

PROJECT FACT SHEET

CONTRACT TITLE: Dose Assessment of NORM Disposal by Landspreading

ID NUMBER: FEW 49392

CONTRACTOR: Argonne National Lab

B & R CODE: AB0555000

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CONTRACT PERFORMANCE PERIOD:

10/01/1996 to 09/30/1998

PROJECT SITE

CITY: Argonne

STATE: IL

CITY:

STATE:

PROGRAM: Environmental-Gas

CITY:

STATE:

RESEARCH AREA: Environmental

FUNDING (\$1000'S)	DOE	CONTRACTOR	TOTAL
PRIOR FISCAL YRS	26	0	26
FISCAL YR 1998	0	0	0
FUTURE FUNDS	0	0	0
TOTAL EST'D FUNDS	26	0	26

OBJECTIVE: Conduct an assessment of the potential radiological doses associated with landspreading naturally occurring radioactive material (NORM) waste generated by petroleum production and processing activities.

PROJECT DESCRIPTION:

Work to be performed: The landspreading scenario will be modeled by using the RESRAD computer code. The RESRAD analysis considers a residential scenario, in which a family is assumed to live on site and raise crops and livestock for consumption. The pathways analyzed include external irradiation; inhalation of resuspended dust and radon; and ingestion of crops, milk, meat, fish, surface water, groundwater, and contaminated soil derived from the site. For comparison purposes, nonresidential scenarios (e.g., industrial, recreational) and worker scenarios also will be modeled. A subset of relevant pathways will be analyzed.

PROJECT DESCRIPTION (Continued)

Background: The production of oil and natural gas sometimes results in the accumulation of NORM at an elevated concentration in by-product waste streams, such as the scale and sludge that accumulate inside production and processing equipment. In the past, the petroleum industry commonly disposed of these wastes via landspreading, a practice consisting of spreading scales and sludges over the soil surface and sometimes moving the waste into the top layer of soil. Landspreading was generally regarded as an inexpensive, effective method for disposing of the waste while simultaneously allowing the hydrocarbon components of the waste to degrade. However, because of growing concerns over the potential for adverse environmental effects, states promulgated regulations governing landspreading practices. With the advent of state-level NORM regulations, further restrictions have been placed on landspreading. Under these regulations, landspreading NORM-contaminated scales and sludges is either no longer allowed or is permitted only if certain criteria (e.g., dilution to background plus 5 pCi/g or less, or dilution so that the ambient exposure rate does not exceed 50 UR/h above background) are met.

PROJECT STATUS:

Current Work: A draft report summarizing the results of the dose assessment has been delivered to DOE/NPTO. A draft report suitable for external peer review is currently being prepared.

Scheduled Milestones:

Accomplishments: The following deliverables have been produced: 1) draft report titled "Potential Radiological Doses Associated with the Disposal of Petroleum Industry NORM Via Landspreading."