

WM Record File
102

WM Project 11

Docket No. _____

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September 6, 1984

MEMORANDUM FOR: Robert E. Browning, Director
Division of Waste Management

FROM: Paul T. Prestholt, Sr. OLR - NNWSI

Subject: NNWSI Site Report for Week of August 27, 1984

84 SEP 10 AM 1:51

WM DOCKET CONTROL CENTER

I. The August TPO meeting was held on the 29th and 30th. Of particular interest to the NRC was Dr. Vieth's announcement that the date for release of the EA's for public comment is November 15th. I asked Dr. Vieth if this was a firm date or just another target. He said that this was firm and that he expects it to be met.

Dr. Vieth stated that his sources in Washington report that Ben Rusche was very pleased with his visit to the NNWSI on the 16th and 17th.

Dr. Vieth described the meeting with NRC scheduled for the 31st, and invited the TPO's to attend, if they wished. None did.

The rest of the day was devoted to internal subjects.

II. On the 30th I escorted Maxine Dunkleman, NRC WMRP branch and Joe LaRue, SAI to the NTS. We visited Sedan Crater and area 12, the location of Rainier Mesa and the tunnels. After lunch we visited Yucca Mountain. There has been considerable flood damage to the roads in the Yucca Mountain area. The paved road through 40-mile Canyon was washed out in three places and the road to the top of Yucca Mountain has been washed out in several places. It should be expected that the trenches scheduled to be visited during the geology data review, the week of September 17th, will be in poor shape unless cleaned out.

III. The Issue-Tracking Systems meeting held on the 31st between the NRC WMPC branch and DOE WMPO was very successful. Joe Bunting and Phil Altomare hit just the right tone at the beginning of the meeting and Dr. Vieth and his staff were very responsive.

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The NRC made the point that, in certain cases, issues could be resolved through rule-making. This process was very interesting to the DOE. Dr. Vieth stated that he had been dealing with the NRC since 1978 and that this was the first time he had heard of this.

The possible future presentation to the DOE Projects by the Division and ELD on licensing, and on the hearing process in particular, was discussed. The DOE is very anxious to have this presentation and Joe Bunting promised to look into it.

The success of this meeting indicates that such informal meetings focused on particular topics and involving a relatively few people, may help resolve many of the problems facing the NRC and DOE in licensing a repository. Understandings of position are far more readily achieved through personal inter-action than through the mail or over the telephone.

IV. On the 29th, during the TPD meeting, Dr. Vieth told me that the management meeting scheduled for September 5th had been cancelled with a possible re-scheduling in October. NOW was the optimum time to hold this meeting, and I believe its cancellation is regrettable.

Attachments:

- DOE Weekly Reports for weeks ending August 23, and 30
- Boreholes Drilled and Planned in Support of Evaluating Yucca Mountain



Department of Energy

Nevada Operations Office

P. O. Box 14100

Las Vegas, NV 89114-4100

AUG 27 1984

Richard Blaney, Office of Geologic Repository Deployment, DOE/HQ (RW-22) GTN

BOREHOLES DRILLED AND PLANNED IN SUPPORT OF EVALUATING YUCCA MOUNTAIN

In response to your request for information about the number of boreholes drilled in the evaluation of Yucca Mountain and those remaining to be drilled, we have prepared the following list. The list is broken down into three categories, those already drilled, those currently being drilled, and future drilling activities.

HOLES ALREADY DRILLED

<u>Borehole Designation</u>	<u>Date Completed</u>	<u>Depth Feet</u>	<u>Purpose</u>
USW G-1	09-17-80	6000	Geologic (G) cored holes partially established the stratigraphy of Yucca Mountain
USW GA-1 (angle)	03-21-81	551	
USW G-2	10-24-81	6006	
USW G-3	03-21-82	5031	
USW GU-3	06-12-82	2644	
USW G-4	01-13-83	3003	Principal borehole for exploratory shaft; partially established the geology and hydrology near the ES site
USW H-1	07-06-82 (recompleted)	6006	Hydrologic (H) test holes partially established water transmissivity and gradients
USW H-3	03-19-82	4000	
USW H-4	06-07-82	4000	
USW H-5	08-01-82	4000	
USW H-6	10-28-82	4002	
UE-29a#1H	10-06-81 (abandoned)	215	Test hole provided partial regional hydrologic data in main drainage wash, 6 mile NE
UE-29a#2H	01-20-82	1383	
USW VH-1	02-18-81	2501	Volcanic/Hydrologic (VH) test hole partially bounded volcanic processes and hydraulic transmissivity and gradients in Crater Flat near Yucca Mountain

Richard Blaney

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<u>Borehole Designation</u>	<u>Date Completed</u>	<u>Depth Feet</u>	<u>Purpose</u>	
USW VH-2	04-27-83	4000	This hole partially evaluated volcanic processes only in Crater Flat	
UE-25a#1	09-02-78	2501	Preliminary shallow exploratory boreholes partially established groundwater flow of wash next to Yucca Mountain	
UE-25a#2	(not drilled)			
UE-25a#3	10-10-78	2530		
UE-25a#4	07-3-82 (recompleted)	500		
UE-25a#5	07-12-79	487		
UE-25a#6	08-08-79	500		
UE-25a#7	10-05-80 (recompleted)	1002		
UE-25b#1H	09-22-81	4002	Major hydrology hole provided transmissivity, gradient and water chemistry data	
UE-25h#1	01-30-83	400	Horizontal hole to evaluate dry coring technology	
UE-25p#1H	05-24-83	5923	Major hydrology hole provided data about both Quaternary and pre-Tertiary basement rocks (carbonate) adjacent to Yucca Mountain	
USW WT-1	05-18-83	1689	Water Table (WT) holes partially established the static water level around the entire block of interest	
USW WT-2	07-16-83	2060		
UE-25WT#3	05-25-83	1142		
UE-25WT#4	06-06-83	1580		
UE-25WT#5	06-18-83	1330		(Abandoned; junk in hole at 1026 feet)
UE-25WT#6	06-29-83	1257		
USW WT-7	07-26-83	1610		
USW WT-8	(delayed)		No drilling is being done on AF land	
USW WT-9	(delayed)		until their congressional withdrawal is completed	

4. State and Public Interaction

- o Thursday, September 6: Don Vieth on agenda for Nye County Commissioners' meeting to present status of Project, Tonopah.
- o Wednesday, September 5: Don Vieth presentation to Paradise Valley Kiwanis Club.
- o Thursday, September 13: NTS Tour for Citizens of the Federal Republic of Germany; Don Vieth conducting tour.

5. NRC Interaction

- o Friday, August 31: NNWSI-NRC Information Management and Issues Tracking Systems Meeting, Las Vegas.
- o Two weeks: September 17-28: NRC-DOE-USGS Geology Data Review, Denver, Menlo Park, Las Vegas.



Donald L. Vieth, Director
Waste Management Project Office

WMPO:DLV-1172



Department of Energy

Nevada Operations Office

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AUG 27 1984

J. William Bennett, Acting Dir., Office of Geologic Repositories,
DOE/HQ (RW-20), GTN

NNWSI WEEKLY HIGHLIGHTS FOR WEEK ENDING AUGUST 23, 1984

I. Issues Requiring Involvement of HQ or other Projects

A. New Issues:

None to report.

B. Previously Reported Issues:

<u>Issue</u>	<u>Status</u>	<u>First Report Date</u>
1. Does HQ have a policy regarding state conduct of site specific measurements at proposed repository sites?	Open	July 26, 1984
2. Formal guidance is needed regarding phased repository approach.	Open	August 9, 1984

II. Major Internal Concerns

None to report.

III. Significant Accomplishments (SA)/Information Items (II)

SA's

A preferable site has been identified for siting of repository surface facilities. It is located immediately east of the northern portion of Exile Hill. A three-person evaluation board determined this site on August 3. The second and third choices are sites immediately north and south of the selected area. The preferred site will be adopted as the reference conceptual site for repository conceptual design purposes. Further evaluation will be necessary to assess the subsurface condition.

The ESTP Committee met in Las Vegas on August 16-17 and came to agreement on a revised underground layout and siting of the second exploratory shaft such that the current test plan will not be affected by the activities required to raise-bore the second shaft. The recommendation is to site the second shaft near drill hole G-4.

II's

The drill string got stuck in drill hole UZ-6, but was retrieved using a washover screw and jacks. The recovery effort had to be done under dry conditions so fluids or diesel oil were not utilized. The entire drill string was recovered without compromising the pristine hydrological conditions in the hole.

In response to a memo from HQ on August 22 which requested that NV obtain at least one IBM PCXT computer by September 4, 1984, the hardware is scheduled for delivery to NV on August 24. Per HQ guidance, NV will be awaiting definition of input screens, data element definitions, and documentation which is to be provided by OCRWM on August 27.

Preparations for galley proofs of Chapter 2 of the EA were initiated on August 22. Chapter 4 will go to galley proofs on August 24. The final galley proof for Chapters 2-6 will be completed September 14 and the final camera ready copy will be complete October 12.

William Hanson of the USGAO's Seattle office met with Sandia and LANL NNWSI Project management personnel during the week of August 20. His section will be responsible for quarterly audits that are required by Congress. Evidently, the GAO will require independent information from all contractors on costs and commitments related only to contracts. The emphasis of the meeting at Sandia was to review cost information in order to establish a format for future reporting to GAO. The procedures and routing for this information will have to be established by DOE and GAO.

Henry Melancon, project engineer on the NNWSI Project, is retiring from DOE. His last day will be August 31.

IV. Upcoming Events

1. Coordination Group Meetings

- o Monday-Wednesday, September 10-12: Waste Package Coordination Group Meeting, Rockville.

2. HQ Meetings

- o Monday-Friday, August 20-24: Program-wide EA meeting, GTN.
- o Thursday-Friday, September 6-7: Program-wide SCP Workshop (Chapter 10), Richland.

- o Monday, September 10: MRS Meeting, Richland.
- o Tuesday, September 11: HQ Meeting with States to discuss interaction.
- o Monday-Friday, September 17-21: Meeting to review EA Draft Chapters 2-7, D.C.
- o Monday-Tuesday, September 24-25: Program Senior Managers' Meeting.

3. Internal Project and DOE/NV Meetings

- o Wednesday-Thursday, August 29-30: PM-TPO Meeting, Las Vegas.
- o Thursday, August 30: Workshop on Modeling of Unsaturated Fractured Tuff, DEN.
- o Thursday, August 30: ES Meeting at NTS to discuss impact of FY 1985 budget and the preparation of bid packages on Second Shaft.
- o Thursday-Friday, September 6-7: ESTP Committee Meeting, Las Vegas.
- o Friday, September 14: DOE/NV Management meeting re: NNWSI EA, Las Vegas.
- o Tuesday, September 18: USGS/DOE Cooperative Meeting, Reston.
- o Tuesday-Thursday, September 18-20: Joint Design Review, San Francisco.
- o Wednesday-Thursday, September 19-20: LANL/LLNL Geochemistry Interaction Meeting (Tentative).
- o Thursday, September 20: NNWSI QAC Meeting, Las Vegas.
- o Thursday-Friday, September 27-28: PM-TPO Meeting, Las Vegas.

4. State and Public Interaction

- o Tuesday, September 4: Don Vieth on agenda for Nye County Commissioners' meeting to present status of Project, Tonopah.
- o Wednesday, September 5: Don Vieth presentation to Paradise Valley Kiwanis Club.
- o Thursday, September 13: NTS Tour for Citizens of the Federal Republic of Germany; Don Vieth conducting tour.

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5. NRC Interaction

- o Friday, August 31: NNWSI-NRC Information Management and Issues Tracking Systems Meeting, Las Vegas.
- o Wednesday-Thursday, September 5-6: NRC/WMPO Management Meeting to discuss workshop schedules and NRC/NNWSI interaction, Las Vegas.
- o Two weeks: September 17-28: NRC-DOE-USGS Geology Data Review, Denver, Menlo Park, Las Vegas.



Donald L. Vieth, Director
Waste Management Project Office

WMPO:DLV-1150

cc:

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SEP 4 1984

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DOE/HQ (RW-20), GTN

NNWSI WEEKLY HIGHLIGHTS FOR WEEK ENDING AUGUST 30, 1984

I. Issues Requiring Involvement of HQ or other Projects

A. New Issues:

Software for IBM PCXT was not received on August 27 as promised by DOE/HQ. There will be a day-to-day slip in getting the Budget Formulation and Execution System up and running.

B. Previously Reported Issues:

Issue	Status	First Report Date
1. Does HQ have a policy regarding state conduct of site specific measurements at proposed repository sites?	Open	July 26, 1984
2. Formal guidance is needed regarding phased repository approach.	Open	August 9, 1984

II. Major Internal Concerns

None to report.

III. Significant Accomplishments (SA)/Information Items (II)

None to report.

II's

Tony Hakl, the TPO from Westinghouse (E-MAD), is leaving the NNWSI Project to go to the Waste Technology Services Division in Pittsburgh. He is being replaced by Jim Wright, who will be the new Westinghouse TPO.

IV. Upcoming Events

1. Coordination Group Meetings

- o Tuesday-Thursday, September 11-13: Waste Package Coordination Group Meeting, Rockville.

2. HQ Meetings

- o Thursday-Friday, September 6-7: Program-wide SCP Workshop (Chapter 10), Richland.
- o Monday, September 10: MRS Meeting, Richland.
- o Tuesday, September 11: HQ Meeting with States to discuss interaction.
- o Friday, September 14: Materials Steering Committee Meeting, GTN.
- o Monday-Friday, September 17-21: Meeting to review EA Draft Chapters 2-7, D.C.
- o Tuesday-Wednesday, September 18-19: Performance of Borosilicate Glass HLW Forms in Disposal Systems Workshop, GTN.
- o Thursday, September 20: Generic Waste Acceptance Criteria Workshop, GTN.
- o Monday-Tuesday, September 24-25: Program Senior Managers' Meeting.

3. Internal Project and DOE/NV Meetings

- o Thursday-Friday, September 6-7: ESTP Committee Meeting, Las Vegas.
- o Friday, September 14: DOE/NV Management meeting re: NNWSI EA, Las Vegas.
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- o Thursday, September 20: NNWSI QAC Meeting, Las Vegas.
- o Thursday-Friday, September 27-28: PM-TPO Meeting, Las Vegas.

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<u>Borehole Designation</u>	<u>Date Completed</u>	<u>Depth Feet</u>	<u>Purpose</u>
USW WT-10	08-02-83	1413	
USW WT-11	08-09-83	1446	
UE-25WT#12	08-16-83	1308	
UE-25WT#13	07-07-83	1160	
UE-25WT#14	9-30-83	1310	
UE-25WT#15	11-22-83	1360	
UE-25WT#16	11-10-83	1710	
UE-25WT#17	10-30-83	1453	
UE-25WT#18	05-09-84	2043	
U-25 Seismic #1 thru #19	09-11-81	200	Explosive emplacement holes for seismic reflection survey
#2 thru #24	05-03-84	145	Explosive emplacement holes for seismic refraction survey
USW UZ-1	10-24-83	1057	Test hole is providing data above flow in the unsaturated zone
UE-25c#1H	10-17-83	3000	A three-hole series for measuring water flow rates
UE-25c#2H	03-31-84	3000	
UE-25c#3H	06-11-84	3000	
US-25 #1 thru #21	9-26-83	50	Explosive emplacement holes for seismic refraction survey
<u>HOLES BEING DRILLED</u>			
USW UZ-6		2400	Test hole to provide data about flow in the unsaturated zone
U-5 #1	4-13-84	140	Explosive emplacement holes for seismic refraction survey
U-5 #2	4-16-84	140	
U-26 #1	4-18-84	140	
U-29 #1	5-7-84	142	
U-30 #1	5-9-84	142	
U-30 #2	5-10-84	140	
UE-25 UZN #2-9,12-14,18,20	7-24-84	50	Holes in the unsaturated zone for neutron logging for moisture data
#2-9, 12-14, 18, 20 USW UZ-N68 69, 71, 76, 93	7-27-84	50	

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FUTURE DRILLING ACTIVITIES (TENTATIVE)

USW UZ-2,3,4,5

Test holes will measure flow in the unsaturated zone

USW WT-8
USW WT-9

Water Table (WT) holes will measure static water level.

Borehole Designation

Purpose

As many as 75 shallow neutron holes

Neutron holes will be logged to locate perched water

An unidentified number of seismic holes

Seismic holes for explosive emplacement for seismic refraction survey

G-5 thru G-8

Geologic Boreholes will further establish the site's stratigraphy

The number of boreholes may appear large by comparison with the salt sites but they are required due to the complexity of the site; it is not simple layercake geology. The exploratory drilling effort has been devoted to the following general concepts:

1. To develop an understanding about volcanic processes near Yucca Mountain.
2. To establish the geologic structure and stratigraphy of the site.
3. To establish the hydrologic parameters of the saturated zone underneath the site.
4. To establish the hydrologic parameters of the unsaturated zone at the site.
5. To establish the gradient of the water table as a basis for specifying the flow path between the repository and the accessible environment.

If these drilling activities had not been conducted, then we would not have adequate technical data and analyses about Yucca Mountain to prepare the positions for the draft NNWSI-EA that are called for in DOE's 10CFR960 (i.e. disqualifying, favorable, potentially adverse, and qualifying condition).

AUG 27 1984

The future drilling activities focus on geology and hydrology and are designed to:

1. Develop a conceptual geo-hydrologic model to calculate reliable groundwater travel times.
2. Measure the geo-hydrologic characteristics in the saturated and unsaturated zones.

These future drilling activities are not all inclusive since we do not yet know what will be required to fully characterize the geology and hydrology of the saturated and unsaturated zones beneath Yucca Mountain. Future plans will be influenced by interactions with the Nuclear Regulatory Commission and the State of Nevada.

It is somewhat difficult to estimate accurately the cost of drilling because unusual problems which may occur are unpredictable. In a general sense, and based upon past cost experience, the following cost estimates are provided:

a. Geology holes like G-Series	\$1,300,000
b. Hydrology holes like H-Series	2,100,000
c. Water table location holes like WT-Series	250,000
d. Fully instrumented unsaturated zone holes like UZ-6	3,000,000
e. Shallow holes for seismic research and neutron logging like US-Series and UZN-Series	5,000

If you have any questions call Ralph Richards, FTS 575-1124.


Donald L. Vieth, Director
Waste Management Project Office

WMPO:RHR-1122

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