

OFFICE MEMORANDUM

TO : Margaret Anne Rogers, H-8, MS 737 DATE: March 12, 1976
 Thru : J. R. Buchholz, H-7 *JRB*
 L. A. Emelity, H-7 Alt. Group Leader *LAE*
 FROM : P. E. McGinnis, H-7, MS 518 *P.E.M.*
 SUBJECT : GENERAL'S TANKS WASTE
 SYMBOL : H7-76-PEM-162

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TA 21

In response to our phone conversation March 2, 1976, I have the following additional information concerning the liquid waste stored in the "General's Tanks (DPW-107 and DPW-108), Area A, TA-21:

I. The radioactivity data for the 40,000 liters of waste already transferred from the west tank (DPW-107) Area A to TA-21-257 (Ref. Memo H7-76-PEM-86, page 2) were as follows:

Gross α	1.7×10^6	d/m-1	
238Pu	1.6×10^5	d/m-1	(4.1×10^{-6} mg/l)
239Pu	1.7×10^6	d/m-1	(1.25×10^{-2} mg/l)
241Am	1.2×10^4	d/m-1	(1.67×10^{-6} mg/l)

In addition to the radionuclide content, the following NO₃-Nitrogen levels were determined:

NO₃ as N : 5.99×10^3 mg/l

Using this data, the following totals are estimated for the entire 185,000 liters of General's Tanks Waste and compared to both the totals estimated in the Fall of 1973 (Ref. 10/30/73 G. L. Voelz Memo to E. E. Wingfield - AEC/LAAO), and the totals projected from analyses of a grab sample taken 10/19/73.

II. Total Radioactivity and Nitrates in 185,000 liters estimated from grab sample analysis of 40,000 liters transferred from DPW-107 to DPW-257, June 1975.

A. Total Equiv 239Pu (238Pu, 239Pu and 241Am analyses)	2.5g
B. 241Am portion expressed as 239Pu	0.0g
C. Nitrate as Nitrogen (5.99×10^3 mg/l)	1.1×10^6 g

III. Total Radioactivity and Nitrates Estimated and Reported in 1973 Memo (Voelz)

A. Total Equiv. 239Pu	230 g
B. 241Am portion expressed as 239Pu	77 g
C. Nitrate as Nitrogen (2.9×10^4 mg/l)	5.4×10^6 g

Note: Voelz memo states the Nitrate level 130,000 mg/l as nitrates. Converting this to Nitrates as nitrogen yields the 2.9×10^4 mg/l indicated above.



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IV. Total Radioactivity based on grab sample analysis 10/19/73

	East DPW-108 (34,000 ℓ)	West DPW-107 (151,000 ℓ)
A. Total Equiv. ^{239}Pu (based on gross α)	.8 g	93 g
B. ^{241}Am portion ex- pressed as ^{239}Pu	.03g	55 g
C. Nitrate as Nitrogen	$(3.45 \times 10^4 \text{ mg/ℓ}) =$ $1.1 \times 10^6 \text{ g}$	$(6.59 \times 10^3 \text{ mg/ℓ}) =$ $1.0 \times 10^6 \text{ g}$

V. As you can see, the correlation between 1975 analysis and 1973 estimates is not too good.

In conversation with C. W. Christenson, the difference between 1973 grab sample analysis and the 1973 memo were explained. Apparently C. W. and Voelz felt the safest approach was to use data from the General's Tanks Notebooks and data from sample analysis to determine the maximum amount of radioisotopes and nitrates possibly contained in DPW-107 and 108.

VI. Disposition of the 185,000 liters of General's Tanks Waste

- A. On June 19, 1975 40,000 liters from the west tank were transferred to TA-21-257. Shortly afterwards, the entire contents of the east tank (~34,000 liters) were transferred to the west tank. This action was taken to permit immediate utilization of the east tank for disposal of non-retrievable cement paste generated at TA-21-257.
- B. The total 40,000 liters transferred to Bldg. 257 have been treated in the waste treatment facility at Bldg. 257 (TA-21-257) and Group H-7 is waiting for approval from Group H-8 to treat the remaining 145,000 liters of General's Tanks waste. Due to the inability of the Treatment facility at Bldg. 257 to significantly remove nitrates from influent waste, a large portion of the nitrates in the 40,000 liters treated was discharged to the canyon in the plant effluent. H-8 is presently conducting a ground water environmental impact study on these nitrates.
- C. Group H-7 is anticipating chemical treatment of the remaining General's Tanks waste following H-8 approval and initiation of non-retrievable cement paste disposal in the empty General's Tank before July 1, 1976.

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