Rocky Flats

Information

DOE Public Affairs 966-5993
EG&G Community Relations 966-5754

OU2
Surface Water Interim Measures/ Interim Remedial Action South Walnut Creek Basin

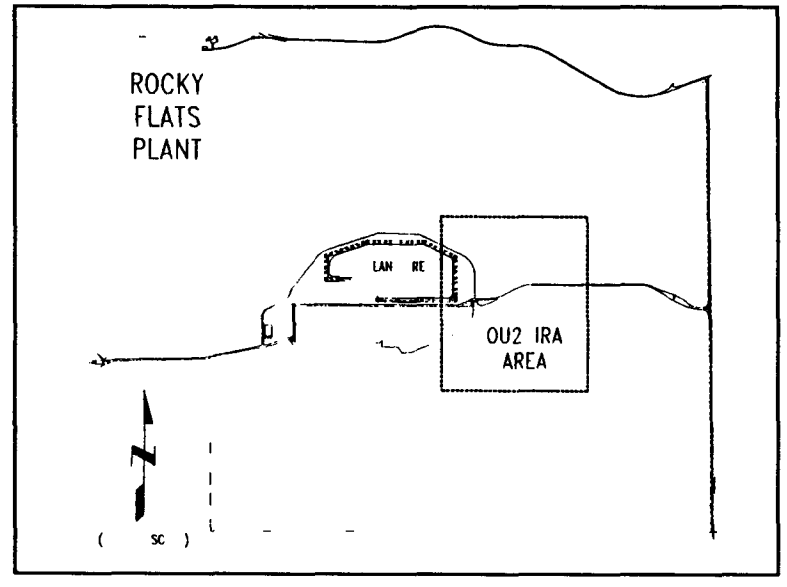
Water quality investigations have identified the presence of volatile organic compounds (VOCs) and radionuclides in surface waters within Operable Unit No 2 at the Rocky Flats Plant Operable Unit No 2 (OU 2) the environmental cleanup area comprising the 903 Pad Mound and East Trenches Areas is located in the southeast corner of the plant about one and a half miles from the outer edge of the plant's boundary at Indiana Street

The contamination of the 903 Pad and Mound Areas is largely attributed to the storage in the 1950s and 1960s of waste drums that corroded over time allowing hazardous and radioactive materials to leak into the surrounding soil The East Trenches Area was used for the disposal of plutonium and uranium-contaminated waste and sanitary sewage sludge from 1954 to 1968 Two areas adjacent to the trenches were used for spray irrigation of sewage treatment plant effluent some of which may have had contaminants that were not removed by the treatment system

Operable Unit No 2 is one of 16 operable units identified in the Interagency Agreement (IAG) for environmental restoration which was signed in January 1991 by the US Department of Energy the US Environmental Protection Agency and the Colorado Department of Health The IAG establishes priorities and schedules for cleanup of the Rocky Flats Plant

In accordance with the IAG an interim remedial action plan was proposed in September 1990 to address contaminated surface waters within OU 2 Although the contaminated surface waters pose no immediate threat to public health and the environment the U S Environmental Protection Agency and the Colorado Department of Health requested the implementation of an interim action to address a potential threat

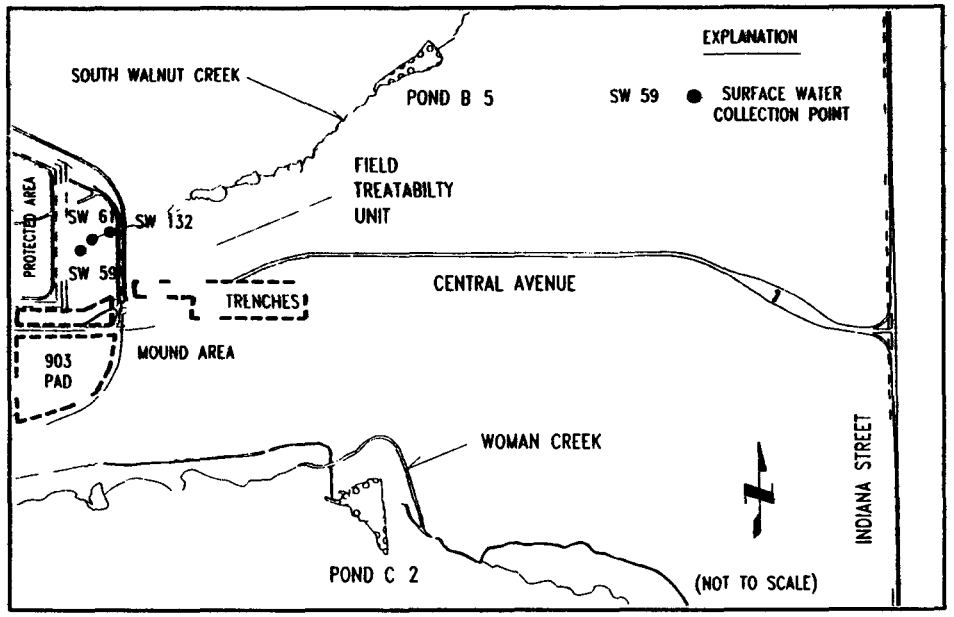
The interim remedial action plan proposed initially involved the collection and treatment of contaminated surface water from culvert discharges and a ground water discharge or seep in the South Walnut Creek drainage area and ground water where it emerges to the surface in seeps in the Woman Creek drainage area The water from both drainage areas was to have been transferred to a treatment facility for removal of the contaminants and discharged into the South Walnut Creek drainage basin



Public and municipal concerns about the proposed plan were identified during public comment in late 1990 As a result of these concerns the U S Department of Energy eliminated from its proposed plan the interbasin

ADMIN RECORD

transfer of Woman Creek drainage water to the South Walnut Creek drainage area for treat ment and discharge Instead the collection and treatment of con taminated water in the two areas will be ad dressed in separate interim remedial action plans one for the South Walnut Creek Basin and one for the Woman Creek Basin



The first interim remedial action plan for OU 2 issued in March 1991 is designed to remove contaminants from surface waters in the South Walnut Creek drainage basin A second interim remedial action plan for the Woman Creek portion of OU 2 is tentatively scheduled for development in late 1991

The interim plan for the South Walnut Creek drainage basin comprises two parts The first part is surface water collection and transfer The second involves surface water treatment

Surface Water Collection and Transfer

The OU 2 interim remedial action plan for the South Walnut Creek Basin calls for the diversion and collection of surface water at three points within the creek Constructed diversion struc tures at the sources will be used to collect the surface water

The flow rates for the three collection systems were determined based on historical flow information from surface water monitoring stations located with the collection systems The collection systems are designed to handle the maximum flows observed at the three stations during field investigations in 1988 1989 and 1990 excluding flows caused by high precipita tion events

Pumps within the three collection structures will transfer the surface water by pipeline to the treatment facility The pipelines will be heated and insulated to prevent freezing in the winter and will be enclosed in an outer sleeve that will contain any leakage

Surface Water Treatment

The selected water treatment method in the interim plan is chemical precipitation with microfiltration followed by granular activated carbon adsorption In chemical precipitation chemical additives cause metals and soluble radionuclides in the water to form particles large enough to be filtered or settled out

To remove volatile organic compounds the water leaving the radionuclide removal stage is passed through columns containing granular carbon that has been processed to increase its porosity and surface area The volatile organic compounds become attached or adsorbed to the carbon particles and thus are separated from the water

The water treatment units will be housed in three 48 foot trailers to protect weather or temperature-sensitive components In addition because amounts of water from the different sources are expected to vary a 10 000 gallon holding tank will be used to regulate the flow of water through the treatment system. The treatment system is designed to handle up to 60 gallons of water per minute continuously The average annual flow of water through the system is estimated at approximately 20 gallons per minute

When the treatment system is fully operational the first two trailers will contain the chemical precipitation and microfiltration units for the removal of metals and radionuclides from the water In the first trailer chemicals will be added to the water to convert soluble radionu clides and metals into particulate form. The second trailer will contain the microfiltration system where particulates will be removed from the water

After undergoing microfiltration the water will be pumped through the third trailer which will house two granular activated carbon columns for the removal of volatile organic compounds The first column will serve as the lead column removing most of the volatile organic com pounds Additional organics will be removed by the second column termed the polishing column When the treatment capabilities of the lead column become exhausted it will be re-placed with the polishing column A new column will then be put into service as the polishing column

The first operational phase of the treatment system the granular activated carbon system is scheduled to begin in May 1991 Current sched ules call for the addition of the second phase of water treatment chemical precipitation and microfiltration by the end of October 1991

These two phases comprise a field scale treatability study which will be conducted to document treated water quality and to analyze the effectiveness of the treatment technologies A treatability test report will be submitted to the U S Environmental Protection Agency and the Colorado Department of Health in 1992

Surface Water Discharge

Following treatment the water will be dis-charged via pipeline into South Walnut Creek, where samples will be collected and analyzed The discharged water will flow into the plant's onsite detention ponds where it will undergo additional treatment and monitoring prior to release and diversion around Great Western Reservoir

Final Remedial Action

Through an IAG required Remedial Investiga tion process the Rocky Flats Plant will continue to perform an extensive technical evaluation of the contamination within OU 2 during imple-mentation of the interim remedial action plan A Feasibility Study will then analyze various remedial action alternatives

Based on the Remedial Investigation and the Feasibility Study the plant will propose a plan for final cleanup of the area Current IAG schedules call for the proposed plan to be released for public comment in mid 1994 and a final decision on the proposed remedy will be made approximately one year later Final cleanup field activities beginning with construc tion of the remedial action are expected to occur in 1997

For more information about cleanup activities at the 903 Pad Mound and East Trenches Areas contact

Jill G Paukert Information Coordinator
Community Relations Plan
EG&G Rocky Flats
P O Box 464
Building T130F
Golden Colorado 80402-0464
(303) 966 6160