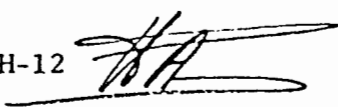


OFFICE MEMORANDUM

TO : Merlin Wheeler, H-12

DATE: May 2, 1978

FROM : Willy Abeele, H-12 

SUBJECT : MONTHLY REPORT, APRIL 1978

SYMBOL : H12-78-102

MAIL STOP: 490

U 120
TA-50

Final rewriting of a paper concerning "The Influence of Access Hole Parameters on Neutron Moisture Probe Readings," was completed and prepared for publication. Based on the calibration results obtained in this study, an extensive inspection of the data gathered from the existing monitoring holes occurred.

From these results, it was concluded that monitoring of several access holes should be dropped. This decision was based on similar moisture characteristics that seemed to prevail in adjacent monitoring holes. Monitoring of the following access holes has been decided, based partly on a visual inspection of obtained results and a consensus reached in a meeting held on Thursday the 6th of April and attended by several members of the Waste Management Study Section. This concerned the S50, P1, and P2 monitoring holes. The decision concerning the P7 monitoring holes was a little bit more arduous to make due to the fact that the part of the holes that goes through the pit is cased with PVC, while the part beneath the pit is uncased so that two different calibration curves had to be applied. An Analysis of Variance applied to the layer of soil backfilled in the pit around the monitoring hole showed a significant difference on moisture readings between monitoring holes. This could be due to the presence of materials other than inorganic soils or interference from the surrounding waste that could create preferential pathways for moisture into the soil surrounding the monitoring holes due to successive layers of extremely permeable and impermeable waste material. The resulting fluctuating moisture readings were therefore judged to be quite unreliable. The Analysis of Variance showed that there was no significant difference in moisture between monitoring holes below the pit, but an inescapable visual difference on moisture distribution between P7-1 and P7-2 on the one hand and P7-3 on the other prevailed.

As a consequence of the reasons mentioned above and the fact that the shallow hole P2-1 will soon be covered, I propose to retain the monitoring of holes S50-1, S50-3, S50-5, P1-1, and P1-2. The monitoring of P7-1 and P7-3 should also continue from a depth of 9 m on down. P7-1 was chosen over P7-2 because of its greater depth.



8315

TO: Merlin Wheeler, H-12
H12-78-102

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DATE: May 2, 1978

Area C was surveyed in order to decide upon the location of future prospective monitoring holes. A study is underway so that the location of the future monitoring holes will be the result of logical, and not random selection, based on previous soil and vegetation sampling. The monitoring of additional holes in Area C will be counterbalanced by the termination of access holes in Area G.

WA:tj
cc: Dan Wilson, H-12

Drilled ~~*11th Sept '78*~~
August 1978
to depth of 30 m

TABLE OF MOISTURE MEASURING HOLES

<u>Hole Designation</u>	<u>Casing Diameter (in.)</u>	<u>Casing Type</u>	<u>Casing Depth (meters)</u>	<u>Depth of Hole (meters)</u>	<u>Comments</u> (All holes listed are presently being monitored)
S 50-1	3" 2"	Steel PVC	0.5 13.7	13.7	} Drilled by Bill Purtymun & Merl Wheeler
S 50-2	3" 2"	Steel PVC	0.5 13.7	13.7	
S 50-3	3" 2"	Steel PVC	0.5 13.7	13.7	
S 50-4	3" 2"	Steel PVC	0.5 13.7	13.7	
S 50-5	3" 2"	Steel PVC	0.5 13.7	13.7	
S 50-6	3" 2"	Steel PVC	0.5 13.7	13.7	
P1-1	2"	PVC	--	4.8	} These holes were drilled into the crushed tuff fill <u>above</u> the trash filled pits. Drilled by Bill Purtymun & Merl Wheeler.
P1-2	2"	PVC	--	3.6	
P2-1	2"	PVC	--	3.0	
P2-2	2"	PVC	--	1.5	} All P24-n holes should have been drilled into the base of the pit before the trash was put in. They all use a wooden stand-off frame for support. All have trash against the pit and/or stand-off around the complete perimeter of the pipe (except for those near the site of the pit). All are bent, but you can get to the bottom with the probe. Drilled by Bill Purtymun & Merl Wheeler.
P7-1	4"	PVC	--	25	
P7-2	4"	PVC	--	25	
P7-3	4"	PVC	--	25	
P24-1	4"	PVC	--	25	
P24-2	4"	PVC	--	25	
P24-3	4"	PVC	--	25	

TABLE OF MOISTURE MEASURING HOLES

<u>Hole Designation</u>	<u>Casing Diameter (in.)</u>	<u>Casing Type</u>	<u>Casing Depth (meters)</u>	<u>Depth of Hole (meters)</u>	<u>Comments</u>
S 150-1	4"	PVC	1.25	24.4	None are presently being monitored. All holes drilled by Don Van Etten and Thad Stevens, Arlene Nock, and Wil Herrera. Note: the actual hole diameter is 3" and the top 1 meter was drilled with a 6" auger. The 1.25 meter PVC sleeve was sealed into the 6" portion with sulfa-set. For further information, see "SHAFT 150 MONITORING HOLES DRILLING REPORT", Don Van Etten, H8-77-115.
S 150-2	4"	PVC	1.25	25.3	
S 150-3	4"	PVC	1.25	18.3	
S 150-4	4"	PVC	1.25	18.3	
S 150-5	4"	PVC	1.25	15.2	
S 150-6	4"	PVC	1.25	23.5	
S 150-7	4"	PVC	1.25	24.4	
S 150-8	4"	PVC	1.25	22.9	
S 150-9	4"	PVC	1.25	23.8	
P-8 Series					None are being monitored because they are bent to such a degree that the probe will not slide down the pipe.