

New Folder Name FTIR Report

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L190-T940048-00-B



**TELEFAX TRANSMISSION**

**Chicago Bridge & Iron**

*Technical Services Company*

**Research Center**

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TO:	<u>LARRY JONES</u>	FROM:	<u>STEVE PETERS</u>
COMPANY:	<u>CALTECH</u>	DATE:	<u>12/16/94</u>
FAX NO.:	<u>(818) 304-8834</u>	# OF PAGES:	<u>10 (including cover)</u>

Larry,

Attached are the FTIR report and spectra's for the cleaning assessment samples from the 22-B beam tube assembly.

Please call if you have any questions or comments concerning the attached report.

Steve Peters

DEC-16-94 FRI 11:57 RV FITZSIMMONS &amp; ASSOC 708 231 0811

P.02

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ANALYSIS REPORT FOR:

CBI TECHNICAL SERVICES  
1501 N. Division St.  
Plainfield, IL 60544

Attn: Steve Peters

PURCHASE ORDER NO. 12-005 Rev.0

DATE 12 / 15 / 94

**REPORT OF MATERIALS ANALYSIS:** Analysis of seven samples of 2-propanol used in cleaning tube 22B.  
Samples submitted 12/13/94: Cleaning assessment samples 1A, 2A, 3A & 4A  
Wash & Rinse samples: Prop. Rinse & Wash

**METHODS:** For both the propanol solvent and the contaminated propanol solution, 100 ml of each liquid was quantitatively oven dried in clean glass vessels. The non-volatile materials left after the oven drying were analyzed by FTIR spectral analysis on a KBr window for identification and comparison. The ordinate expansion factor (abex) is the same for all spectra except where indicated.  
Copies of the FTIR spectra enclosed.

**RESULTS:**Cleaning Assessment Samples for Tube 22B

Control (virgin propanol) - The non-volatile (NV) residue was 6.0 mg/l and found to be predominantly a hydrocarbon oil or grease.

Sample 1A - The NV residue was 9.0 mg/l and found to be a mixture of hydrocarbon oil, ester oil and other components.

Sample 2A - The NV residue was 8.0 mg/l and found to be a mixture of hydrocarbon oil, ester oil.

Sample 3A - The NV residue was 2.5mg/l and found to be predominantly a hydrocarbon oil similar to the NV content of the virgin propanol of the control.

Sample 4A - The NV residue was 2.0 mg/l and found to be predominantly a hydrocarbon oil similar to the NV content of the virgin propanol of the control. content of the control propanol sample.

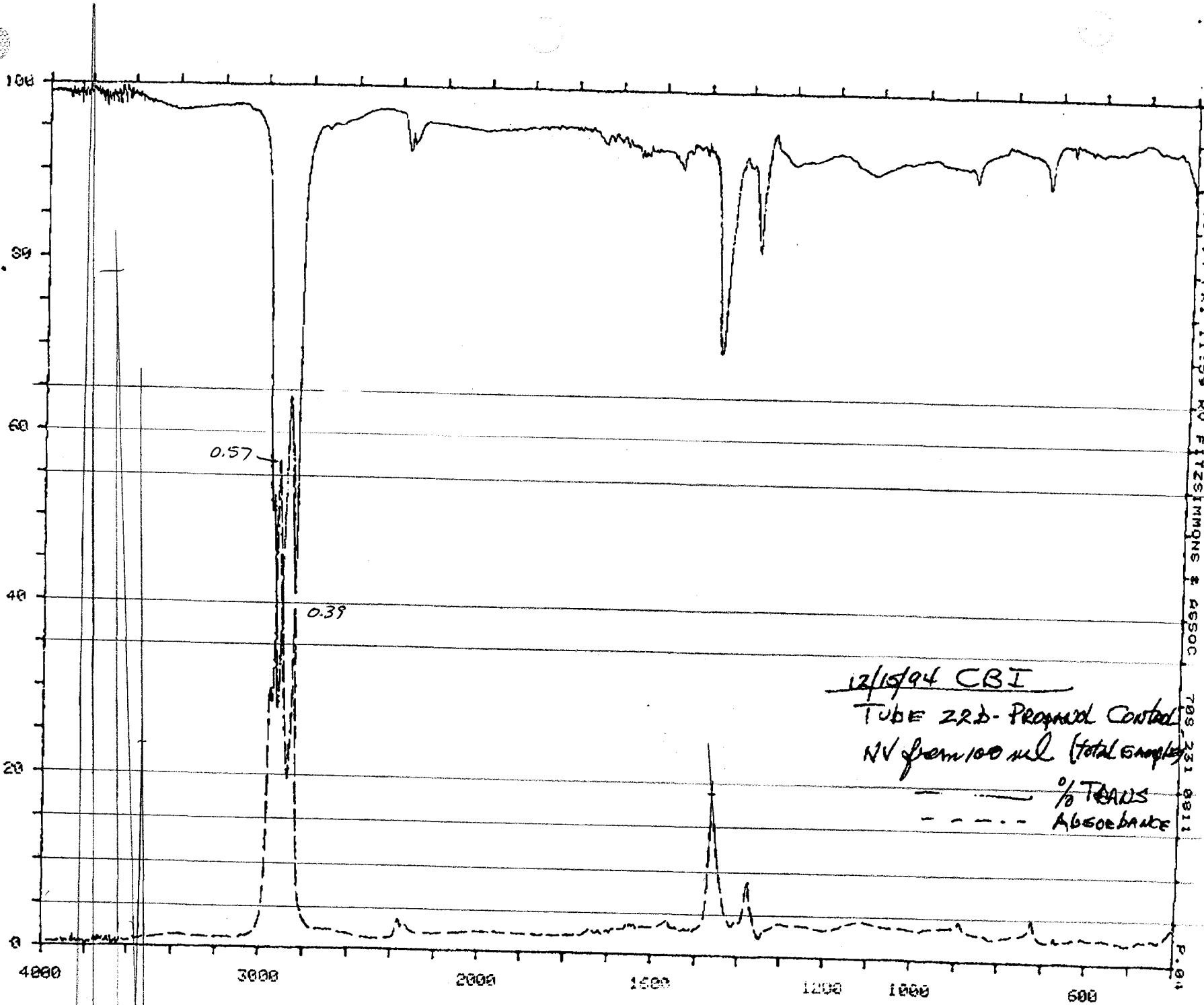
Page 2

Wash & Rinse samples from 22B

Tube 22A, Propanol Rinse - The NV residue was 18.0mg/l and was found to be predominantly a hydrocarbon oil with a small amount of ester type oil.

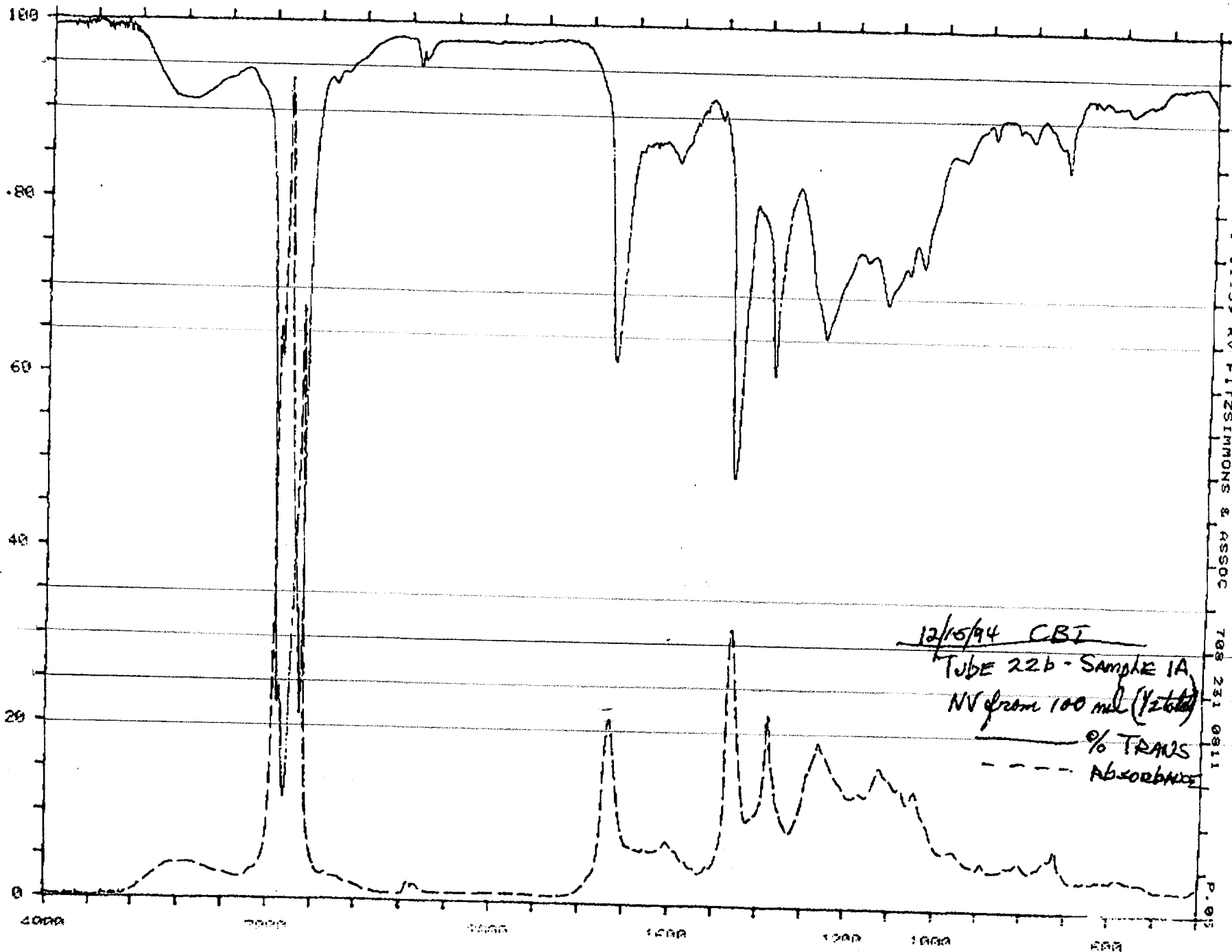
Tube 22A, Propanol Wash - The NV residue was 47.5mg/l and found to be a complex mixture containing hydrocarbon oil, ester type oil and other components.

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12/15/94 CBI  
 TUBE 22b - Propanol Control  
 NV from 100 mL (total sample)  
 ——— % TRANS  
 - - - - - ABSORBANCE

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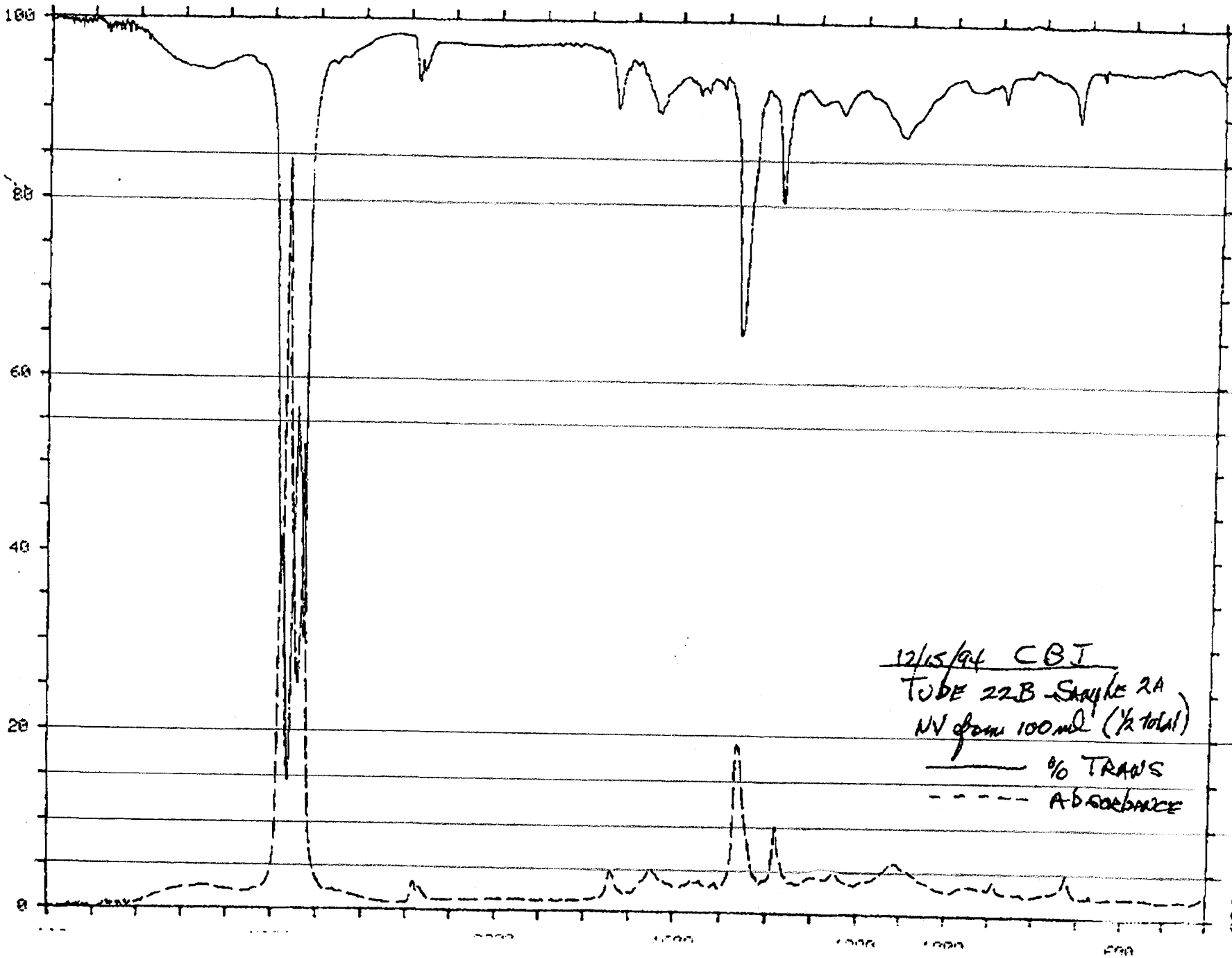
12/15/94 CBI  
TUBE 22b - Sample 1A  
NV from 100 ml (1/2 liter)  
— % TRANS  
- - - Absorbance

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DEC-16-94 FRI 12:00 RV FITZSIMMONS & ASSOC 709 231 0811

P.06

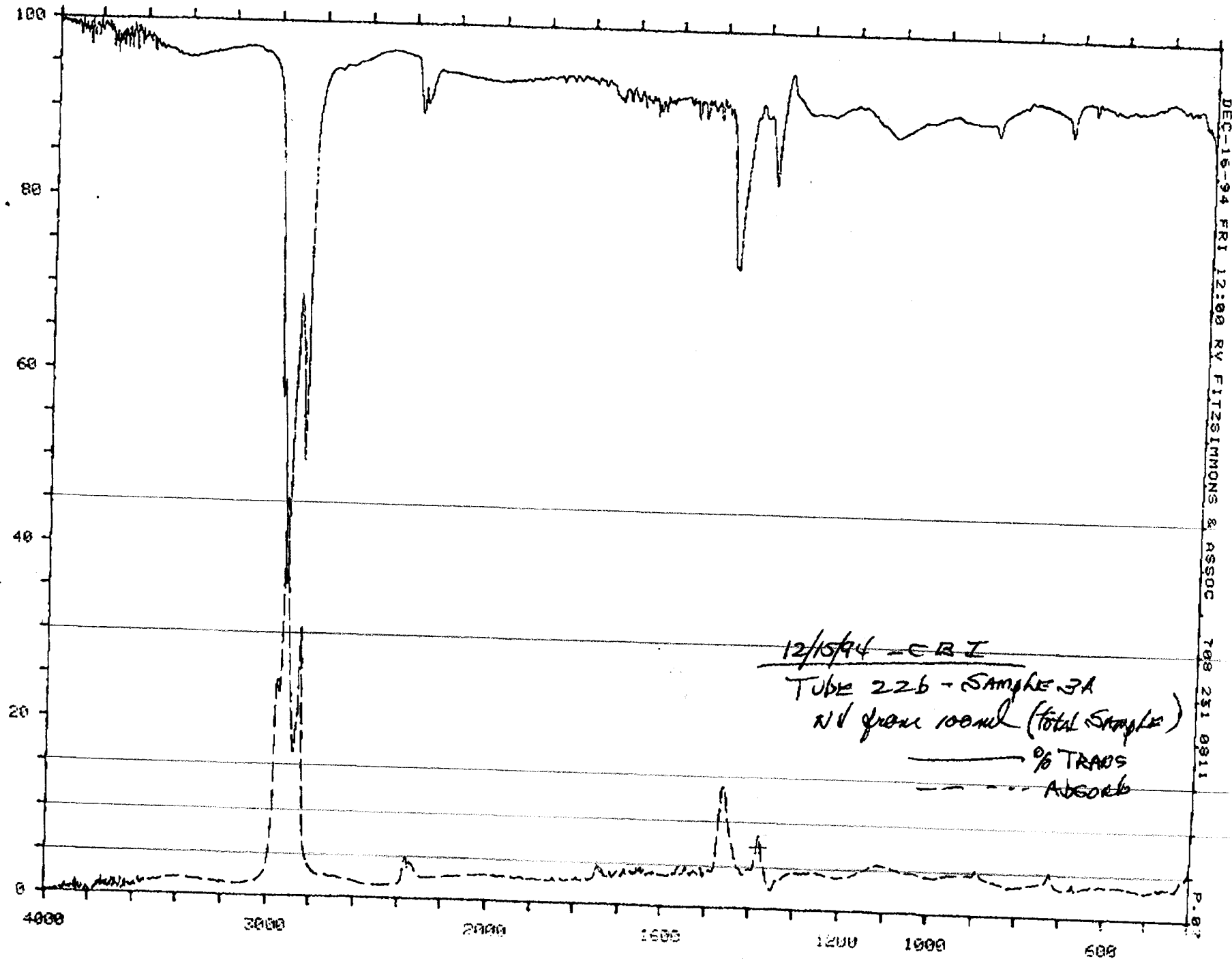


12/15/94 CBI  
TUBE 22B Sample 2A  
NV from 100ml (1/2 total)  
—— % TRANS  
- - - - ABORBNACE

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DEC-16-'94 FRI 12:00 RV FITZSIMMONS & ASSOC 708 251 0911



12/15/94 - CBI  
 Tube 226 - Sample 3A  
 rd from 100ml (total Sample)  
 ————— % TRAN  
 - - - - - Absorb

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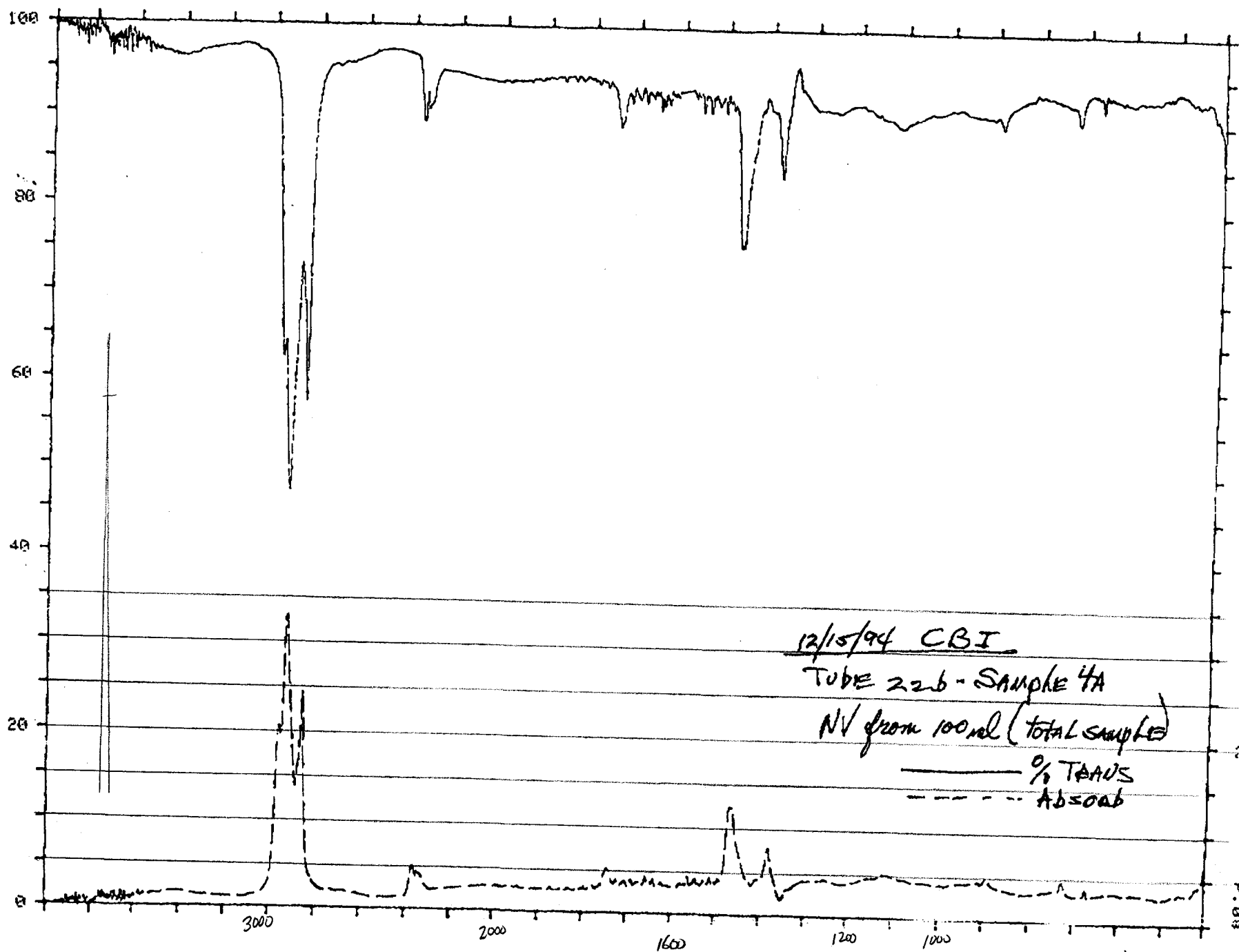
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P.07



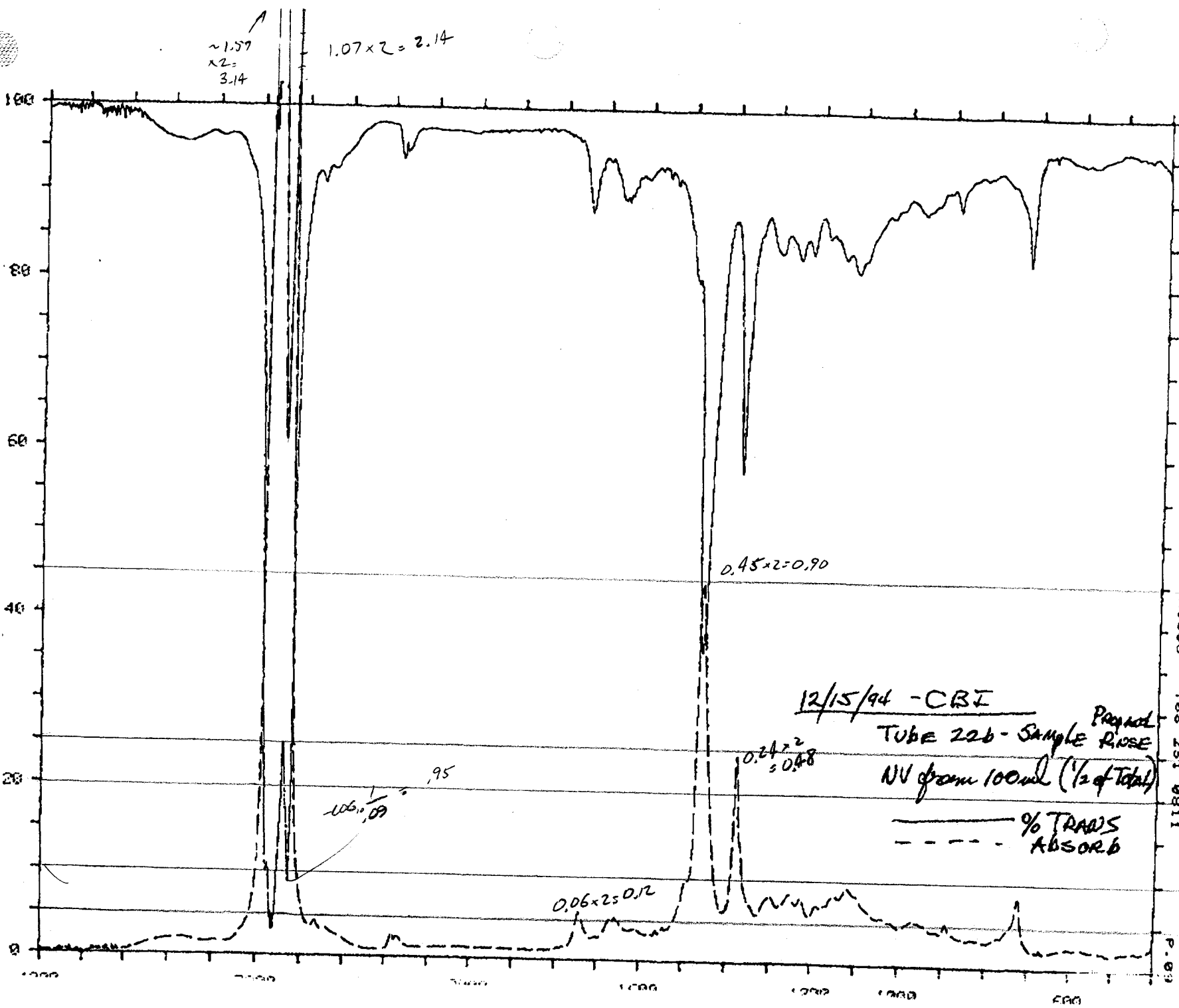
DEC-16-94 FRI 12:01 RV FITZSIMMONS & ASSOC 708 231 0811

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~1.57  
x2=  
3.14

1.07 x 2 = 2.14

0.45 x 2 = 0.90

12/15/94 - CBI

Tube 226 - Sample <sup>Prepared</sup> RINSE  
NV from 100ml (1/2 of Total)

— % TRANSM  
- - - ABSORB

106.00  
95

0.24 x 2  
= 0.48

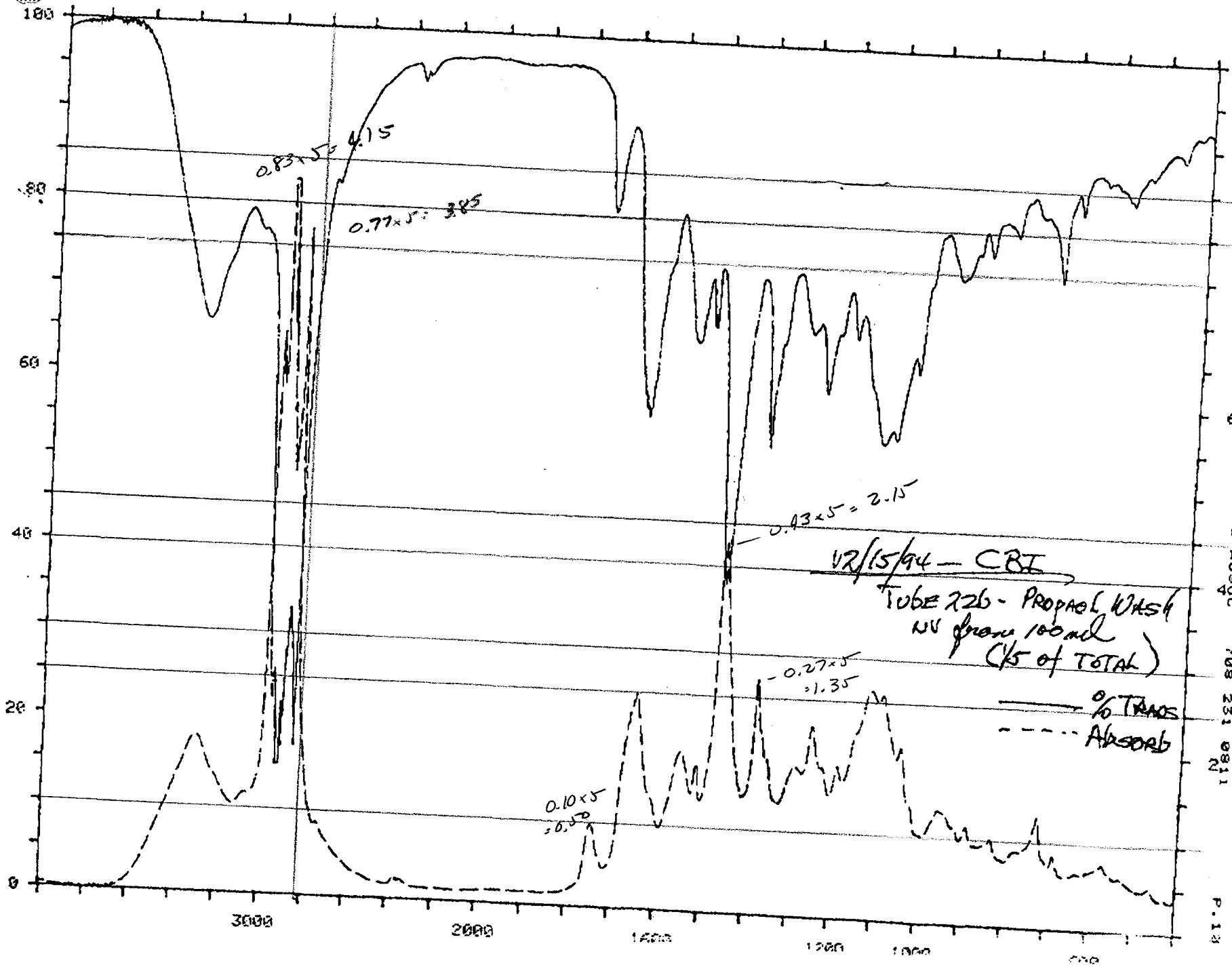
0.06 x 2 = 0.12

DEC 16 '94 11:07

708 231 0811 DATE

DEC-16-94 FRI 12:02 RV FITZSIMMONS & ASSOC 708 231 0811

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