

CORRES CONTROL  
OUTGOING LTR NO

# EG&G ROCKY FLATS

DOE ORDER#

93 RF 14738

G&G ROCKY FLATS, INC  
OCKY FLATS PLANT, P O BOX 464, GOLDEN, COLORADO 80402 0464 • (303) 966-7000

December 3, 1993

93-RF-14738

E Allen Howard  
Acting Director  
Environmental Protection Division  
DOE, RFO

TRANSMITTAL OF PROPOSED OUTLINE FOR THE 1994 HYDROGEOLOGIC  
CHARACTERIZATION REPORT - NMH-624-93

I am transmitting a copy of the above proposed report outline for your review and comment  
This report is scheduled for delivery to the Department of Energy on December 2, 1994 The  
report is intended to provide a comprehensive summary of historical and recent hydrological  
investigations at Rocky Flats Plant and promote standardization of site-wide interpretations  
based on our current knowledge of groundwater conditions

Your comments to this outline will assist us in planning for the content of the report Please  
feel free to contact Robert Smith of my staff at extension 8705 if you have any questions or  
require additional information concerning this activity

Ned M Hutchins  
Acting Associate General Manager  
Environmental Restoration Management

RGS bli

Attachment  
As Stated

Ong and 1 cc - E A Howard

DIST	LTR	ENC
AMARAL M E		
BENEDETTI, R L		
BENJAMIN, A		
BERMAN H S		
BRANCH, D B		
CARNIVAL G J		
COPP R D		
DAVIS J G		
FERREIRA D W		
HANNI B J		
HARMAN L K		
HEALY T J		
HEDAHL T		
HILBIG J G		
HUTCHINS N M	X	X
KIRBY W A		
KUESTER A W		
MAHAFFEY J W		
MANN H P		
MARX G E		
MCDONALD M M		
McKENNA F G		
MONTROSE J K		
MORGAN, R V		
POTTER G L		
PIZZUTO V M		
RISING T L		
SANDLIN N B		
SETLOCK G H		
STEWART D L		
SULLIVAN M T		
SWANSON, E R		
WILKINSON, R B		
WILLIAMS S (ORC)		
WILSON J M		
WYANT, R D		
<i>R. H. Jinger</i>		
<i>R. G. Smith</i>	X	X
CORRES CONTROL	X	X
ADMIN RECORD	X	X
PATS/T130G		
TRAFFIC		

CLASSIFICATION

UCNI	
UNCLASSIFIED	X
CONFIDENTIAL	
SECRET	

AUTHORIZED CLASSIFIER  
DOCUMENT SIGNATURE  
REVIEW CLASSIFICATION  
CLASSIFIED BY  
DATE OF ACTION OFFICE

IN REPLY TO RFP CC NO

ACTION ITEM STATUS

1 PARTIAL OPEN  
1 CLOSED

LTR APPROVALS

ORIG & TYPIST INITIALS

RGS bl

## ADMIN RECORD

DOCUMENT CLASSIFICATION  
REVIEW WAIVER PER  
CLASSIFICATION OFFICE

**Draft Outline for the Physical Hydrogeologic Characterization Report:  
December 3, 1993**

- 1 0 Executive Summary
- 2.0 Introduction
  - 2 1 Background
  - 2 2 Purpose and Scope of Report
- 3 0 Review of Previous Hydrogeological Studies
  - 3 1 Reports Issued Prior to 1985
  - 3 2 Reports Issued 1985 and After
- 4 0 Hydrogeologic Setting of RFP and Surrounding Areas
  - 4 1 Climatology
  - 4 2 Vegetation
  - 4 3 Surface-water Hydrology
- 5 0 Regional Hydrogeology
  - 5 1 Alluvial Aquifer
  - 5 2 Arapahoe Aquifer
  - 5.3 Laramie/Fox Hills Aquifer
- 6 0 Description of Site-Wide Groundwater Investigation Activities
  - 6 1 Groundwater Monitoring Program - An Overview
    - 6 1 1 Monitoring Well Network
    - 6 1 2 Water-level Measurements
    - 6 1 3 Groundwater Sampling
    - 6 1 4 Well Abandonment and Replacement Program (WARP)
  - 6 2 Review of Historical Aquifer Test Data
  - 6 3 Aquifer Testing Activities Conducted in 1994
  - 6 4 Stable Isotope and Environmental Tritium Studies
  - 6 5 Groundwater Recharge (Rocky Flats Alluvium)
  - 6 6 Seep Flow Studies
- 7 0 Hydrogeology of the Rocky Flats Plant
  - 7 1 Definition of Hydrostratigraphic Units
    - 7 1 1 Upper Hydrostratigraphic Unit
    - 7 1 2 Lower Hydrostratigraphic Unit
  - 7 2 Upper Hydrostratigraphic Unit
    - 7 2 1 Rocky Flats Alluvium
      - 7 2 1 1 Groundwater Occurrence and Distribution
      - 7 2 1 2 Recharge
      - 7 2 1 3 Discharge
      - 7 2 1 4 Hydraulic Properties
      - 7 2 1 5 Groundwater Flow Conditions
    - 7 2 2 Colluvium
      - 7 2 2 1 Groundwater Occurrence and Distribution
      - 7 2 2.2 Recharge
      - 7 2 2 3 Discharge
      - 7 2 2 4 Hydraulic Properties

	7.2.2.5	Groundwater Flow Conditions
7 2.3		Valley-Fill Alluvium
	7.2.3.1	Groundwater Occurrence and Distribution
	7.2.3.2	Recharge
	7 2 3.3	Discharge
	7 2.3 4	Hydraulic Properties
	7 2 3 5	Groundwater Flow Conditions
7 2.4		Arapahoe Aquifer (No 1 Sandstone)
	7 2 4 1	Groundwater Occurrence and Distribution
	7 2 4 2	Recharge
	7 2 4 3	Discharge
	7 2.4 4	Hydraulic Properties
	7.2 4 5	Groundwater Flow Conditions
7 2 5		Weathered Laramie Sandstones and Claystones
	7 2.5 1	Groundwater Occurrence and Distribution
	7 2 5 2	Recharge
	7 2 5 3	Discharge
	7 2 5 4	Hydraulic Properties
	7 2 5 5	Groundwater Flow Conditions
7 2 6		UHSU System Interactions
7 3		Lower Hydrostratigraphic Unit
	7 3 1	Unweathered Laramie Formation Sandstones and Siltstones
	7 3 1 1	Groundwater Occurrence and Distribution
	7 3 1 2	Recharge
	7 3 1 3	Discharge
	7 3 1 4	Hydraulic Properties
	7 3 1 5	Groundwater Flow Conditions
	7 3 2	Unweathered Claystone
7 4		UHSU/LHSU Interactions
7 5		Surface-water/Groundwater Interactions
7 6		Groundwater Modeling Activities
7 7		Impacts of RFP Operations on the Groundwater Flow System
	7.7 1	Building Foundations, Footing Drains and Impermeable Areas
	7 7 2	Groundwater Recovery Systems
	7.7.2 1	Solar Ponds
	7 7 2 2	881 Hillside French Drain
	7 7 2 3	Land Fill
	7 7 3	Impoundments
	7 7 4	Drainage and Diversion Ditches
8 0		Assessment of Innovative Groundwater Field Methods at the RFP - A Review
9 0		Recommendations for Additional Groundwater Studies
10 0		References
11 0		Glossary
12 0		List of Acronyms
		Tables
		Figures

Appendices

Plates and Maps

Well Construction Specifications

Individual Well Hydrographs

Clustered Well Hydrographs

Stream/Aquifer Hydrographs

Aquifer Test Data

Seep Data