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Hydrogeology • Mineral Resources Waste Management • Geological Engineering • Mine Hydrology

October 1, 1987
Contract No. NRC-02-85-008
Fin No. D-1020
Communication No. 151

Mr. Jeff Pohle
Division of Waste Management
Mail Stop 623-SS
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

RE: Monthly Report--September 1987

Dear Jeff:

This document constitutes the twenty-fourth monthly (September 1-30, 1987) progress report as required by Contract No. NRC-02-85-008. Williams and Associates, Inc. reviewed several documents this month. We are continuing our efforts on the required list of tasks outlined in the SOW. Details about our efforts on this contract are outlined based on Task and Subtask numbers.

We have discontinued our efforts on the topical reports on uncertainty until further instructions are received. References to task number in this letter are derived from our Communication No. 126.

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PDR WMRES EECWILA
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WM Project: WM-10, 11, 16
PDR w/encl
(Return to WM, 623-SS)

WM Record Files D-1020
LPDR w/encl

TASK 1

The following work was conducted under Task 1.

Subtask 1.1

This subtask has been completed.

Subtask 1.2

Williams and Associates, Inc. completed written reviews of the following documents during the month of September:

1. Maldonado, F., Muller, D.C., and Morrison, J.N., date unknown, Preliminary Geologic and Geophysical Data of the UE25A-3 Exploratory Drill Hole, Nevada Test Site, Nevada. U.S. Geological Survey, Denver, CO, USGS-1543-6,
2. Thordarson, William, Rush, F.E., and Waddell, S.J., 1985, Geohydrology of Test Well USW H-3, Yucca Mountain, Nye County, Nevada. U.S. Geological Survey, Water Resources Investigations Report 84-4272, Lakewood, CO.

These reviews were forwarded to the NRC as Communication No. 148.

Subtask 1.3

Williams and Associates, Inc. is continuing to review the literature pertaining to potential conceptual models for NNWSI.

Subtask 1.4

Williams and Associates, Inc. is continuing our informal review of the Draft SCP for NNWSI, plus associated references.

TASK 2

The following work was conducted under Task 2.

Subtask 2.1

This subtask has been completed.

Subtask 2.2

Williams and Associates, Inc. began preparation of a brief report on the two-dimensional cross-sectional model study of the hydraulic gradients indicated by the cluster piezometer sites (DC-19, -20, and -22). This effort has been conducted on a limited basis because of the need to maintain timely responses on higher priority items. The purpose of this effort is to investigate the relationship of vertical hydraulic conductivity to horizontal hydraulic conductivity.

The following document was reviewed this month;

1. Davis, P., Beyeler, W., Logsdon, M., Coleman, N., and Brinster, K., no date, Numerical Modeling of Ground-Water Flow Systems in the Vicinity of the Reference Repository Location, Hanford Site, Washington."

The review was forwarded as Communication No. 149.

Subtask 2.3

Williams and Associates, Inc. is reviewing some new literature pertaining to potential conceptual models for BWIP. We will update our existing conceptual models per requirements in the SOW. The update will be completed in September. Our efforts on the conceptual model update will be used as a starting point for the implementation of Task #6.

Williams and Associates, Inc. is continuing to work on the statistical analysis of off-site and on-site hydrochemical data. The on-site data set from our 1985 report has been retrieved; editing of the on-site data set is continuing. The on-site data set used in the 1985 report has been cross checked with the BWIP chemical data base report (Early, T.O, Mitchell, M.D., and Spice, G.D., May 1986, A Hydrochemical Data Base for the Hanford Site, Washington. SD-BWI-DP-061). Errors in the data base on the computer have been corrected.

Subtask 2.4

The draft chapter 3 of the Site Characterization Plan (SCP) has been received. We are reviewing this draft chapter for our information. Formal comments have not been requested.

TASK 3

The following work was conducted under Task 3.

Subtask 3.1

This subtask has been completed.

Subtask 3.2

Williams and Associates, Inc. has completed initial reviews of most of the documents that describe hydrogeologic testing at the WIPP site. We anticipate receiving additional documents that describe hydrogeologic testing conducted at the WIPP site; these additional documents will be reviewed. Written reviews will not be prepared for each document. A topical report will be prepared that covers the hydrogeologic testing described in all the reports. This work is being conducted under our Task #5.

Williams and Associates, Inc. received a copy of each of the test plans prepared by Papadopoulos and Associates, Inc. These reports are entitled "Hydrogeologic Testing Plan for Shallow Hydro Nest Test Wells, Deaf Smith County Site, Texas," and "Hydrogeologic Testing Plan for Exploratory Shaft Monitoring Wells, Deaf Smith County Site, Texas." Our review of these documents was delayed because of the priority review required on the draft report by Davis et al. noted under Subtask 2.2.

Williams and Associates, Inc. is continuing the review of geophysical logs, core photographs, and related material for the J. Friemel #1 well under our Task #2. The information and documents will be returned to Mr. Ross at the completion of this review.

Subtask 3.3

Williams and Associates, Inc. completed the initial requirement under this subtask with the submission of our conceptual model letter report. We will update our evaluation of existing conceptual models in October.

TASK 4

This task has not been initiated. We are accumulating relevant documents during the course of our other activities under Tasks 1, 2, and 3.

Williams and Associates, Inc.
Vista, Idaho 83872
Contract No. WRC-02-85-008

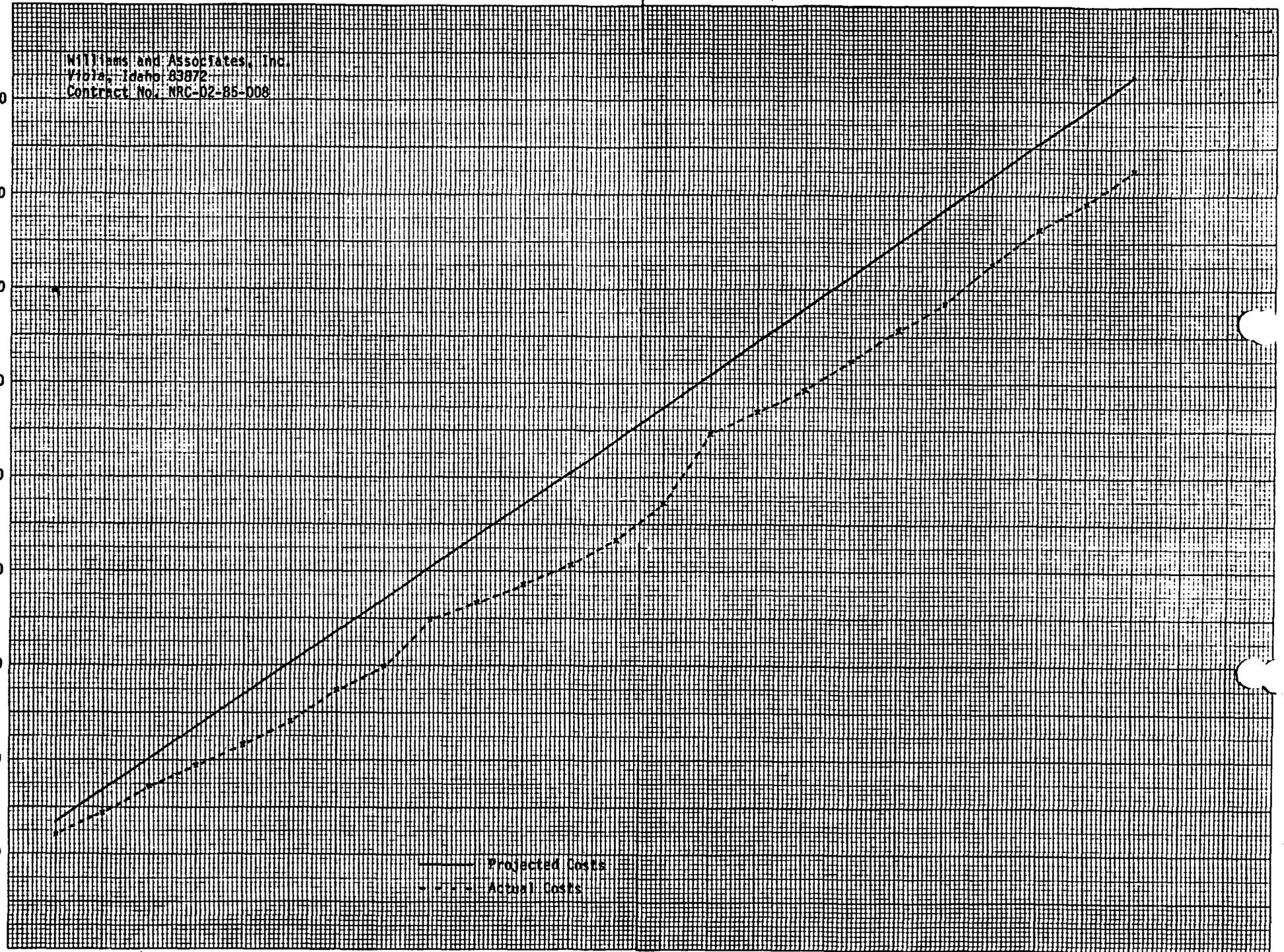
Cost in Dollars x 100

800
700
600
500
400
300
200
100
0

— Projected Costs
- - - Actual Costs

Oct Nov Dec Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec Jan Feb Mar Apr May Jun Jul Aug Sep
1985 1986 1987

20 Squares to the Inch



TASK 5

Williams and Associates, Inc. has suspended work on the Topical Reports on listing, reducing and quantifying uncertainty. We will return to these reports when we have received instructions from the NRC as to final disposition of these topical reports.

Williams and Associates, Inc. has begun Task #3 (described in Communication No. 126) regarding the review of data needs and sources of uncertainty inherent in calculating porosity and effective porosity. We began this task by reviewing the anomalous head differences created during the tracer test conducted in boreholes DC-7/8 at the BWIP site.

Williams and Associates, Inc. has started a review of the procedures available for the determination of vertical and horizontal hydraulic conductivity from field data. This work is being conducted under our Task #4.

Williams and Associates, Inc. continued work on our task entitled "Mathematical Simulation of Unsaturated Flow in Yucca Mountain" during the month of August.

George Bloomsburg attended the "Development of Tuff Performance Assessment Methodology" meeting on September 21 and 22, 1987. The meeting was held at the Technology Transfer Center, Sandia National Laboratories, Albuquerque, New Mexico. The trip report for this meeting will be forwarded to the NRC during the month of October.

Contractual Problems

No contractual problems have arisen.

Current Expenditures

A breakdown of individual hours and charges is shown on the attached table. Cumulative costs and projected costs are shown on the second table. The attached figure illustrates projected and current cumulative costs.

Sincerely,

Roy E. Williams

Roy E. Williams

INDIVIDUAL HOURS AND CHARGES

	This Month (hours)	Cumulative (hours)	Cumulative (amount)
Roy Williams	128	1,968	\$101,340
Gerry Winter	173.3	3,459.2	82,002.58
Jeff Brown	-	358	12,530
Jim Osiensky	173.3	3,013.2	57,745.96
Dale Ralston	8	331	14,922.60
Kirk Steinhorst	7.75	117.75	4,512.63
Terry Eckwright	12	121	1,830
John Sharp	10	127.5	5,209
Charles Smith	-	-	-
George Bloomsburg	34	563	23,054
Terry Howard	-	-	-
Stanley Miller	2	325	11,621.76
Noel Krothe	-	7.6	380
Richard Parizek	0	67.75	3,387.5
Barbara Williams	19	361	7,254.69
John Riley	31	252	4,032
Tom Lachmar	32	36	612
Ken Sprenke	8	8	280

CURRENT AND CUMULATIVE PROJECT COSTS

Task	Current Month	Cumulative to Date		Total to Date
		FY 86	FY 87	
1	\$ 12,634	\$ 92,077	\$131,679	\$223,756
2	9,612	76,862	99,948	176,810
3	5,310	86,177	53,071	139,248
4	-----	-----	-----	-----
5	8,163	51,580	136,535	188,115
Total	35,719			

Percentage billed to total funds allocated = 88%.

WM Record File

D1020

WM Project

10, 11, 16

Docket No. _____

PDR

*LPDR

Distribution:

TPohle

Joan ticket

(Return to WM, 623-SS)

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