

quantity by X-ray diffraction, it is necessary to confirm the absence by X-ray emission, wet chemical, or petrographic analysis. Petrographic analysis may be used for confirming the presence of diatoms from the extender pigment, diatomaceous silica - when there is not sufficient crystallinity to give an X-ray diffraction pattern.

D. SAFETY AND HEALTH

This method may involve hazardous materials, operations, and equipment. This method does not purport to address all the safety problems associated with its use. It is the responsibility of whoever uses this method to consult and establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.

Observe good hygiene practices. Wash hands after handling samples and before eating, drinking or smoking.

X-ray producing equipment can be dangerous to both the operator and persons in the immediate vicinity unless safety precautions are strictly observed. Refer to the manufacturer's instruction manual. Exposure to excessive quantities of X-radiation may be injurious to health. Therefore, users should avoid exposing any parts of their bodies, not only to the direct beam, but also to secondary or scattered radiation that occurs when an X-ray beam strikes or has passed through any material. It is strongly recommended that users check the degree of exposure by film carried on them or by the use of dosimeters and that blood counts be made periodically. Before utilizing the equipment, all persons designated or authorized to operate X-ray instrumentation or supervise its operation, should have a full understanding of its nature and should also become familiar with established safe exposure factors by a careful study of the National Institute of Standards and Technology Handbook "X-ray Recommendations of

the International Roentgen Ray Committee on X-ray Protection," and other standard publications on the subject. Inquiries should be made of state agencies as to existing requirements.

Place colorful signs displaying the international radiation symbol near the X-ray equipment.

Use a portable counter periodically to test for leakage of X-rays from equipment. Lead or lead glass shielding is sometimes needed. X-rays of shorter wavelength require more caution.

Prior to handling, testing or disposing of any waste materials, testers are required to read the Caltrans Laboratory Safety Manual. Users of this method do so at their own risk.

REFERENCES:

**ASTM Designations: D 5380
California Test 402
Caltrans Standard Specifications,
Caltrans Laboratory Safety Manual**

**End of Text
(California Test 421 contains 2 pages)**