



THE DOW CHEMICAL COMPANY

ROCKY FLATS DIVISION
P O BOX 888
GOLDEN COLORADO 8040

AREA 900

old drum
storage
area

April 14 1970

E A Putzier

903 OIL DRUM STORAGE AREA

A brief history of the disposal of oil drums from the 903 Area is described below

- 1 Work to remove oil from the 903 Area began January 23 1967 under the supervision of D M Anderson M E Maas and R M Vogel
- 2 From January 23 1967 through March 10 1967 uranium oil drums which were in good condition were transferred to Building 774 and processed
- 3 Building 903 went hot on March 10 1967 and started processing oil drums This building was designed to prefilter the oil prior to transferring plutonium contaminated oil to Building 774 for final processing
- 4 From March 10 1967 through May 18 1967 there were a total of 191 drums of plutonium contaminated oil filtered and shipped to Building 774
- 5 On May 18 1967 operations at Building 903 were discontinued due to the amount of time this process was taking
- 6 Drum-to-drum transfer in the field began May 18, 1967, and the drums shipped to Building 774 without prior filtration in Building 903
- 7 From March 17 1967 through May 10 1967 in addition to the plutonium transfers there were 297 drums of uranium contaminated Alk-Tri waste shipped to Building 774 and processed
- 8 May 10 1967 through May 28 1968, a total of 4 826 drums containing 50 gallons of oil each were sent to Building 774 and processed
- 9 In addition to the oil storage area drums there were a total of 650 drums from Building 776 current generation sent to Building 774 for processing A pipe line installed

REVIEWED FOR CLASSIFICATION

By R M Hoffman

7/11/90

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REVIEWED FOR CLASSIFICATION/UCM

By George H. [unclear]

Date @ 7/13/90

Keyser C
Oil drum
Storage
Health
Sherlock J
Putzier E A

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REVIEWED FOR CLASSIFICATION

ADMIN RECORD

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Date 11/4/89

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from Building 776 to Building 774 eliminated this additional oil drum generation

- 10 During the transfer operations it was noted that at the bottom of all drums a deposit of sludge remained after removal of the oil. This sludge varied in depth from 1/2 inch to 3 inches and averaged approximately 1 inch. By drum counter results the sludge within the empty drums contained a total of 5 152 grams of plutonium. These empty drums were later disposed of by adding Oil Dry and MicroCel to absorb the sludge. The drums containing the plutonium sludge and absorbent were then incased in plastic placed in boxes and shipped to the burial grounds.
- 11 The total number of drums originally in the field numbered 5 237. After transfer of contents 4 826 drums were transported to Building 774 of which 3 572 contained plutonium contaminated oil.
- 12 Taking the total number of 5 237 drums minus 4 326 drums containing 50 gallons each which were sent to Building 774 leave 411 drums to be accounted for. The best explanation for the 411 drums and the volume contained with each follows:
 - A All of the drums sent to the oil storage field originally were not completely full.
 - B Volume taken up by the sludge which was discarded with the empty barrels.
 - C Leakage out of the barrels and into the ground within the storage area.
- 13 To the best of everyone's memory and knowledge a total of approximately 100 barrels containing 50 gallons each or 5 000 gallons of oil leaked out of the drums and was absorbed into the soil within the fenced area.
- 14 The average of all oil samples taken from the plutonium contaminated oil barrels was approximately 5×10^{-3} grams of plutonium per liter of oil. This number is backed up by the letter from M E Maas dated September 24 1968 that shows a total of 3 065 grams of plutonium which was accounted for during the process of the contaminated oil.

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There were 594 grams salvaged from filters out of Building 903 and accounted for from organic liquid solidification processing in Building 774 were 2 471 grams totaling 3 065 grams Therefore taking the 3 572 drums of plutonium which were processed at 50 gallons each we get a total of 178 600 gallons or 675 108 liters of oil Divide this number of 675 108 liters into 3 065 grams and we get 4.54×10^{-3} grams per liter

- 15 Using 4.54×10^{-3} grams per liter in conjunction with the estimated 5 000 gallons of oil that remains under the asphalt we will get (5 000 gallons or 18 900 liters $\times 4.54 \times 10^{-3}$ grams per liter) = 85 81 grams of plutonium (This is the amount of plutonium remaining under the asphalt pad)
- 16 May 28 1969 through June 11 1968 the remaining empty drums and wooden pallets were placed into waste boxes and shipped
- 17 In July 1968 a survey of the plutonium contamination on the surface of the soil in the 903 Area was completed The results of the survey and the Health Physics recommendation for containment of the contamination were sent to Division Services Manufacturing and Facilities
- 18 In October 1968 weeds and vegetation were burned off the 903 contaminated barrel storage area preparatory to applying an asphalt cap over the area No airborne contamination problems were encountered
- 19 In November 1968 grading outside the hot fence area was started in preparation to applying an asphalt cap over the area This work consisted of moving slightly contaminated soil to the fenced area
- 20 In late November 1968 the six contaminated holding tanks outside Building 903 were disconnected and crated for shipment to hot waste
- 21 On December 17 1968 E Mathews USAEC ALO Operational Safety Division visited Rocky Flats The purpose of his visit was to discuss the history and corrective actions for the 903 Area He also indicated an interest in the drum storage area east of the nitrate ponds

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- 22 On January 15 1969 the hot fence was placed into two hot waste boxes and shipped
- 23 On February 15 1969 three more waste boxes were shipped from the 903 Area containing Type 5 LSA waste
- 24 The two fork lifts which were highly contaminated during the oil drum removal were placed into wooden crates and shipped to hot waste on April 1 1969
- 25 During May 1969 a total of 33 drums of contaminated rocks were removed from the 903 Area and discarded as hot waste
- 26 In May 1969 Building 904 was decontaminated and removed to a location east of the Fire Barn to accomodate drybox flammability studies
- 27 In May 1969 the road grader used to move contaminated soil and rocks outside of the 903 fenced area was decontaminated and released to surplus
- 28 In July 1969 Building 903 was moved to a location immediately east of Building 666
- 29 On July 23 1969 the first course of fill was applied to the 903 Area
- 30 The base course material overla the soil sterilant and the asphalt prime coat for the 903 contamination barrier were completed on September 24 1969
- 31 During October 1969 the asphalt was applied The four sample wells around the 903 Area were completed on November 11 1969
- 32 Starting February 23, 1970 operations were started to apply additional fill over the surrounding area directly east of 903 due to soil contamination
- 33 Additional soil fill operations were completed on March 4 1970
- 34 As of April 3, 1970 no water has been detected in the wells

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