Vanadium	Silicon	Sodium	Potassium	Titanium	Molybdenum	Antimony	Manganese	Lithium	Boron	Magnesium	Calcium	Barium	Phosphorus	Zinc
07/20/18	176	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	2	0	0	0	0	0	207	1
06/01/17	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	199	0
12/09/15	11	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	0	0	0	159	3
06/15/12	21	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	3	0	0	92	1
Baseline Data			0	0						0			0	0					0				270	

Elemental analysis results (above) in parts per million (ppm). [10,000 ppm = 1.0%]



Historical Comments	
06/01/17	The current fluid has moderate oxidation, so that the AN number, viscosity and GCD 10%/50%/90% all have been increased. However, the fluid is still suitable for use. Please take one sample in 12 months to monitor the conditions.
12/09/15	Water contamination levels are abnormally high. Acid Number (AN) is abnormally high. Water accelerates the oil oxidation, so please control the water contamination. Please take one sample in 9 months to monitor the conditions.
06/15/12	The oil condition is normal. We have updated the system volume and operating temperatures.