

OFFICE MEMORANDUM

TO : Dean Meyer, Group Leader, H-1

DATE: 1/14/65

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FROM : John Enders, H-1

SUBJECT: 1964 ANNUAL REPORT ON DISPOSAL OF SOLID RADIOACTIVE WASTE

SYMBOL :

Introduction:

1323 Report
This report covers solid radioactive waste disposal operations during 1964. The fourth quarter data has been included in this report. Information for this report was furnished by Eng-4, The Zia Parks and Refuse Dept., SP-3, and LA Notebooks # S-1065, 11866, and 12442. Some of the data presented is based on estimates and this should be kept in mind if any conclusions are drawn from this report.

Beta-Gamma Waste Disposal: (Area C)

Low level waste (less than 5 R/hr. at contact with containing package) is placed in Dempster Dumpsters at the several Sites that generate this type of waste. The material is unloaded at the Disposal Pit at a segregated location.

High level beta-gamma waste is usually transported to Area C in shielded transport containers and buried in disposal wells. Six wells were filled this year as well as one cement lined well which is used for disposal of irradiated pu and/or uranium solidified liquid waste.

In August, five plutonium contaminated sodium loops from Ten Site were placed in disposal wells. Each loop was then covered with sand and cement.

20 new disposal wells were dug this year. Of these, ten were lined with cement with a 12" diameter tube placed in the center. Filled wells are capped with about three feet of cement.



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Pit #5, Area C, was finally filled this year, and back-filled to ground level. This pit was dug originally to contain material from the demolition of D Bld., TA-1 and in recent years has been used as a depository for D-38 material. Building debris from the TA-1 demolition operation this summer was placed in the pit until it was filled.

A cost write-off for Area C is reported by calendar quarter for charges incurred in this Area. The charge for back-filling pit #5 is not included as this cost was charged to the TA-1 Demolition Operation.

	<u>1st Qtr.</u>	<u>2nd. Qtr.</u>	<u>3rd. Qtr.</u>	<u>4th Qtr.</u>	<u>1964 Total</u>
1. Fencing	\$97	\$97	\$97	\$97	\$388
2. Drill 20 Wells	3,598				3,598
3. Cover drums	61		55		116
(Fencing bal. as of 12/31/64=\$397)					\$4,102

Area G:

Pit #3 continued to receive routine trash as well as considerable scrap material. As of the end of the year the fifth layer was completed. It is estimated that this pit will be filled by mid-1965.

Pit #4 was completed during the summer and was used to receive scrap material from TA-1. A trench, dug along the south floor of the pit, was used for burning combustible scrap. Air samples, taken during burning operations, were all negative which would indicate that the smoke generated did not contain measureable amounts of radioactive material.

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There were three out-of-town classified material deliveries to pit #3, Area G, this year. This material is buried as soon as it is unloaded into the pit. The charges for these deliveries are not reported as they are back-charged to the Sender.

A fire occurred in pit #3 of unknown origin on 11/21/64 at about 5:30PM. The Fire Dept. put out the fire about one hour later. The smoke from the fire traveled slowly east of pit #3 and a monitoring survey of this area indicated radioactive contamination out as far as about 450 feet from the area fence. This is only the second time, after a fire in a contaminated dump, that radioactive contamination has been detected outside of the area fence.

On 5/25/64, a decision was made to attempt recovery of some material from pit #2 which had been buried in the third layer of trash in the pit about one and a half years ago. The approximate location of the material had been logged into LA Notebook #11866 which afforded information as to where to dig. The material was successfully recovered on 5/28/64 after removal of about 25 feet of overburden.

Data Explanation:

The following attempts to explain the derivation of data presented in this report:

1. Cardboard boxes. These cost 19¢ each and hold an estimated volume of 0.087 cubic yards.
2. Small plastic bags now cost 7¢ each. This is a reduction in price which formerly was 14¢ each. These bags hold about 0.037 cubic yards.
3. Large plastic bags now cost 7¢ each. The former price was 51¢ each.

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- 3.(continued) These bags will hold about 0.46 cubic yards of material.
4. 55 gallon drums cost \$8.29. Their volume is estimated to be 0.3 yd.³.
5. Two inch masking tape costs 64¢ per roll. The number of rolls used per quarter is based on an estimate.
6. The charge for Zia Janitors is based on a cost-time survey made by Pascual Chavez, H-1 and Don Rice, Zia Tech Janitorial Supervisor. The survey indicated that it took one man-hour per day to package waste.
7. The D-7 Dezer rental is a flat monthly charge of \$150 per month.
8. The Health Physics Surveyor charge includes wages and overhead for an estimated 6 hours per day.
9. The H-1 radio charge of \$51 per quarter is based on information from the AEC Communications Branch.
10. The H-1 Vehicles cost is based on a \$40 per month per vehicle charge.
11. The charge for protective clothing is based on an estimate.
12. The Area G fencing is being retired at the rate of 1/10 of the original cost per year. The balance as of 12/31/64 equals \$1,912.
13. The charge for covering exposed trash includes wages, overhead and heavy equipment charges.
14. Road and Ruin excavation charge is based on a cost retirement rate of 1/20 per year for construction of two miles of road at Mesita del Buey and excavation of Indian ruins in the area. The balance remaining as of 12/31/64 equals \$7,083.

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15. The charge for excavation of pit #3 is based on an estimated two year use of the pit. The balance as of 12/31/64 equals \$1,935.
16. The charges for Zia Riggers and Laborers is based on the time needed to do the work and is an estimate. The Laborer's charge is figured at \$4.00 per hour per man and the Riggers rate is \$40 per hour or \$120 per day.
17. The charge for transporting Dempster Dumpsters is reported by the Zia Refuse Dept. and is based on the cost per mile times the total mileage needed to haul the containers.
18. The volume of scrap material is based on an estimate.

<u>1964 Volume:</u>	<u>1st.qtr.</u>	<u>2nd.qtr.</u>	<u>3rd.qtr.</u>	<u>4thqtr.</u>	<u>Total(yd.3)</u>
1. Boxes	584	547	482	450	2,063
2. Drums	232	159	357	181	929
3. Sm.Pl.Bags	60	73	56	55	244
4. Lg.Pl.Bags	343	331	268	253	1,195
5. Scrap	<u>1,000</u> 2,219	<u>1,000</u> 2,110	<u>3,025</u> 4,188	<u>676</u> 1,615	<u>5,701</u> 10,132

Disposal Charges:

					<u>1964 Total</u>
1. Sm Pl Bags	\$ 226	\$ 276	\$ 105	\$ 104	<u>\$ 711</u>
2. Lg Pl Bags	380	367	41	38	826
3. Boxes	1,275	1,195	1,053	984	4,507
4. Drums	5,231	4,394	7,950	4,990	22,565
5. 2" Tape	256	256	256	256	1,024

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Disposal Charges:(continued)

	<u>1st.qtr.</u>	<u>2nd.qtr</u>	<u>3rd.qtr.</u>	<u>4th.qtr.</u>	<u>1964 Total</u>
6. Zia Janitor	\$9,292	\$9,292	\$9,292	\$9,292	\$37,168
7. D-7 Dozer	450	450	450	450	1,800
8. Vehicles	240	240	240	240	960
9. H-1 Radio	51	51	51	51	204
10. Clothing	50	50	50	50	200
11. Cover Trash	428	893	900	None	2,221
12. Fencing	151	151	151	151	604
13. Road & Ruin Exc.	135	135	135	135	540
14. Excav.Pit#3	1,935	1,935	1,935	1,935	7,740
15. HP Surveyor	2,625	2,625	2,625	2,625	10,500
16. Laborers	1,408	832	1,050	960	4,250
17. Riggers	3,200	1,120	800	320	5,440
18. Haul Dumpsters	<u>2,963</u>	<u>1,728</u>	<u>2,857</u>	<u>2,118</u>	<u>9,666</u>
	\$30,296	\$25,990	\$29,941	\$24,699	\$110,926
<u>Cost per Yd.³:</u>	\$14	\$12	\$9	\$15	\$11(1964)

Comparison of Volume and Costs by Year:

	<u>Volume(Yd.³)</u>	<u>Total cost</u>	<u>Cost/Yd.³</u>
1956	2,537	\$ 71,745	\$28
1957	3,164	75,548	24
1958	3,459	61,800	18
1959	4,838	61,801	13
1960	5,777	74,794	13
1961	7,170	94,110	13
1962	7,144	102,242	14
1963	7,872	117,974	15
1964	10,132	110,926	11