

GreenCut Cutting Fluid Analysis of Test Reports

Under discussion are two tests with GreenCut[®] Cutting Fluid which were run by Wescan Precision Machine Corp of Calgary in 2008, under the supervision of Bob Harvey, Machine Shop Manager.

The first test (GreenCut contaminated, YI3991) was done on a manual operated lathe that is fully utilised on a single shift basis, five days per week, cutting all types of steels, including alloys. The cutting fluid bath, GreenCut/water at about 1: 25 mix ratio, was not changed out for at least three months of operation, only premixed GreenCut/water was added as required during this time to keep the tank full. After this time a sample was taken on Sep. 3, which shows a brown colour; it should be noted that the GreenCut mixture is bright green in colour, when fresh. According to Bob Harvey this mixture contained “a lot of oil” due to lathe seal leakage plus the slideways oil (Mohawk HVI 32, YI3993) leaking continually into the tank, the brown colour of the used cutting fluid would seem to confirm that.

This sample (GreenCut contaminated, YI3991) was tested for oils and other contaminants as per tests performed by Metro Tech Systems Ltd. Calgary, copies attached. No oil was observed, but even more interesting according to the Lab. Manager at Metro Tech, the Phosphorus disappeared as well; this has not been observed in any testing by them, ever. Test Reports (Mohawk HVI 32, YI3993) and (GreenCut contaminated, YI3991) show a measured differential from 306 ppm to 2 ppm on the P. The other contaminants are incidental excepting the boron which can be partially explained from the GreenCut formulation, the rest coming from the machining contaminants.

This test indicates that the slideways oil was catalyzed by the GreenCut.
The phosphorus was utilised in aerobic respiration of the hydrocarbons.

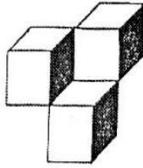
The second test (GreenCut 5% oil, YI5741) was run on a CNC milling machine, running for six weeks at the point of testing, having used a measured twelve liters of slideways oil (Mohawk HVI 32, YI3993) during this period, most of which ends up in the coolant tank. The GreenCut/water mixture of 1:25 was not changed out, just added as needed during this time to keep the coolant tank filled up. The test sample was taken on Sep.15 which showed a bright green mixture.

This second test sample (GreenCut 5% oil, YI5741) was tested for oils and other contaminants as per tests performed by Metro Tech Systems Ltd. Of Calgary, copies attached. No oil was observed; the Phosphorus almost disappeared as well, from 306 ppm to 13 ppm. The other contaminants are incidental excepting the boron which can be partially explained from the GreenCut formulation, the rest coming from the machining contaminants. Physical examination of the coolant tank showed no oils on top of the coolant, except in one corner of the tank there was a slight skim, ~5 micron thick, of discolouration; there was no oil smell at all, only a lemony scent from the GreenCut; the GreenCut cutting fluid in the tank showed bright green in colour.

This test confirms that the slideways oil was catalyzed by the GreenCut.
The phosphorus was utilised in aerobic respiration of the hydrocarbons.

For further information contact:

Benjamin Vroon,
Chief Chemical Engineer



METRO TECH SYSTEMS LTD.
 Petroleum Products Consultants
 Bay 112, 5621-11 th Street N.E.
 Calgary, Alberta T2E 6Z7
 Telephone: (403) 295-8803 Fax: (403) 295-3848
 E-mail: info@metrotechsystems.ca

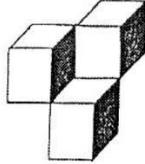
WATER INSPECTION REPORT

CLIENT : Lube Corp Inc.
 DATE : Sept. 11, 2008
 CONTACT : Benjamin Vroon
 SAMPLE ID. : Green Cut (contaminated)
 OUR LAB # : YI3991

	<u>mg./Kg.</u>		<u>mg./Kg.</u>
Silver	: 0	Manganese	: 3
Aluminum	: 17	Molybdenum	: 0
Arsenic	: -----	Sodium	: 17
Boron	: 291	Nickel	: 0
Barium	: 0	Phosphorous	: 2
Calcium	: 52	Lead	: 2
Cadmium	: 0	Selenium	: -----
Chromium	: 0	Silicon	: 3
Copper	: 1	Tin	: 2
Iron	: 51	Titanium	: -----
Mercury	: -----	Vanadium	: 0
Potassium	: 0	Zinc	: 3
Magnesium	: 25	Cobalt	: -----

REMARKS:

W. T. TANGUAY/T. WONG
 METRO TECH SYSTEMS LTD.



METRO TECH SYSTEMS LTD.
 Petroleum Products Consultants
 Bay 112, 5621-11 th Street N.E.
 Calgary, Alberta T2E 6Z7
 Telephone: (403) 295-8803 Fax: (403) 295-3848
 E-mail: info@metrotechsystems.ca

WATER INSPECTION REPORT

CLIENT : Lube Corp Inc.
 DATE : Sept. 24, 2008
 CONTACT : Benjamin Vroon
 SAMPLE ID. : Green Cut (5% Oil)
 OUR LAB # : YI5741

	<u>mg./Kg.</u>		<u>mg./Kg.</u>
Silver	: 0	Manganese	: 2
Aluminum	: 32	Molybdenum	: 0
Arsenic	: _____	Sodium	: 17
Boron	: 734	Nickel	: 0
Barium	: 0	Phosphorous	: 13
Calcium	: 61	Lead	: 0
Cadmium	: 0	Selenium	: _____
Chromium	: 0	Silicon	: 11
Copper	: 0	Tin	: 0
Iron	: 10	Titanium	: _____
Mercury	: _____	Vanadium	: 0
Potassium	: 0	Zinc	: 10
Magnesium	: 36	Cobalt	: _____

REMARKS:



W. T. TANGUAY/T. WONG
 METRO TECH SYSTEMS LTD.

1010 72 Avenue NE, Calgary, Alberta, Canada T2E 8V9 • Tel: 403-250-8448 / 800-661-6100 • Fax: 403-444-0033 • Email: info@lubecorp.com

Lubricant Inspection Record

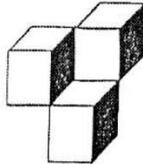


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 Petroleum Products Consultants
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 Calgary, Alberta T2E 6Z7
 Telephone (403) 295-8803 Fax (403) 295-3848
 eMail metrotech@metrotechsystems.ca

ISO 9001:2000
 Registered Firm

Client Lube Corp Inc
 Location West Can
 Unit Number GREEN CUT
 Component New Oil
 Make/Model
 Serial #

Lab Number:	YI3993	New Oil
Sample Date:	Sep 04/08	
Unit:	0	
Oil:	0	
Oil Type:	MOHAWK HVI 32	
METALS (D5185): Milligrams per Kilogram (PPM)		
Highlighted Test Results Indicate Abnormal Concentrations		
Tin	0	
Lead	0	
Copper	0	
Aluminum	0	
Silicon	0	
Iron	0	
Chromium	0	
Silver	0	
Zinc	372.3	
Magnesium	0	
Nickel	0	
Barium	0	
Sodium	0	
Calcium	60.1	
Vanadium	0	
Phosphorus	306	
Molybdenum	0	
Boron	1.1	
Manganese	0	
PHYSICAL PROPERTIES		
Viscosity (D445) @ 40°C		
Viscosity (D445) @ 100°C		
Water (D4007) (% v/v)		
Solids (D4007) (% v/v)		
Glycol		
Fuel Dilution		
OTHER PROPERTIES		
Acid No. (D664)		
Base No. (D2896)		
Base No. (D4739)		
Oxidation		
Nitro Compounds		
Organic Nitrates		
Particle Count (ISO 4406)		
Oil Changed?		
COMMENTS		
RATING SYSTEM: A is LOW B is LOW to MODERATE C is MODERATE D is HIGH E is SEVERE		
YI3993 -		
Laboratory Telephone (403) 295-8803		
These results were verified on Sep 11/08 by F Shirabad Saia		
107940 01		



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 E-mail: info@metrotechsystems.ca

WATER INSPECTION REPORT

CLIENT : Lube Corp Inc.
 DATE : Sept. 11, 2008
 CONTACT : Benjamin Vroon
 SAMPLE ID. : Green Cut (new)
 OUR LAB # : YI3992

	<u>mg./Kg.</u>		<u>mg./Kg.</u>
Silver	: 0	Manganese	: 0
Aluminum	: 0	Molybdenum	: 0
Arsenic	: -----	Sodium	: 0
Boron	: 215	Nickel	: 0
Barium	: 0	Phosphorous	: 0
Calcium	: 33	Lead	: 0
Cadmium	: 0	Selenium	: -----
Chromium	: 0	Silicon	: 2
Copper	: 0	Tin	: 0
Iron	: 0	Titanium	: -----
Mercury	: -----	Vanadium	: 0
Potassium	: 0	Zinc	: 0
Magnesium	: 12	Cobalt	: -----

REMARKS:



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