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Hydrogeology • Environmental Resources Waste Management • Geological Engineering • Mine Hydrology
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March 5, 1986

Contract No. NRC-02-85-008

Fin No. D-1020

Communication No. 36

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

RE: Monthly Report--February 1986

Dear Jeff:

This document constitutes the fifth monthly (February 1-28, 1986) progress report as required by Contract No. NRC-02-85-008. Williams and Associates, Inc. reviewed several documents this month for the Nevada Test Site, the BWIP site, and for the Palo Duro Basin. These document reviews are in draft and final forms. 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.

WM-RES
WM Record File
D-1020
W & A

WM Project 10, 11, 16

Docket No. _____

PDR

LPDR (B, N, S)

Distribution:

Pohle

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(Return to WM, 623-SS)

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TASK 1

The following work was conducted under Task 1.

Subtask 1.1

This subtask has been completed.

Subtask 1.2

A written review was prepared for the following document:

1. Claassen, H.C. 1983. Sources and Mechanisms of Recharge for Ground Water in the West-Central Amargosa Desert, Nevada - A Geochemical Interpretation. U.S. Geological Survey, Open-File Report 83-542, Denver, 61 p.

Several additional documents were reviewed and revisited under Subtask 1.3 in relation to our evaluation of conceptual models for NNWSI.

Subtask 1.3

Williams and Associates, Inc. has completed a letter report of our evaluation of conceptual models for NNWSI as required by Subtask 1.3. This letter report is being forwarded under separate cover.

TASK 2

The following work was conducted under Task 2.

Subtask 2.1

This subtask has been completed.

Subtask 2.2

We completed our review of the document entitled "HEADCO: A Program for Converting Observed Water Levels and Pressure Measurements to Formation Pressure and Standard Hydraulic Head" by F. Spane, Jr., and R. Mercer. The review was forwarded as Communication #31.

We reviewed the available head data. We reviewed the changes in gradient and direction of groundwater flow at the BWIP site per instructions received from the NRC. We forwarded our comments as Communication #29. We are continuing to look at the variable fluid density approach cited by Rockwell (Luszczynski, 1961).

We initiated our review of "Piezometer Completion Report for Borehole Cluster Sites DC-19, DC-20 and DC-22" by Jackson and others (RHO-BWI-TI-226, 1984). We will complete our review by March 14, 1986.

Subtask 2.3

Williams and Associates, Inc. is continuing our conceptual model evaluation. We are considering the existing concepts regarding groundwater flow at the BWIP site; these concepts are being evaluated based upon the water level data collected in the multi-piezometer clusters (DC-19, DC-20, and DC-22). Our concepts of ground water flow are being revised based on the additional water level data presented during the DOE/NRC consultation meeting held December 1985. The water level perturbations created by pulling the bridge plugs at borehole RRL-14 and by drilling borehole DC-23W provide additional insight into the conceptual model(s) of groundwater flow.

Reference Cited:

Luszczynski, N.J., 1961, Head and Flow of Ground Water of Variable Density: Journal of Geophysical Research, vol. 66, no. 12, pp. 4247-4256.

TASK 3

The following work was conducted under Task 3.

Subtask 3.1

This subtask has been completed.

Subtask 3.2

Several documents were reviewed and forwarded to the NRC. In addition review work has begun on several more documents which should be finished within the next month. The reports reviewed are:

1. Bair, E.S., O'Donnell, T.P., and Picking, L.W. 1985. Hydrogeologic Investigations Based on Drill-Stem Test Data: Palo Duro Basin Area, Texas and New Mexico. Office of Nuclear Waste Isolation, Technical Report, BMI/ONWI-566.
2. Conti, R.D., Herron, M.J., Senger, R.K., and Wirojanagud, P. 1985. Stratigraphy and Influence of Porosity on Ground-Water Flow in the Wolfcamp Brine Aquifer, Palo Duro Basin, Texas Panhandle. Texas Bureau of Economic Geology, Austin, Texas, OF-WTWI-1985-19.
3. Conti, R.D. and Senger, R.K. 1985. Hydrostratigraphy of the Wolfcamp Aquifer, Palo Duro Basin, Texas Panhandle. Texas Bureau of Economic Geology, Austin, Texas, OF-WTWI-1985-38.
4. Dutton, A.R., Fisher, R.S., Richter, B.C., and Smith, D.A. 1985. Hydrologic Testing in the Salt-Dissolution Zone of the Palo Duro Basin, Texas Panhandle. Texas Bureau of Economic Geology, Austin, Texas, OF-WTWI-1985-3.
5. Parizek, R., Mink, L., Domenico, P., and Robertson, J. July 1985. Report of the Panel on Evaluation of Ground-Water Flow in Fractures at the Palo Duro Basin. transmittal letter from J. Tracy to T. Naymik.
6. Senger, R.F. and Fogg, G.E. 1984. Modeling of the Effects of Regional Hydrostratigraphy and Topography on Ground-Water Flow, Palo Duro Basin, Texas. Texas Bureau of Economic Geology, Austin, Texas, OF-WTWI-1984-32.

Subtask 3.3

Consideration of conceptual models and model alternatives is continuing as part of the site familiarization process. Documents specifically relating to the definition of the hydrogeologic framework are being collected as potential source material for review of conceptual models. Refamiliarization with possible conceptual models, as outlined in contract exhibits, is underway also.

TASK 4

(not initiated)

TASK 5

Williams and Associates, Inc. submitted Communication No. 2 (in October) to the NRC requesting further consideration of a proposal initially submitted under the previous contract. This request presents additional information pertaining to the determination of effective porosity from field data. Effective porosity is a parameter required for calculating ground water velocities and travel times. This request is pending further discussions.

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

INDIVIDUAL HOURS AND CHARGES

	This Month (hours)	Cumulative (hours)	Cumulative (amount)
Roy Williams	56	312	\$ 15,600
Gerry Winter	173.3	866.5	16,465.6
Jeff Brown	43	206.5	7,227.5
Jim Osiensky	116	580	11,020
Dale Ralston	5	77	3,388
Kirk Steinhorst	-	-	-
Terry Eckwright	26	60	906
Jack Sharp	6	6	240
Charles Smith	-	-	-
George Bloomsburg	22	84	3,360
Terry Howard	-	-	-
Stanley Miller	14	43	1,505

CURRENT AND CUMULATIVE PROJECT COSTS

Task	Current Month	Cumulative to Date* FY 86	Cumulative to Date* FY 87	Total to Date*
1	\$ 7,429	\$ 34,652	\$-----	\$ 34,652
2	5,727	36,506	-----	36,506
3	8,188	32,407	-----	32,407
4	-----	-----	-----	-----
5	-----	12,157	-----	12,157
Total	21,344			

Percentage billed to total funds allocated. = 29%.

Williams and Associates, Inc.
Viola, Idaho 83872
Contract No. NRC-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
1985 1986

