

OFFICE MEMORANDUM

TO : Dean Meyer, Group Leader, H-1

DATE: 1/12/73

FROM : John Enders, Waste Manager, H-1

SUBJECT : 1972 ANNUAL REPORT FOR SOLID RADIOACTIVE WASTE DISPOSAL

SYMBOL : H-1-SRWM-27

1337
Report

Information concerning the fourth quarter is included in this report. Some of the data is based on estimates and this fact should be kept in mind if any conclusions are to be drawn from the report.

Data has been furnished by The Zia Company, Eng-4, Supply and Property Dept., Accounting Dept. and LA Notebooks #14909, 17335, 17845, 17337, 17336, 17338 and 12442.

The format for presentation of some of the data has been changed in order to report waste as to categories requested by the AEC(Uranium, Transuranium, Fission Products &/or Activated Material). As of July, costs reported for Health Physics and Zia charges at TA-54, Area G, are derived from Accounting Dept. ledger for account code 8501.

Prior to September, reports on waste disposal were the responsibility of the CMR Bldg. Section. In September, the office of Waste Manager was created and all reports on waste disposal are now issued from the Manager's office. One Health Physics Surveyor is assigned, full time, to the duties of supervision of solid radioactive waste disposal.

An operating budget for fiscal 1973, of \$70,000 was made in July for all costs directly chargeable to the disposal area activities. Charges are being made against account code 8501. After six months of operation it now appears that the disposal area operations may not exceed this budget.

In August, waste delivered by Dempster Dumpster to Area G is being covered on the same day it is delivered. The immediate covering provides protection from potential fire hazard. In September, delivery schedules were set up on a bi-weekly basis so as to reduce operational costs. Thus far, this system has been working well.

Drums(55 gallon) filled with dewatered sludge from TA-50 or cement paste from Bldg. 257, DP West, are being stacked in pit #8, Area G. Current practice calls for an accumulation of about 100 drums before stacking as this number can be handled in one day. It now appears that



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the stacking operation can be carried out about every other month. Considerable trouble has been encountered with the old fork lift used for this work. The machine is unable to operate in mud, snow or loose uneven ground. In addition, excessive maintenance is being required and it is hoped that a more efficient type of equipment may be obtained to replace it. Since April, 1972, a total of 1,392 drums have been stacked in pit #8.

Segregation of solid waste was started in August when five new pits were made available. Uranium contaminated equipment is being stored in pit #16. Routine, low-level uranium contaminated waste from those Sites handling only uranium isotopes is being placed in pit #21. Low level plutonium waste (less than 10 nCi/gm) is placed in pit #17. ²³⁸plutonium waste is being stored in the southwest portion of pit #5. D-38 material is being buried along the north side of this pit. Pit #12 is being used to store material that is estimated to be contaminated with more than 10 nCi/gm of transuranic isotopes. As this material is to be stored in a retrievable condition for a period of up to twenty years, the kind of container to be used will require some study. Currently, 55 gallon drums or plywood crates are being used. The crates are beginning to show signs of deterioration due to weathering and some type of shelter may be required in the future.

Cost and volume data explanation:

1. Small plastic bags:

The current price quoted in the Supply and Property Dept. stock catalogue for GS-2308, a 5 mil thick by 13" X 12" X 24", is six cents each. The number reported is based on actual counts made by the Zia janitors. The totals reported are conservative because these bags are also used as liners in cardboard boxes at several Sites.

2. Large plastic bags: (GS-2306, 21" X 26" X 40", 5 mil)

The numbers reported are based on actual counts made by Zia janitors. The current price is 18 cents each. The volume estimate of 4 ft.³ is based on a series of measurements made by the CMR Bldg. Section of filled bags during 1972.

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3. Cardboard boxes:
The cost per box is 20 cents and the volume estimates of 2.2 ft.³ per box is based on the physical demensions. The totals reported are from Zia janitors who load the boxes into the Dempster Dumpsters.
4. Masking tape: (GS-3854/1W-7)
The cost per roll is 98 cents and the numbers reports are based on estimates.
5. 55 gallon drums: (LG-1110, ICC Spec. 17H)
These drums cost \$11.00 each and the volume is estimated from the physical size, rounded off to 8 ft.³.
6. 30 gallon drums: (LG-1102)
These drums cost \$6.17 each and the volume is estimated at 3 ft.³.
7. Plywood crates:
An estimate of \$200 per crate is used and the volume reported is based on the physical size of the crate.
8. Zia Janitor charge:
An increase is reported for the fourth quarter of 1972 due to a review of this operation with the Zia Tech Janitorial office. The charge is based on an average salary of \$5.33 per hour (wages plus overhead), 43 janitors working one hour per day, and 61 working days in the quarter.
9. Health Physics:
The costs are based on data furnished by the Accounting Dept. for account code 8501 that was started in July. Prior costs are estimates for the use of a Health Physics Surveyor, part time, on waste disposal activities. The charges include wages, overhead, materials and communications.
10. Protective clothing:
The estimate is based on protective clothing useage at Area G. Zia personnel working on covering operations or drum stacking jobs are required to wear protective clothing.
11. Road and Ruin excavation:
When Mesita del Buey was first opened up as a disposal area, two miles of gravel roadway was constructed and several Indian ruins were excavated. The charge is a cost write-off for this work over a twenty year period.

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12. Zia Labor:
This includes wages, overhead, materials and heavy equipment charges made against account code 8501, as reported by the Accounting Dept. since July. Prior to this date, most of the charges were estimated.
13. Transport Dempster Dumpsters:
The charges are based on a cost per mile as reported by the Zia Refuse Dept. and the number of miles that is also reported by the Zia Refuse Dept.
14. Excavate 5 new pits:
The charge is based on a cost write-off for the work of \$3000 per quarter. The balance as of December 31, 1972, amounts to \$9000.
15. H-1 Vehicles:
The charges are based on information furnished by Supply and Property Dept. for two pickups and one 1ton truck.
14. H-1 Radios:
The charges are based on information furnished by E-1 for one consule and three units in the above H-1 trucks.
15. Fencing:
This is a cost write-off for additional fencing that was installed at Area G when the Area was expanded in 1971. The balance as of the end of the year is \$10,860.
16. Drilling disposal shafts:
These charges are based on estimates.
17. Delivery of Ready-Mix cement:
Cement is used to plug filled disposal shafts. The charges are based on estimates.
18. Delivery of hot asphalt:
Hot asphalt is used to seal material in the tritium disposal shaft. The charge is based on an estimate.

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<u>Packaging Materials:</u>	<u>1st</u> <u>Qtr.</u>	<u>2nd</u> <u>Qtr.</u>	<u>3rd</u> <u>Qtr.</u>	<u>4th</u> <u>Qtr.</u>	<u>1972</u> <u>Total</u>
1. Sm. plastic bags	2,073	2,215	2,387	2,844	9,519
2. Lg. plastic bags	845	880	887	1,004	3,616
3. Cardboard boxes	6,552	6,196	5,979	4,895	23,662
4. Drums(55 gal.)	465	416	377	197	1,455
5. Drums(30 gal.)	19	34	16	56	125
6. Crates	7	11	4	2	24
7. Rolls tape	500	500	500	500	2,000
<u>Disposal Costs:</u>					
1. Sm.plastic bags	\$ 166	\$ 177	\$ 191	\$ 227	\$ 761
2. Lg.plastic bags	203	211	213	241	868
3. Boxes	1,310	1,239	1,196	979	4,724
4. Drums(30 gal.)	117	210	99	345	771
5. Drums(55 gal.)	4,594	4,110	3,725	2,167	14,596
6. Crates	525	1,650	800	400	3,375
7. Tape	500	500	500	500	2,000
8. Janitor charge	7,589	7,589	7,589	13,980	37,557
9. Health Physics	2,625	2,625	10,941	11,402	27,593
10. Protective clothing	50	100	100	100	350
11. Rd.& Ruin excav.	135	135	135	135	540
12. Zia Laborers	1,632	3,224			4,856
13. Zia Riggers	275	1,380			1,655
14. Cover trash	900	1,728			2,628
15. Transport D.D.	3,098	3,377	3,581	2,553	12,609
16. Excav. 5 pits	3,000	3,000	3,000	3,000	12,000
17. H-1 vehicles	240	240	240	240	960
18. H-1 radioa	166	166	166	166	664
19. Fencing	1,218	1,218	1,218	1,218	4,872
20. Drill shafts	400			500	900
21. Zia labor			4,602	6,245	10,847
22. Ready-Mix cement				300	300
23. Asphalt				300	300
Totals:	\$29,013	\$33,149	\$38,606	\$45,038	\$145,806
Cost per Ft. ³	\$0.76	\$0.90	\$0.92	\$1.23	\$0.95

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Waste Volume: (Ft. ³)	1st. <u>Qtr</u>	2nd. <u>Qtr</u>	3rd. <u>Qtr</u>	4th. <u>Qtr</u>	Total (Ft. ³)
I. U waste					
A. Pit #5					
1. TU chips	0	152	48	255	455
2. Graphite	216	108	162	432	918
3. Crate			24		24
B. Pit #6					
1. Boxes	6,981	5,390	2,790		15,161
2. Drums	280				280
3. Loose material	2,889	2,133	1,782		6,804
4. Bendix		744			744
C. Pit #21					
1. Boxes			3,047	4,129	7,176
2. Loose material			4,482	1,304	5,786
D. Disp. shafts	183.3	27.4	94	121.6	426.3
E. Pit #16		648			648
	10,549.3	9,202.4	12,429.0	6,241.6	38,422.3 Ft. ³
II. TRU waste					
A. Pit #5					
1. ²³⁸ Pu drums	64	208		8	280
2. " crates		128			128
B. Pit #6 (<i>less than 10 mci/gm - estimated</i>)					
1. Bags	3,380	2,808	1,652		7,840
2. Boxes	7,214	8,120	3,113		18,447
3. Loose material	5,129	11,984	7,389		24,502
4. Drum(30 gal.)	9				9
C. Pit #8 (<i>greater than 10 mci/gm ?</i>)					
1. Drums(55 gal.)		3,096	2,400	1,120	6,616
D. Pit #12 (<i>greater than 10 mci/gm - estimated</i>)					
1. Crates	896	1,215	1,760		3,871
2. Drums	64		32	32	128

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II. TRU waste(continued)

	1st. Qtr.	2nd. Qtr.	3rd. Qtr.	4th. Qtr.	Total (Ft. ³)
E. Pit #17 <i>(less than 10 mci/gm - estimated)</i>					
1. Bags			1,900	4,016	5,916
2. Boxes			4,112	6,639	10,751
3. Drums(55 gal.)				570	570
4. Drums(30 gal.)				24	24
5. Loose material			4,617	9,474	14,091
F. Area A(DP West)			2,500		2,500
G. Disp. Shafts	151.3	45.4	39.1	24.6	260.4
H. Bldg. 257(DP West) <i>(Cement pits - greater than 10 mci/gm)</i>				8,119.0	18,541.5
	<u>27,329.8</u>	<u>27,604.4</u>	<u>29,514.1</u>	<u>30,026.6</u>	<u>114,474.9</u>

III. FP/IA waste

A. Disp. shafts	6.2	4.1	118.2	283.9	412.4
Total Waste volume:					
1. FP/IA , U, TRU	37,885.3	36,810.9	42,061.3	36,552.1	153,309.6

xc: File

Xc by H-1 to:

G. L. Voelz, H-DO

C. W. Christenson, H-7

John Enders