



UNITED STATES  
NUCLEAR REGULATORY COMMISSION

REGION IV  
URANIUM RECOVERY FIELD OFFICE  
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DENVER, COLORADO 80225

DEC 15 1989

URFO:DLJ  
Docket No. WM-48  
040WM048960E

MEMORANDUM FOR: Docket File No. WM-48

FROM: Dawn L. Jacoby  
Project Manager

SUBJECT: SUPPLEMENTAL STANDARDS APPLICATION FOR SLOPES OF SMELTER MOUNTAIN AT THE DURANGO PROCESSING SITE (RAP MODIFICATION #2)

BACKGROUND

The EPA standards, under 40 CFR Part 192.12(a) require that the concentration of radium-226 in land averaged over any area of 100 square meters shall not exceed the background level by more than 5 pCi/g, averaged over the first 15 cm of soil below the surface, and 15 pCi/g averaged over 15 cm thick layers of soil more than 15 cm below the surface. The radon flux standard, 40 CFR 192.02(b)(1), requires that the release of radon-222 not exceed an average release rate of 20 pCi/m<sup>2</sup>s.

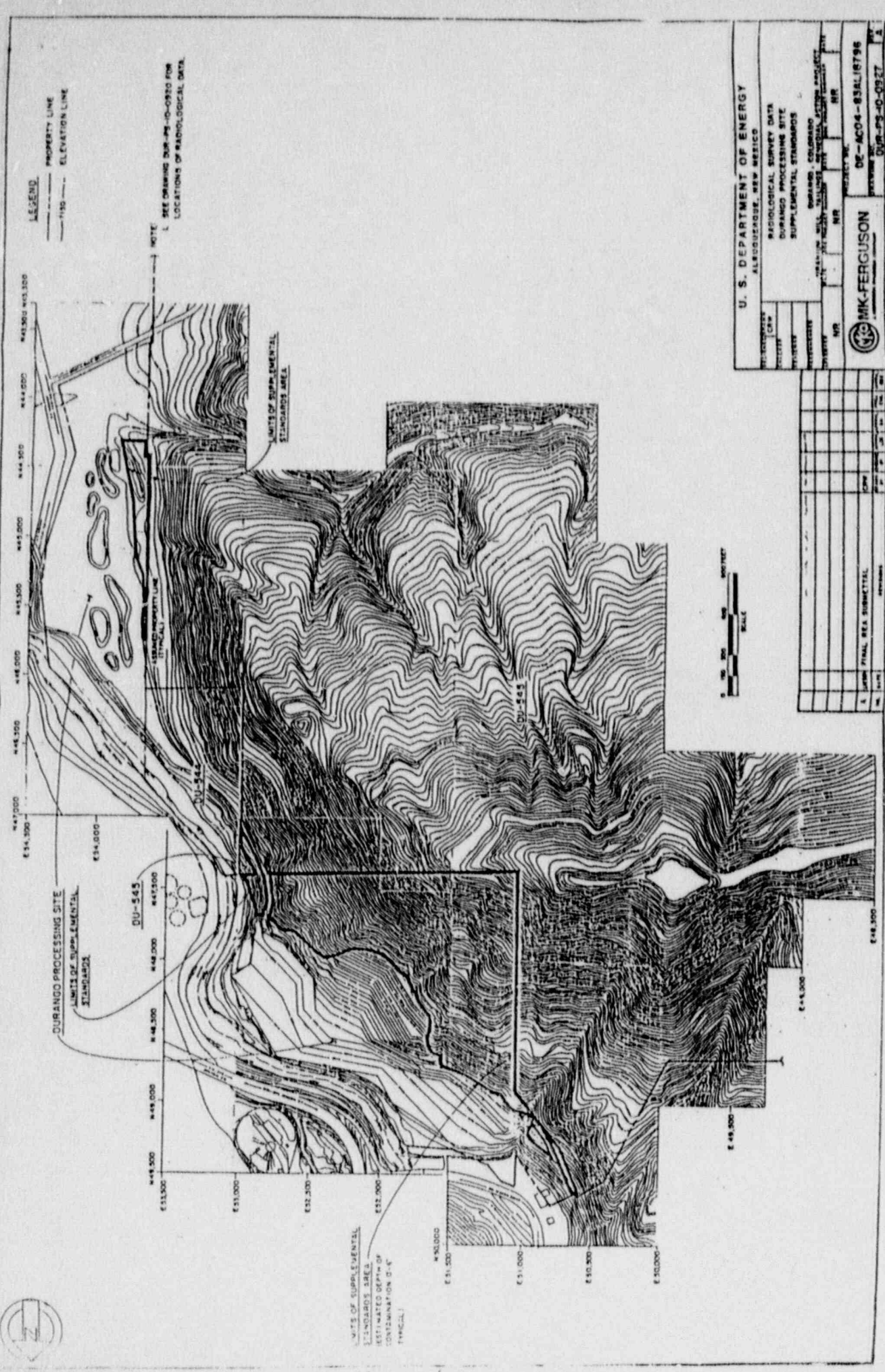
On October 17, 1989, DOE applied for supplemental standards for two steeply-sloping hillside areas on Smelter Mountain. The slopes of Smelter Mountain are contaminated with windblown material. The proposed remedial action will leave the contamination in place. Supplemental standards were applied for based on the obvious risk to workers and the resulting environmental harm which would result from removal of the material.

DISCUSSION

During a site visit conducted September 6, 1989, the proposed area was observed and the proposal discussed with DOE and the State of Colorado. The two areas identified are located (1) on the slopes of Smelter Mountain above the footprints of the old tailings piles and the tailings pile access roads, with a small area just to the south of the old tailings piles, between the UMTRA haul road and the Animas River, and (2) on the slope of Smelter Mountain above the UMTRAP haul road, just above the area of the raffinate ponds. These areas are shown on Figure 1.

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PDR WASTE  
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**LEGEND**

PROPERTY LINE  
ELEVATION LINE

NOTE

SEE DRAWING DWG-PS-10-0920 FOR LOCATIONS OF RADIOLOGICAL DATA

DURANGO PROCESSING SITE  
LIMITS OF SUPPLEMENTAL STANDARDS

LIMITS OF SUPPLEMENTAL STANDARDS AREA

LIMITS OF SUPPLEMENTAL STANDARDS AREA  
ESTIMATED DEPTH OF CONTAMINATION 0-4" (TYPICAL)



**U. S. DEPARTMENT OF ENERGY**

ALBUQUERQUE, NEW MEXICO  
RADIOLOGICAL SURVEY DATA  
DURANGO PROCESSING SITE  
SUPPLEMENTAL STANDARDS

DURANGO, COLORADO  
PROJECT NO.  
NR  
NR

**MK-FERGUSON**  
DE-AC04-83SL1R796  
DUR-PS-10-0927

NO.	1	2	3	4	5	6	7	8	9	10	11	12
DATE												
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REVISION												



DEC 15 1989

Radiological Survey Assessment

Outdoor gamma surveys were conducted on the accessible portions of areas. Field personnel established generalized gamma radiation levels of 25-30 microR/hr with "hot spots" of up to 60 microR/hr. 264 soils samples were also taken in accessible areas with the test reporting activities of less than 1.3 to over 600 pCi/g. No average value was reported.

The DOE report concluded that supplemental standards should be applied to the 308,958 square yards delineated on Figure 1. They describe the area as "sporadically contaminated in the top 6 inches of soil with steep, washed areas at or near background Ra-226 concentrations while more level and vegetated areas have higher activity."

NRC review indicates that the data presented supports the DOE conclusion.

Supplemental Standards

Criteria for applying supplemental standards (40 CFR 192.21) include (1) posing a clear and present risk of injury to workers, and (2) directly producing environmental harm that is clearly excessive compared to the health benefits of achieving primary standards. The area is steep enough that the possibility of human intrusion is remote. Cost is not a consideration for applying supplemental standards at the processing site.

## CONCLUSIONS

The staff finds that due to the steepness of the areas, the locations met two supplemental standard criteria (40 CFR 192.21(a) and (b)). These include posing a clear and present risk of injury to workers and directly producing environmental harm that is excessive compared to health benefits. Also, the overall remedial action design meets the intent of the low as reasonably achievable philosophy of 40 CFR 192.22.

Therefore, the staff recommends approval of supplemental standards for the area requested.

*Dawn L. Jacoby*  
Dawn L. Jacoby  
Project Manager

Approved by:

*Ramon E. Hall*  
Ramon E. Hall  
Director

Case Closed: 040WM048960E

WM-48/960E/DLJ/89/12/11/M

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EJA for

12/14/89