

This rock driller had it's entire systems treated with Cerma STM-3 treatments. Oil wear test were reported showing how the Cerma STM-3 Engine Treatment dramatically decreased engine wear.



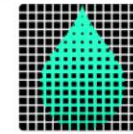
FNX MINING - PODOLSKY MINE  
P.O. BOX 340  
CAPREOL, ONTARIO  
POM 1H0  
Attention : ADAM GRUNYS  
Phone : (705) 222-5620 #6221

**Unit Data**

Unit # : 890284  
Component : ENGINE  
Location :  
Manufacturer : CATERPILLAR  
Serial # :  
Model : R1600

**Lubricant**

Mfr. : ESSO  
Brand : XD-3 EXTRA  
Grade : 15W40  
Sample : 02/08-96



**Fluid Life**  
*Oil Analysis*

95 Copernicus Boulevard  
Brantford, ON. N3P 1N4  
Phone: (519) 720-9700  
Fax: (519) 720-9705

CODE: Y - Yes N - Negative P - Positive R - Reportable U - Unacceptable S - Severe I - Insufficient Sample > - More Than < - Less Than

**Spectro-chemical (ppm)**

Sample Number	Sample Date	Silicon	Sodium	Potassium	Iron	Chrome	Lead	Copper	Tin	Aluminum	Nickel	Silver	Titanium	Boron	Phosphorus	Zinc	Calcium	Barium	Magnesium	Molybdenum	Vanadium	Antimony	Lithium	Beryllium
New Oil:		4	1	3	3	0	0	0	1	1	0	0	0	0	1402	1531	3636	0	11	1	1	0	0	0
02/08-096	2008/01/28	4	0	1	8	0	0	35R	1	2	0	0	0	1	1245	1442	3545	0	10	1	2	0	0	0
01/16-039	2008/01/04	8	0	1	8	0	1	38R	2	1	0	1	0	0	1281	1424	3486	0	13	1	2	2	0	0
12/31-099	2007/12/31	25R	0	0	10	0	1	93S	6	2	0	4	0	1	1317	1530	3785	8	19	1	2	1	0	0
12/20-106	2007/11/29	94S	0	4	8	0	2	190S	2	0	0	1	0	0	1079	1208	2788	0	44	0	0	0	0	0

**Physical Tests**

Sample Number	Oil Mfr.	Oil Brand	Oil Grade	Comp. Service	Oil Service	Units	Oil Chg	Water	Glycol %	Visc 40°C cSt	Visc 100°C cSt	Fuel %	Soot %
New Oil:		ESS	XD3	15W40						113	14.95		
02/08-096	ESS	XD3	15W40	956		HR	Y	N	N	96.3	13.85	N	0.10
01/16-039	ESS	XD3	15W40	764		HR	Y	N	N	100	14.12	N	0.05
12/31-099	?	?	?	681		HR	?	N	N	98.2	13.77	N	0.10
12/20-106	?	?	?	477		HR	Y	N	N	99.4	15.41	N	0.08

**Additional Tests**

NIT (A/cm)	OX (A/cm)	Sul (A/cm)	Ethylene Glycol (%)	Polypropylene Glycol (%)
3.69	3.32	0.00		
2.10	2.32	0.00		
-	-	-		
-	-	-		

**Results**

- Note the flagged element Copper.
- Copper can be found in cooler cores, bearings, bushings and thrust washers. It is also sometimes an oil additive and/or an anti-seize compound.

**Recommendations**

- If copper is the only element flagged, it is typically caused by surface leaching from cooler cores. In this case continued normal monitoring is sufficient.

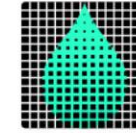
FNX MINING - PODOLSKY MINE  
 P.O. BOX 340  
 CAPREOL, ONTARIO  
 P0M 1H0  
 Attention : ADAM GRUNYS  
 Phone : (705) 222-5620 #6221

**Unit Data**

Unit # : 890284  
 Component : ENGINE  
 Location :  
 Manufacturer : CATERPILLAR  
 Serial # :  
 Model : R1600

**Lubricant**

Mfr. : ESSO  
 Brand : XD-3 EXTRA  
 Grade : 15W40  
 Sample : 02/08-96



**Fluid Life**  
*Trend Analysis*

95 Copernicus Boulevard Phone: (519) 720-9700  
 Brantford, ON. N3P 1N4 Fax: (519) 720-9705

