

OFFICE MEMORANDUM

TO : Distribution

DATE: December 27, 1973

FROM : Keith J. Schiager, H-8 Section Leader



SUBJECT : PROPOSED ENVIRONMENTAL MONITORING OF WASTE DISPOSAL AREAS

SYMBOL : H8-73-311

1798 General

It is the intention of the Environmental Section to establish a routine environmental monitoring program around all waste burial or storage areas both active and inactive. Furthermore, we would like to establish a program which would generate data useful to all three sections of the Environmental Studies Group.

From the standpoint of environmental surveillance we would like to document any current release or dispersion of contaminants from the disposal areas whether by atmospheric dispersion or by hydrologic transport. In consideration of the local ecology we would like to determine whether or not the buried materials have any effect on re-vegetation programs or ecological succession over completed waste pits; this would be in contrast to the normal disruption of the areas resulting from physical disturbance and operation of heavy equipment. Finally, for the waste management studies we would like to provide data which could be used to evaluate the longer range probabilities of migration of materials from the disposal site.

For the evaluation of atmospheric dispersion from active waste pits, we plan to install high volume air samplers to be operated on limited duty cycles only during pit filling operations. It is anticipated that these air samplers could be operated from gasoline powered generators in locations where line power is not available. From these air samplers we would like to obtain data on general dust loadings of the atmosphere resulting from waste burial operations in addition to the identification of any releases of radioactive or chemical contaminants from the burial operations.

The monitoring of dispersion into the tuff or the migration of moisture through the filled pit and the surrounding tuff would be by means of sampling tubes extending from the surface to the level of the bottom of the pit or lower



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in an array around each pit. Merlin Wheeler has developed a plan for the installation of sampling and access tubes around Pit #8 in Area G and this plan will be completed in the very near future. We propose that similar access tubes be installed in each active disposal pit and that with slight modifications similar access points be installed around the perimeter of inactive pits. For the inactive pits a smaller number of sampling access tubes may be adequate (probably from 4 to 8 tubes per pit). We would intend to measure soil moisture profiles through these access tubes by means of a neutron moisture gauge. We would also sample any moisture that might be found in the sampling tubes as well as collecting core samples of the tuff at the bottoms of the access tubes.

An additional effort should be undertaken by Sumner Barr and Bill Purtymun to determine the moisture balance at or near the surface of filled pits. This would include meteorological data on precipitation (both total amounts and precipitation rates) and on evaporation rates in order to determine the net moisture budget of the fill material in the pit. The methods for this later effort have not yet been defined, but it is our intent to initiate this effort in the near future.

Sampling of vegetation over completed disposal pits will be undertaken to determine whether or not any of the contaminants buried in the pit have migrated to the surface and are being absorbed by plant tissues. For this effort we will require assistance from the ecology section as to appropriate plant sampling and characterization techniques.

KJS/jc

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