



Department of Energy
Office of Civilian Radioactive Waste Management
Yucca Mountain Site Characterization Office
P.O. Box 30307
North Las Vegas, NV 89036-0307

QA: N/A

AUG 28 2001

OVERNIGHT MAIL

N. King Stablein
High Level Waste & Uranium Recovery
Division of Waste Management
Office of Nuclear Material Safety & Safeguards
U.S. Nuclear Regulatory Commission
Two White Flint North
Rockville, MD 20852

SUBMITTAL OF PARTICIPANTS' MONTHLY PROGRESS REPORT

As you have requested, the U.S. Nuclear Regulatory Commission is on distribution to receive a copy of the Yucca Mountain Site Characterization Project participants' monthly status report on a regular basis. Enclosed is the U.S. Geological Survey Progress Report for July 2001.

If you have any questions, please contact Bertha M. Terrell at (702) 794-1348.

A handwritten signature in black ink, which appears to read "Stephan Brocoum", is positioned above the printed name.

Stephan Brocoum
Assistant Manager, Office of
Licensing and Regulatory Compliance

OL&RC:BMT-1670

Enclosure:
Ltr, 8/13/01, Craig to Trebules, w/encl

*Wm H
NMS07*

AUG 28 2001

cc w/o encl:

J. R. Curtiss, Winston & Strawn, Washington, DC
M. A. Lugo, BSC, Las Vegas, NV

cc w/encl:

L. H. Barrett, DOE/HQ (RW-1) FORS
Richard Major, ACNW, Rockville, MD
B. J. Garrick, ACNW, Rockville, MD
W. D. Barnard, NWTRB, Arlington, VA
J. H. Kessler, EPRI, Palo Alto, CA
Steve Kraft, NEI, Washington, DC
R. R. Loux, State of Nevada, Carson City, NV
John Meder, State of Nevada, Carson City, NV
Alan Kalt, Churchill County, Fallon, NV
Irene Navis, Clark County, Las Vegas, NV
Harriet Ealey, Esmeralda County, Goldfield, NV
Leonard Fiorenzi, Eureka County, Eureka, NV
Andrew Remus, Inyo County, Independence, CA
Michael King, Inyo County, Edmonds, WA
Mickey Yarbrow, Lander County, Battle Mountain, NV
Jason Pitts, Lincoln County, Caliente, NV
Judy Shankle, Mineral County, Hawthorne, NV
L. W. Bradshaw, Nye County, Pahrump, NV
Geneva Hollis, Nye County, Tonopah, NV
Josie Larson, White Pine County, Ely, NV
R. I. Holden, National Congress of American
Indians, Washington, DC
Allen Ambler, Nevada Indian Environmental
Coalition, Fallon, NV
J. H. Smyder, NSNFP, Las Vegas, NV
S. J. Cereghino, BSC, Las Vegas, NV
N. H. Williams, BSC, Las Vegas, NV
R. J. Henning, BSC, Las Vegas, NV
R. F. Wemheuer, BSC, Las Vegas, NV
G. W. Hellstrom, DOE/YMSCO, NV
B. M. Terrell, DOE/YMSCO, Las Vegas, NV
A. V. Gil, DOE/YMSCO, Las Vegas, NV
OL&RC Library
Records Processing Center =



United States Department of the Interior

U. S. GEOLOGICAL SURVEY

Box 25046 M.S. 421

Denver Federal Center
Denver, Colorado 80225

IN REPLY REFER TO:

INFORMATION ONLY

August 13, 2001

Victor W. Trebules
Director, Office of Project Control
Yucca Mountain Site Characterization
Project Office
U. S. Department of Energy
P.O. Box 30307
Las Vegas, Nevada 89036-0307

SUBJECT: Yucca Mountain Project Branch - U.S. Geological Survey (YMPB-USGS)
Progress Report, July, 2001

Attached is the USGS progress report in the required format for the month of July, 2001.

If you have any questions or need further information, please call Raye Ritchey Arnold at (303)236-5050, ext 296.

Sincerely,

Raye Ritchey Arnold

For Robert W. Craig
Technical Project Officer
Yucca Mountain Project Branch
U.S. Geological Survey

Enclosure:

cc: J. Bresee, DOE/OCRWM-HQ/Forrestal
S. Hanauer, DOE/Forrestal
R. Dyer, DOE, Las Vegas
D. Barr, DOE, Las Vegas
A. Gil, DOE, Las Vegas
T. Gunter, DOE, Las Vegas
W. Kozai, DOE, Las Vegas

ENCLOSURE

S. Morris, DOE, Las Vegas
R. Patterson, DOE, Las Vegas
R. Spence, DOE, Las Vegas
T. Sullivan, DOE, Las Vegas
M. Tynan, DOE, Las Vegas
D. Williams, DOE, Las Vegas
C. Glenn, NRC, Las Vegas (2 copies)
G. Bodvarsson, M&O/LBNL
R. Henning, M&O/Las Vegas
R. Wemheuer, M&O/Las Vegas
W. Alley, USGS, Reston
D. Duncan, USGS, Reston
R. Craig, USGS, Las Vegas
R. Arnold, USGS, Denver
M. Chornack, USGS, Denver
W. Dudley, USGS, Denver
D. Gillies, USGS, Denver
D. Hoxie, USGS, Las Vegas
C. Hunter, USGS, Denver
R. Keefer, USGS, Denver
B. Parks, USGS, Denver
Z. Peterman, USGS, Denver
W. Scott, USGS, Las Vegas
J. Stuckless, USGS, Denver
A. Whiteside, SAIC, Denver

U.S. GEOLOGICAL SURVEY EXECUTIVE SUMMARY

July 2001

GEOLOGY

Geological work in support of the Nye County early warning drilling program continued, with three new hydrostratigraphic cross sections completed and in preparation for technical review. In related work, a data package titled "Interpretations of Deep Boreholes, Nye County Early Warning Drilling Program, Phase II" was compiled and submitted for technical review.

The Underground Mapping team continued a variety of efforts, including on-going mapping of Busted Butte mine-back faces as those were excavated. Digitization of field maps also continued. Field work and data collection continued on the supplemental surface-fracture study, and reduction of collected field data began. Development of the 3-D fracture network for Alcove #8/Niche #3 depiction continued. That depiction was submitted to the USGS TPO on August 1 in completion of Level 5 **milestone SPW151M5 [Memo to TPO: Submittal of 3-D Fracture Depiction]**. Work continued on finalization of technical review and check of field work for submittal of geotechnical data from Waste Handling Building (WHB) studies. Laboratory tests on WHB samples are complete. Analyses of those data continued, as did preparations for TDMS submittal.

ENGINEERED BARRIER SYSTEM

Major, minor, and trace element analyses (performed on samples of ESF dust material) have been synthesized into appropriate tables for development of an interpretative report to the EBS team. Rare-earth element (REE) analyses of cross-drift tuff samples were acquired from the USGS Crustal Imaging and Characterization Team to serve as a basis of comparison with those dust samples. REE patterns differ significantly between the crystal-poor rhyolites and the crystal-rich trachytes; hence, the REE patterns for the dust can be used to estimate the relative abundance of those source rocks in the ESF dust load. Sources of the dust, with particular reference to elements that are enriched significantly over rock values, are being evaluated through the construction of spider diagrams in which the dust values are ratioed to the average values for the crystal-poor rhyolite.

SATURATED-ZONE STUDIES

In work related to development of the hydrogeologic framework model (HFM) and the associated AMR, three new geologic cross sections were completed (and review began) for on-going additions to information for the Nye County early warning drilling program. Preparations were initiated for incorporation of those sections into the revised HFM.

Staff from the USGS continued modifications to the draft of the water-level AMR. Work on DIRS and QA-, software-, and data-related issues also continued. The AMR was submitted for initial check. Comments from one checker have been received, and revisions have been discussed informally. USGS approval for the potentiometric-surface map was received on July 10.

Several efforts related to the Alluvial Testing Complex (ATC) continued during July. Inadvertent omission of subroutines from earlier submission of hydraulic data-acquisition software was corrected, and arrangements are in place for installation and execution tests of the software at the ATC pad of well NC-EWDP-19D1, where data from pressure transmitters and flow meters can test the routines appropriately. ParoScientific transducers used during testing at borehole NC-EWDP-19D1 previously were sent for calibrations; those closing calibrations were received. [Westbay pressure transducers used to monitor wells NC-EWDP-15P, -19P, -4PA, -4PB, and Washburn 1-x are expected to be sent to Westbay in August for closing calibrations.]

Work continued on several aspects of the compilation of data spreadsheets for the ATC single-hole hydraulic testing. An attempt will be made to include the observation-well data (collected at wells NC-EWDP-15P, NC-EWDP-19P, NC-EWDP-4PA and -4PB, and Washburn 1-x with the Westbay transducers) in the data package in addition to the main data collected at pumped well NC-EWDP-19D1 by the ParoScientific transducers. Although the ATC tracer-concentration data package is the responsibility of UNLV (Harry Reid Center), flow rates and pressures recorded during ATC single-well tracer testing (December 2000—April 2001) will be submitted by the USGS. Those tracer-test data are being combined for submittal with hydraulic testing data for ATC single-well testing from July through November 2000 originally intended for separate submittal.

Drilling of IM1 and IM2 wells for cross-hole hydraulic and tracer testing did commence in July under Nye County direction. Reverse-circulation pilot drilling was completed in July. Tests are not scheduled to begin until October 2001; instrumentation design and procurement are underway, with the USGS carrying responsibility for well IM2.

Work continued on compilation and completion of data packages in support of the SZ in-situ testing AMR. Technical checking, record supersession, and transmittals were accomplished on various packages. A data package titled "Transducer, Barometric Pressure, and Discharge Data Collected from 4/18/98 through 11/24/98 in Support of the On-going Hydraulic and Tracer Testing Being Conducted at the UE-25 C-Well Complex, Nevada" was submitted in completion of Level 5 **milestone SPH345CM5 [Closing Calibration Data to TDB/RPC]**. Support to development of that AMR also was provided by selection of technical editors to abstract text from existing USGS manuscripts to describe hydraulic and conservative-tracer testing at the C-holes complex; those abstraction efforts are underway, as are additions (updates) to software reports concerning routines used for analysis of hydraulic tests at the C-holes complex and at the ATC.

Transition of the water-level monitoring effort to UNLV continued during the period. Documentation of the closing calibration for the powered electric tape (PET-1) was completed. Work continued on transducer calibrations. A data package containing water-level data collected from January through July 2001 was submitted for technical review and checking. In preparation for a USGS open-file report on water levels measured in 2000—2001, hydrographs of manual measurements made from January 2000 to June 2001 were drafted, as were precision results from individual boreholes and mean annual borehole water-level hydrographs for the years 1985—2001. The report describing water-level data for calendar year 1999 is undergoing editorial review after revision in response to colleague-review comments.

Work on SZ regional modeling continued during the period, with efforts in data-base improvements, construction of flow models, and on-going refinements to modeling of flow. Two Level 5 milestones related to regional-modeling data bases were completed in July, including **milestone SPH672M5 [Update on Regional Data-base Integration and Analysis]** and **milestone SPH676M5 [Year-End Update on Regional Spatial Data Merge]**. Both milestones support the Death Valley regional flow system (DVRFS) model and describe enhancement of the ground-water information system (and retrieval and conversion of GWSI material to the DVRFS data base). Flexibility of the application was improved, as was access to California District data, and requirements for computer support were reduced. Lithologic and hydrostratigraphic data have been compiled for some 1,519 boreholes in the Death Valley region. The second milestone noted above described progress in integrating point-oriented data with spatial GIS data. Release of new software (ArcGIS, v. 8.1) allows external storage of GIS data in a relational data base. Preliminary work has begun on preparation of GIS coverages for distribution to Project investigators over the Internet. Review and updating of lithologic data for input into the NWIS data base continued.

Development of facies maps of specific hydrogeologic units continued, and additional work was performed on cross sections to be used in construction of the hydrogeologic framework model (HFM) for the transient flow model. Appropriate correlations were made between units depicted on older cross sections and the hydrogeologic units which will be used in the transient model. Processing of existing 3-D models (IT Corporation Oasis Valley model; USGS Silent Canyon Caldera Complex model; IT Corporation revised regional model, which included more detailed units in the Frenchman Flat area; and the YMP site model, GFM 3.1) continued for extraction of data sets which may contribute to the transient HFM or which may be compared to that model. Additional data sets (such as mapped outcrop, wells, and thrust faults and related unit extents which delineate extent of thrust units) were processed for inclusion into the transient HFM. Work also continued on documentation of the steady-state HFM, with a related report nearing completion. The last four technical reviews for that calibrated steady-state flow-modeling report were received in July, and staff members are resolving technical comments.

Work continued on several draft manuscripts intended as USGS open-file reports, including *Facies analysis of Late Proterozoic through early Cambrian clastic rocks of*

the Death Valley regional ground-water system and surrounding areas, Nevada and California, by D. Sweetkind and D. White; *Facies analysis of Tertiary basin-filling rocks of the Death Valley regional ground-water system and surrounding areas, Nevada and California*, by D. Sweetkind, E. Taylor, and R. Drake, II; and *Hydrogeologic facies maps of six Tertiary volcanic units in the southwestern Nevada volcanic field, Nevada and California*, by R. Drake, II, and D. Sweetkind. In addition, an MF-series (miscellaneous field investigation) map at a scale of 1:350,000 has been submitted for processing and approval. That work is titled *Hydrostructural map of the Death Valley ground-water basin, Nevada and California* and is authored by C. Potter, D. Sweetkind, R. Dickerson, and M. Killgore.

UNSATURATED-ZONE STUDIES

The USGS continued to monitor pressure, temperature, and water potential in surface-based boreholes at stations located in boreholes UE-25 UZ #4, UE-25 UZ #5, and USW NRG-7a. At the request of the NRC, the shutdown of UZ Borehole Monitoring has been postponed until the NRC has reviewed the data and reached agreement that the program should be halted. Scientists from the USGS are preparing an Appendix 7 presentation for the NRC to help with that decision. The presentation will cover water-potential, temperature, and pressure data from monitoring conducted from 1995 to the present in surface-based boreholes at Yucca Mountain. The USGS began compiling listings of equipment to be shut down and began preparing the Area 25 Hydrologic Research Facility calibration laboratory to complete necessary closing calibrations.

Isotopic and chemical investigations continued in support of the Drift-Scale Test in the ESF. Data from dissolved-ion and isotopic analyses have been compiled into a data package and checked. Preparation of that data package for submittal began. Staff from the USGS reviewed a LLNL technical procedure for water sampling and forwarded resulting comments. Observations made during the June water-sampling trip were compiled, with emphasis on suggestions for possible changes in procedure that could enhance the water-collection effort. A water-extraction experiment was conducted on core sample ECRB-SYBT-H#3 41.85-42.1 obtained from the site of the Cross-Drift Thermal Test. No water could be extracted by centrifugation, however, and the moisture content was estimated to be about 3.1%. Remaining core samples from the Cross-Drift Thermal Test area will be measured for moisture content in on-going analytical activity. Other on-going activity involved compilation of additional data packages, including assembling and checking of strontium data and compilation of uranium data collected on Drift-Scale Test water samples.

At a meeting convened on July 18 by the DOE, the status and path forward for the chlorine-36 (^{36}Cl) validation project was reviewed. Attending that meeting were representatives from the DOE, USGS, BSC, and LBNL. (LLNL and LANL attended by phone.) The agreed-upon path forward follows:

- a) SMF will provide crushed (1/4-inch size) samples from remaining validation core to USGS.

- b) USGS will leach samples by passive technique for 1 hour (filtered w/ 0.45 filter paper, to be confirmed by LLNL). Note that this step requires revision of existing USGS procedure.
- c) USGS will provide leachate to both LLNL and LANL. Under additional consideration is the possibility of USGS doing separate ^{36}Cl chemistry to generate a third AgCl split from each sample.
- d) LLNL and LANL then perform ^{36}Cl chemistry.
- e) LLNL and LANL measure Cl, Br, SO_4 (by ion chromatograph [IC]) and ^{36}Cl (by accelerator mass spectrometry [AMS]). (LLNL analyses will be performed at the Livermore Center for Accelerator Mass Spectrometry [CAMS]; LANL analyses will be conducted at Purdue).
- f) LLNL & LANL exchange AgCl samples to repeat analyses at respective AMS facilities.
- g) Evaluate results.

The USGS has identified 12 priority core samples to be crushed by the SMF. A technical procedure has been written and is under review. Equipment for the passive leaching is being acquired so that leaching can commence as soon as crushed samples are received from the SMF.

Other elements of isotopic/geochemical work also continued. Compilation of isotopic data for validation of surficial carbonate sources was completed. Preparation of the related data package continued. Several data packages in support of investigation of fluid inclusions in calcite and opal neared completion. A package presenting geochronology and fluid-inclusion data was nearly ready for checker review. A package containing fluid-inclusion temperature data is complete, has been through checker review, and is nearly ready for submittal to the TDB/RPC. Compilation of Sr isotope data and preparation of the surrogate-data package began during the reporting period.

WATER-RESOURCES MONITORING

Ground-water levels were measured at 33 sites, and ground-water discharge was measured at one flowing well. Ground-water data collected during June were checked and filed. Compilation of historical ground-water levels, spring-flow discharges, precipitation, and water-use data from the study area continued. Data on ground-water levels and discharges collected from monitoring sites from April through June 2001 were reviewed. A letter report describing those third-quarter data was prepared and submitted to DOE and to the M&O on July 25 in completion of Level 5 **milestone SSW703M5 [Letter Update: 3rd Quarter FY2001 Water-Level Data]**. In unscheduled work, staff assisted in measurement of flow rates at water wells J-12, J-13 and Army 1 using an ultrasonic flow meter to compare flow rates measured with the in-line flow meters on the wells. The flow meters are used to measure total withdrawals from those wells.

USGS Milestone Report
October 1, 2000 - July 31, 2001
Sorted by Baseline Date

Level: 3

Deliverable		Due Date	Expected Date	Completed Date
SSH015M3	Occupational Training Needs Assessment	6/29/01	6/12/01	6/12/01
SSH014M3	Annual Training Plan	6/29/01	6/12/01	6/12/01

USGS Milestone Report
October 1, 2000 - July 31, 2001
Sorted by Baseline Date

Level: 5

Deliverable	Due Date	Expected Date	Completed Date
SPH956CM5 Fluid Inclusion Data to RPC/TDB	3/30/01	9/14/01	
SPH689M5 Progress HFM Update - Litho/Struct	3/30/01	3/29/01	3/29/01
SPH856CM5 Document Missing Closing Calibrations	3/30/01	9/28/01	
SPH45BCM5 Uranium/Strontium Anlys Data Pkg to RPC/TDB	3/30/01	9/28/01	
SPH48CM5 Dissolved Ion/Iso Anlys Data Pkg to RPC/TDB	3/30/01	9/28/01	
SPH854CM5 Cross Over Infiltration DP to RPC/TDB	3/30/01	9/28/01	
SPH715M5 Steady-State Model Report to Review	3/30/01	4/26/01	4/26/01
SPI024CM5 Strat Workbook: 3rd Qtr Data Submittal	3/30/01	9/28/01	
SPH747CM5 Document Missing Closing Calibrations	3/30/01	9/28/01	
SPH872CM5 Alcove 1 DP to RPC/TDB	3/30/01	9/28/01	
SPH398CM5 Report: WL Data for Calendar Year 1999	3/30/01	8/31/01	
SPH291CM5 Diss Ion & Iso Anlys of Perched Wtr to RPC/TDB	3/30/01	3/30/01	3/30/01
SPH394CM5 Water-Level Data 2nd Qtr FY00 DP to RPC/TDB	3/30/01	3/9/01	3/9/01
SPH396CM5 Water-Level Data 3rd Qtr FY00 DP to RPC/TDB	3/30/01	3/9/01	3/9/01
SPH459CM5 Document Missing Closing Calibrations	3/30/01	9/28/01	
SPI022CM5 Strat Workbook: 2nd Qtr Data Submittal	3/30/01	9/28/01	
SPM311M5 ATC Hydraulic Testing Data to TDB/RPC	3/30/01	9/28/01	
SPI026CM5 Strat Workbook: 4th Qtr Data Submittal	3/30/01	9/28/01	
SPH477CM5 Descript & DP: Dissolved Ion & Isotopic Anal	3/30/01	3/30/01	3/30/01

USGS Milestone Report
October 1, 2000 - July 31, 2001
Sorted by Baseline Date

Level: 5

Deliverable	Due Date	Expected Date	Completed Date
SPH737CM5 Moisture Monitoring DP to RPC/TDB	3/30/01	9/28/01	
SPH457CM5 EBS DP to TDB/RPC	3/30/01	9/28/01	
SPH490CM5 Alluvium Tstg Complex Results DP to RPC/TDB	3/30/01	9/28/01	
SPH876CM5 Document Missing Closing Calibrations	3/30/01	9/28/01	
SPH3491CM5 RPC/TDB: SD-6 Pumping/Monitoring Data Pkg	4/2/01	3/21/01	3/21/01
SPM403M5 Status of Water-Level AMR, Rev 1	4/11/01	4/2/01	4/2/01
SPM341M5 Phase 2 Borehole Lithologies to TDB/RPC	4/16/01	8/6/01	
SSH617CM5 Document Missing Closing Calibrations	4/26/01	9/28/01	
SSH615CM5 Tipping Bucket Monitoring Data to RPC/TDB	4/26/01	9/28/01	
SPM509M5 Status of HFM Update	4/27/01	4/19/01	4/19/01
SSW702M5 Letter Update: 2nd Qtr FY01	4/30/01	4/30/01	4/30/01
SPH345CM5 Closing Calibration Data to TDB/RPC	4/30/01	7/10/01	7/10/01
SPH965CM5 Submit Borehole Logs	4/30/01	9/28/01	
SPH970CM5 Submit Ring Density TDIF	5/30/01	9/4/01	
SPW393BM5 Continuous WL Data Aug 00-Mar 01 to TDB/RPC	5/31/01	8/31/01	
SPH703M5 Transient Target Heads Progress Report	5/31/01	5/23/01	5/23/01
SPW393AM5 Manual WL Data Jul-Dec 00 to TDB/RPC	5/31/01	8/31/01	
SPH717M5 Steady-State Mdl Rpt for USGS Director's Appr	6/29/01	9/28/01	
SPH684M5 Progress HFM Update - Transient Model	6/29/01	6/28/01	6/28/01

USGS Milestone Report
October 1, 2000 - July 31, 2001
Sorted by Baseline Date

Level: 5

Deliverable	Due Date	Expected Date	Completed Date
SPW396M5 Status of Transition Memo to TPO	6/29/01	6/27/01	6/27/01
SPH672M5 Year End Update Reg DB Integ and Anlys	7/13/01	7/2/01	7/2/01
SPH676M5 Year End Update on Reg Spatial Data Merge	7/13/01	7/2/01	7/2/01
SPZ524M5 C-, O-, Sr- Isotopic Data to TDB/RPC	7/16/01	8/14/01	
SPH493CM5 Busted Butte Hydro Data to RPC/TDB	7/25/01	8/31/01	
SPH494CM5 Document Missing Closing Calibrations	7/25/01	4/18/01	4/18/01
SPM510M5 HFM Revision to F&T Model	7/30/01	7/30/01	7/30/01
SPM505M5 Status of Geologic X-Sections Memorandum	7/31/01	8/3/01	
SSW703M5 Letter Update: 3rd Qtr FY01	7/31/01	7/25/01	7/25/01

YMP PLANNING AND CONTROL SYSTEM (PACS)

MONTHLY COST/FTE REPORT

Participant U.S. Geological Survey
Date Prepared: 8/9/01 11:14 AM

Fiscal Month/Year July 31, 2001
Page 1 of 1

<u>CURRENT MONTH END</u>							<u>FISCAL YEAR</u>		
WBS ELEMENT	ACTUAL COSTS	PARTICIPANT HOURS	SUBCONTRACT HOURS	PURCHASE COMMITMENTS	SUBCONTRACT COMMITMENTS	ACCRUED COSTS	APPROVED BUDGET	APPROVED FUNDS	CUMMULATIVE COSTS
1.2.21.1.0	0	0	0	0	0	0	40	0	0
1.2.21.2.1	2	0	0	0	0	0	25	0	13
1.2.21.2.2	19	256	0	0	0	0	74	0	21
1.2.21.3.2	0	0	0	0	0	0	155	0	0
1.2.21.3.D	11	176	0	0	0	0	77	0	11
1.2.21.3.S	0	0	0	0	0	0	75	0	0
1.2.21.3.U	0	0	0	0	157	0	478	0	3
1.2.21.5.2	72	-10	0	0	0	0	598	0	487
1.2.21.5.3	150	1270	2131	0	183	0	1480	0	1733
1.2.21.5.4	167	2396	382	0	31	0	1600	0	1687
1.2.21.5.T	44	317	480	0	46	0	634	0	422
1.2.21.6.1	211	1253	727	0	91	0	2068	0	1386
1.2.22.4.6	55	514	275	0	52	0	533	0	464
1.2.22.4.E	21	111	72	0	29	0	212	0	89
1.2.22.4.S	350	2100	98	0	136	0	2261	0	1395
1.2.22.4.U	214	1311	1024	0	0	0	2454	0	1742
1.2.22.6.T	0	0	0	0	0	0	350	0	333
1.2.22.8.0	6	119	0	0	0	0	50	0	34
	1322	9813	5189	0	725	0	13164	0	9820

U.S. GEOLOGICAL SURVEY

ESTIMATED COSTS FOR October 1, 1999 - July 31, 2001

8/7/01 8:40:06 AM

	OCT EST	NOV EST	DEC EST	JAN EST	FEB EST	MAR EST	APR EST	MAY EST	JUN EST	JUL EST	AUG EST	SEP EST	TOTAL
4889-10716 Support to Chief Science Organization	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00
81912110U1 Support to Chief Science Organizatio	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00
2018 Basis for Recommendation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00
1.2.21.1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00
1.2.21.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00
4889-21211 Science Support to Vol. 1 SR (LOE)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11.2	0.0	1.8	0.0	0.0	12.96
81912121U1 Science Support to Volume 1 - SR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11.2	0.0	1.8	0.0	0.0	12.96
2016 Site Recommendation Rprt Vol. 1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11.2	0.0	1.8	0.0	0.0	12.96
1.2.21.2.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11.2	0.0	1.8	0.0	0.0	12.96
4889-21225 Qualitative Natural Analog Study UZ Move	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.9	19.1	0.0	0.0	20.97
81912122U1 Geology and Natural Analogs Liaison	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.9	19.1	0.0	0.0	20.97
GS6105 USGS YMSD-Science Support to SR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.9	19.1	0.0	0.0	20.97
1.2.21.2.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.9	19.1	0.0	0.0	20.97
1.2.21.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11.2	1.9	20.9	0.0	0.0	33.93
4889-21318 International TSPA-SR Peer Review	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00
4889-21319 Science Support to TSPA-SR (LOE)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00
4889-21320 TSPA Checker Support	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00
81912132U2 Science Support to TSPA - SR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00
GS2397 USGS TSPA for SR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00
1.2.21.3.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00
4889-22209 Support to Disruptive Events	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.6	0.0	0.0	10.61
8191213DU1 Disruptive Events Process Model Rep	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.6	0.0	0.0	10.61
GS9093 USGS - Tectonic Hazards PMR - SR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.6	0.0	0.0	10.61
1.2.21.3.D	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.6	0.0	0.0	10.61
4889-21350 Saturated Zone PMR Finalize Field Data	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00
4889-21351 Saturated Zone PMR Comment Resolutio	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00
4889-21355 Saturated Zone PMR rev. 1	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.17

U.S. GEOLOGICAL SURVEY

ESTIMATED COSTS FOR October 1, 1999 - July 31, 2001

8/7/01 8:40:06 AM

	OCT EST	NOV EST	DEC EST	JAN EST	FEB EST	MAR EST	APR EST	MAY EST	JUN EST	JUL EST	AUG EST	SEP EST	TOTAL
8191213SU7 Science Support to SZ PMR for SR	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.17
2031 SZ Flow and Transport PMR-SR	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.17
1.2.21.3.S	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.17
4889-21360 Unsaturated Zone PMR Finalize Field Dat	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.08
4889-21361 Unsaturated Zone PMR Comment Resolut	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00
4889-21365 Unsaturated Zone PMR rev. 1	0.0	2.1	1.0	0.8	-3.8	3.3	0.0	0.0	0.0	0.0	0.0	0.0	3.31
8191213UU7 Science Support to UZ PMR for SR	0.0	2.1	1.0	0.8	-3.8	3.3	0.0	0.0	0.0	0.0	0.0	0.0	3.39
4889-21372 Infiltration Footprint	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00
8191213UU8 UZ F&T Analysis and Documentation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00
4889-21399 DEFERRED - Alcove Moisture Monitoring	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00
8191213UUM DEFERRED - Alcove Moisture Monito	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00
2027 UZ Flow and Transport PMR-SR	0.0	2.1	1.0	0.8	-3.8	3.3	0.0	0.0	0.0	0.0	0.0	0.0	3.39
1.2.21.3.U	0.0	2.1	1.0	0.8	-3.8	3.3	0.0	0.0	0.0	0.0	0.0	0.0	3.39
1.2.21.3	0.0	2.2	1.0	0.8	-3.8	3.3	0.0	0.0	0.0	10.6	0.0	0.0	14.17
4732-16300 Water Resources	35.8	35.8	35.8	2.8	45.1	26.7	18.5	46.0	32.7	63.3	0.0	0.0	342.57
81912152U5 Water Resources	35.8	35.8	35.8	2.8	45.1	26.7	18.5	46.0	32.7	63.3	0.0	0.0	342.57
4889-10715 Federal Occuational Safety & Health	8.4	10.8	7.6	8.5	7.8	10.6	6.9	9.7	7.6	8.4	0.0	0.0	86.36
81912152U6 Federal Occupational Safety and Hea	8.4	10.8	7.6	8.5	7.8	10.6	6.9	9.7	7.6	8.4	0.0	0.0	86.36
4889-84099 DEFERRED - Precipitation Gage Monitori	4.3	16.3	15.1	8.3	9.8	3.0	1.3	0.8	-0.4	0.0	0.0	0.0	58.51
81912152UM DEFERRED - Precipitation Gage Mon	4.3	16.3	15.1	8.3	9.8	3.0	1.3	0.8	-0.4	0.0	0.0	0.0	58.51
GS9121 USGS ES & H Core Program - SR	48.5	62.9	58.5	19.7	62.7	40.3	26.7	56.5	40.0	71.7	0.0	0.0	487.44
1.2.21.5.2	48.5	62.9	58.5	19.7	62.7	40.3	26.7	56.5	40.0	71.7	0.0	0.0	487.44
4889-10535 Technical Data Management	36.3	35.5	48.3	36.6	35.7	38.3	36.0	68.1	7.8	38.4	0.0	0.0	381.06
81912153U3 Technical Data Management	36.3	35.5	48.3	36.6	35.7	38.3	36.0	68.1	7.8	38.4	0.0	0.0	381.06
4889-21111 Data Q/V & Software V for SR Products	149.1	163.0	122.0	166.7	168.0	143.0	112.3	96.8	33.8	102.7	0.0	0.0	1,257.29
81912153U5 Data Q/V & Software V for SR Produc	149.1	163.0	122.0	166.7	168.0	143.0	112.3	96.8	33.8	102.7	0.0	0.0	1,257.29

U.S. GEOLOGICAL SURVEY

ESTIMATED COSTS FOR October 1, 1999 - July 31, 2001

8/7/01 8:40:06 AM

	OCT EST	NOV EST	DEC EST	JAN EST	FEB EST	MAR EST	APR EST	MAY EST	JUN EST	JUL EST	AUG EST	SEP EST	TOTAL
GS2470 USGS Tech. Data Mngmnt - SR	185.5	198.4	170.3	203.3	203.7	181.3	148.3	164.9	41.6	141.1	0.0	0.0	1,638.35
4889-10714 Records	6.0	5.9	9.8	10.9	11.5	11.2	12.4	23.9	-6.6	9.3	0.0	0.0	94.23
81912153U4 Records	6.0	5.9	9.8	10.9	11.5	11.2	12.4	23.9	-6.6	9.3	0.0	0.0	94.23
GS9197 USGS Dcmnt Cntrl, Rcrds & Mngmnt	6.0	5.9	9.8	10.9	11.5	11.2	12.4	23.9	-6.6	9.3	0.0	0.0	94.23
1.2.21.5.3	191.4	204.3	180.1	214.1	215.2	192.5	160.7	188.8	35.0	150.5	0.0	0.0	1,732.58
4889-10710 TPO	99.6	106.3	90.9	104.9	84.7	154.5	61.1	132.4	87.0	89.3	0.0	0.0	1,010.66
81912154U4 USGS TPO	99.6	106.3	90.9	104.9	84.7	154.5	61.1	132.4	87.0	89.3	0.0	0.0	1,010.66
4889-10713 Project Control	55.7	21.4	28.1	30.2	27.9	33.1	26.8	44.1	17.5	40.5	0.0	0.0	325.08
81912154U5 Project Control	55.7	21.4	28.1	30.2	27.9	33.1	26.8	44.1	17.5	40.5	0.0	0.0	325.08
4889-11201 Regulatory Product Integrity	35.8	34.0	33.1	34.8	33.8	39.6	31.8	46.4	25.2	37.0	0.0	0.0	351.36
81912154U6 Regulatory Product Integrity	35.8	34.0	33.1	34.8	33.8	39.6	31.8	46.4	25.2	37.0	0.0	0.0	351.36
GS9135 USGS Project Planning & Control	191.0	161.7	152.0	169.9	146.4	227.2	119.7	222.8	129.7	166.7	0.0	0.0	1,687.09
1.2.21.5.4	191.0	161.7	152.0	169.9	146.4	227.2	119.7	222.8	129.7	166.7	0.0	0.0	1,687.09
4889-21599 DEFERRED - Water Level Monitoring Clo	19.3	13.9	17.2	16.5	37.0	21.2	19.9	37.6	6.7	22.1	0.0	0.0	211.39
4889-23099 DEFERRED - Surface Base Boreholes Cl	18.4	17.7	21.2	21.2	23.4	25.0	12.2	35.5	14.0	22.2	0.0	0.0	210.85
8191215TUM DEFERRED - Testing and Analysis C	37.7	31.7	38.4	37.7	60.4	46.2	32.1	73.1	20.7	44.2	0.0	0.0	422.24
8621 USGS Tst Coord/Sup for Site Activitie	37.7	31.7	38.4	37.7	60.4	46.2	32.1	73.1	20.7	44.2	0.0	0.0	422.24
1.2.21.5.T	37.7	31.7	38.4	37.7	60.4	46.2	32.1	73.1	20.7	44.2	0.0	0.0	422.24
1.2.21.5	468.7	460.6	429.0	441.4	484.6	506.1	339.2	541.3	225.4	433.1	0.0	0.0	4,329.34
4889-10401 Support & Personnel Services	19.3	36.3	22.0	30.3	22.6	29.2	22.4	26.3	27.3	27.3	0.0	0.0	262.97
4889-10402 Procurement & Property Mgt.	14.6	15.1	13.7	13.7	13.6	11.6	8.1	19.7	8.6	16.7	0.0	0.0	135.45
4889-10403 Facilities Management - Space	74.7	-44.7	149.7	-11.4	-40.6	26.0	126.8	0.0	0.0	120.5	0.0	0.0	400.91
4889-10404 Facilities Management - Computers/Phon	0.0	2.4	0.9	7.9	0.4	2.7	0.4	22.5	5.9	5.3	0.0	0.0	48.50
4889-10405 Facilities Management - Other	20.7	31.1	-19.1	0.0	0.8	0.7	1.5	34.6	-2.5	0.0	0.0	0.0	67.81
4889-10406 Computer Support	20.7	20.2	16.7	14.2	17.2	15.6	13.6	24.0	20.1	24.9	0.0	0.0	187.23
81912161U3 Support and Personnel Services	150.0	60.4	184.0	54.8	14.0	85.8	172.8	127.1	59.4	194.7	0.0	0.0	1,102.87
4889-10409 DEFERRED - Space and Facilities	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00

U.S. GEOLOGICAL SURVEY

ESTIMATED COSTS FOR October 1, 1999 - July 31, 2001

8/7/01 8:40:06 AM

	OCT EST	NOV EST	DEC EST	JAN EST	FEB EST	MAR EST	APR EST	MAY EST	JUN EST	JUL EST	AUG EST	SEP EST	TOTAL
81912161UM DEFERRED - Space and Facilities	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00
GS533 USGS Administrative Support - SR	150.0	60.4	184.0	54.8	14.0	85.8	172.8	127.1	59.4	194.7	0.0	0.0	1,102.87
4889-10711 Training Support	7.5	60.6	25.7	23.6	22.4	20.7	18.6	80.3	7.6	16.1	0.0	0.0	283.08
81912161U4 Training Support	7.5	60.6	25.7	23.6	22.4	20.7	18.6	80.3	7.6	16.1	0.0	0.0	283.08
GS9111 USGS Training Program - SR	7.5	60.6	25.7	23.6	22.4	20.7	18.6	80.3	7.6	16.1	0.0	0.0	283.08
1.2.21.6.1	157.5	121.0	209.6	78.4	36.5	106.4	191.4	207.5	66.9	210.8	0.0	0.0	1,385.95
1.2.21.6	157.5	121.0	209.6	78.4	36.5	106.4	191.4	207.5	66.9	210.8	0.0	0.0	1,385.95
1.2.21	626.2	583.8	639.6	520.6	517.3	615.9	530.5	759.9	294.2	675.3	0.0	0.0	5,763.39
4889-21501 Lithostratigraphic Support to Nye Co.	18.8	11.1	13.5	18.5	15.7	9.2	7.0	8.5	7.1	7.5	0.0	0.0	117.00
4889-21511 Hydrostratigraphic Cross-Sections of Nye	0.0	0.0	17.6	6.3	12.0	24.5	15.5	28.6	13.5	36.8	0.0	0.0	154.86
81912246U1 Lithostratigraphic Support to Nye Cou	18.8	11.1	31.1	24.8	27.7	33.7	22.5	37.1	20.7	44.3	0.0	0.0	271.85
4889-21502 Isotope/Hydrochemical Support to Nye Co	23.4	17.0	20.8	17.7	37.5	29.2	12.7	16.7	6.3	11.2	0.0	0.0	192.37
81912246U2 Isotope/Hydrochemical Support to Ny	23.4	17.0	20.8	17.7	37.5	29.2	12.7	16.7	6.3	11.2	0.0	0.0	192.37
RMX25LA Nye County Drilling	42.2	28.2	51.8	42.5	65.2	62.9	35.2	53.8	26.9	55.5	0.0	0.0	464.22
1.2.22.4.6	42.2	28.2	51.8	42.5	65.2	62.9	35.2	53.8	26.9	55.5	0.0	0.0	464.22
4889-21322 Effects of Water-Rock Interaction on EBS	0.0	3.0	5.3	0.0	17.3	0.6	19.3	-0.3	12.0	19.8	0.0	0.0	77.00
8191224EU2 Effects of Water-Rock Interaction on	0.0	3.0	5.3	0.0	17.3	0.6	19.3	-0.3	12.0	19.8	0.0	0.0	77.00
4889-21321 Laboratory Support for EBS Thermal Testi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11.0	1.4	0.0	0.0	12.33
8191224EU3 Thermal Conductivity (EBS)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11.0	1.4	0.0	0.0	12.33
GS532 USGS-EBS Dgrdtn Flow & Trnsprt P	0.0	3.0	5.3	0.0	17.3	0.6	19.3	-0.3	22.9	21.1	0.0	0.0	89.32
1.2.22.4.E	0.0	3.0	5.3	0.0	17.3	0.6	19.3	-0.3	22.9	21.1	0.0	0.0	89.32
4889-21357 Hydrogeologic Framework AMR	0.0	0.4	0.0	0.0	11.5	12.0	18.3	-1.3	3.2	2.8	0.0	0.0	46.86
4889-21358 Water Level AMR	7.9	3.8	4.1	3.6	4.4	6.3	2.9	5.4	3.9	5.0	0.0	0.0	47.21
4889-22451 SZ AMRs/PMRs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00
8191224SU1 Science Support to SZ AMRs/PMR fo	7.9	4.2	4.1	3.6	15.9	18.4	21.2	4.0	7.1	7.7	0.0	0.0	94.07
4889-12013 Alluvial Testing Complex	60.9	33.1	45.5	27.1	24.5	43.6	25.7	36.7	26.5	22.4	0.0	0.0	345.94
4889-12014 Support to In-Situ AMR, Rev.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.9	0.0	0.0	8.91

U.S. GEOLOGICAL SURVEY

ESTIMATED COSTS FOR October 1, 1999 - July 31, 2001

8/7/01 8:40:07 AM

	OCT EST	NOV EST	DEC EST	JAN EST	FEB EST	MAR EST	APR EST	MAY EST	JUN EST	JUL EST	AUG EST	SEP EST	TOTAL
8191224SU3 SZ Investigations	60.9	33.1	45.5	27.1	24.5	43.6	25.7	36.7	26.5	31.3	0.0	0.0	354.86
4889-12015 Monitor Isotope/Hydrochemical Conditions	1.2	5.9	2.6	6.3	5.6	1.9	4.3	5.3	2.9	3.8	0.0	0.0	39.87
4889-12017 Isotopic Dating of Groundwater	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	2.5	3.3	0.0	0.0	6.69
8191224SU4 SZ Isotope Hydrology	1.2	5.9	2.6	6.3	5.6	1.9	4.3	6.2	5.4	7.1	0.0	0.0	46.56
4889-11012 Regional Modeling Data Base	5.5	6.4	7.3	38.8	21.6	46.2	60.7	35.7	31.7	88.6	0.0	0.0	342.53
4889-11017 Hydrogeologic Framework Model - Refine/	8.8	6.5	-2.0	51.0	13.6	18.2	-3.9	40.6	24.9	100.3	0.0	0.0	257.95
4889-11020 Groundwater Flow Modeling	13.0	27.8	12.3	47.1	13.8	7.5	2.0	21.1	18.1	108.2	0.0	0.0	270.81
4889-11021 Technical Interactions - Regional Model	1.8	-1.8	0.0	0.0	10.6	5.7	0.1	1.4	4.2	6.6	0.0	0.0	28.64
8191224SU5 Regional Model	29.1	38.9	17.6	136.9	59.6	77.7	58.8	98.8	78.8	303.7	0.0	0.0	899.93
GS522 USGS - SZ Flow & Trnsprt PMR - LA	99.2	82.1	69.7	174.0	105.6	141.5	110.1	145.6	117.8	349.8	0.0	0.0	1,395.41
1.2.22.4.S	99.2	82.1	69.7	174.0	105.6	141.5	110.1	145.6	117.8	349.8	0.0	0.0	1,395.41
4889-21345 Drift-Scale Test ESF	11.8	-2.5	7.5	4.7	-2.7	21.5	8.0	-0.9	21.2	7.3	0.0	0.0	75.89
8191224UU7 Drift-Scale Test ESF	11.8	-2.5	7.5	4.7	-2.7	21.5	8.0	-0.9	21.2	7.3	0.0	0.0	75.89
GS502 USGS - Near Field Envrn. PMR - LA	11.8	-2.5	7.5	4.7	-2.7	21.5	8.0	-0.9	21.2	7.3	0.0	0.0	75.89
4889-21303 Crossover Alcove (Alcove 8)	29.2	28.3	31.6	12.5	22.1	24.1	29.8	44.8	100.7	19.9	0.0	0.0	342.99
4889-21384 ESF/Cross Drift Moisture Monitoring	12.0	9.8	16.2	13.7	16.5	19.6	18.2	0.2	10.7	7.8	0.0	0.0	124.57
4889-21385 ECRB (Bulkhead) Moisture Monitoring	10.4	-3.0	3.4	15.3	6.5	8.2	8.0	31.6	62.1	21.2	0.0	0.0	163.80
4889-66666 Monitor for Liquid Water	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00
8191224UU3 UZ Moisture Studies	51.5	35.1	51.2	41.5	45.1	51.9	56.1	76.6	173.5	48.8	0.0	0.0	631.35
4889-22424 Surficial Carbonate Source Validation - Cr	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.29
4889-22425 Pore Water Geochemistry	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.3	1.2	5.9	0.0	0.0	13.39
4889-27009 Cl-36 Validation in the ESF	10.7	11.9	9.3	9.6	18.7	15.2	8.7	31.8	7.0	24.1	0.0	0.0	147.12
4889-62213 Ages of Calcite/Opal Fracture/Cavity Coat	38.7	33.0	24.7	60.0	11.3	32.3	25.3	65.0	27.2	46.0	0.0	0.0	363.52
4889-62219 Fluid Inclusions in Calcite/Opal	20.8	25.9	26.6	28.7	55.8	43.7	25.3	73.1	15.0	39.5	0.0	0.0	354.38
8191224UU4 UZ Isotope Hydrology	70.3	70.8	60.6	98.3	85.8	91.2	59.3	176.1	50.5	115.8	0.0	0.0	878.70
4889-21368 Busted Butte Mapping (Mineback)	0.0	5.9	16.5	7.3	2.8	0.4	5.0	21.3	55.0	3.8	0.0	0.0	117.96
4889-22401 Excavation-induced Fracture Study	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.9	0.0	0.0	5.92
4889-22402 Supplemental Surface Fracture Study	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	19.7	0.0	0.0	19.74

U.S. GEOLOGICAL SURVEY

ESTIMATED COSTS FOR October 1, 1999 - July 31, 2001

8/7/01 8:40:07 AM

	OCT EST	NOV EST	DEC EST	JAN EST	FEB EST	MAR EST	APR EST	MAY EST	JUN EST	JUL EST	AUG EST	SEP EST	TOTAL
4889-22403 Lithophysal Study in the ECRB Tptpl for E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.00
4889-22404 3-D Fracture Network Depiction	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.5	0.0	0.0	9.47
8191224UU5 Mapping (USBR)	0.0	5.9	16.5	7.3	2.8	0.4	5.0	21.3	55.0	42.0	0.0	0.0	156.10
GS520 USGS - UZ Flow & Trnsprt PMR - LA	121.8	111.8	128.3	147.1	133.7	143.5	120.4	274.0	279.0	206.6	0.0	0.0	1,666.15
1.2.22.4.U	133.6	109.3	135.8	151.8	131.0	165.0	128.4	273.1	300.2	213.9	0.0	0.0	1,742.03
1.2.22.4	274.9	222.5	262.7	368.2	319.1	370.0	293.0	472.3	467.9	640.3	0.0	0.0	3,690.99
4889-22607 Interpret WHB Geotechnical Data	1.8	4.0	0.0	-4.0	39.0	2.7	58.1	26.1	0.0	0.0	0.0	0.0	127.64
8191226TU4 Interpret WHB Geotechnical Data	1.8	4.0	0.0	-4.0	39.0	2.7	58.1	26.1	0.0	0.0	0.0	0.0	127.64
4889-22602 Deferred - Field Effort for WHB Geotechni	12.5	28.1	27.8	34.6	27.0	44.3	32.9	0.0	-1.8	0.2	0.0	0.0	205.60
8191226TUM DEFERRED - Field Effort for WHB G	12.5	28.1	27.8	34.6	27.0	44.3	32.9	0.0	-1.8	0.2	0.0	0.0	205.60
GS8622 USGS Tst Coord/Sup for Site Activitie	14.3	32.1	27.9	30.6	66.0	46.9	91.0	26.1	-1.8	0.2	0.0	0.0	333.24
1.2.22.6.T	14.3	32.1	27.9	30.6	66.0	46.9	91.0	26.1	-1.8	0.2	0.0	0.0	333.24
1.2.22.6	14.3	32.1	27.9	30.6	66.0	46.9	91.0	26.1	-1.8	0.2	0.0	0.0	333.24
4889-10712 KTI Meeting Support	0.0	0.4	4.4	13.2	8.6	0.1	0.0	0.1	1.1	6.2	0.0	0.0	34.09
81912280U1 KTI Meeting Support	0.0	0.4	4.4	13.2	8.6	0.1	0.0	0.1	1.1	6.2	0.0	0.0	34.09
GS503 Support Closure of NRC Key Technic	0.0	0.4	4.4	13.2	8.6	0.1	0.0	0.1	1.1	6.2	0.0	0.0	34.09
1.2.22.8.0	0.0	0.4	4.4	13.2	8.6	0.1	0.0	0.1	1.1	6.2	0.0	0.0	34.09
1.2.22.8	0.0	0.4	4.4	13.2	8.6	0.1	0.0	0.1	1.1	6.2	0.0	0.0	34.09
1.2.22	289.2	255.1	295.0	412.0	393.6	417.0	384.0	498.5	467.2	646.7	0.0	0.0	4,058.33
1.2 OPERATING	915.4	838.9	934.5	932.6	911.0	1,032.9	914.6	1,258.4	761.4	1,322.1	0.0	0.0	9,821.72
CAPITAL EQUIPMENT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
GRAND TOTAL	915.4	838.9	934.5	932.6	911.0	1,032.9	914.6	1,258.4	761.4	1,322.1	0.0	0.0	9,821.72
FTEs													
FEDERAL	57.8	61.5	58.2	65.4	85.9	73.9	56.8	65.8	62.3	61.0	0.0	0.0	
CONTRACT	42.0	37.3	35.1	39.7	34.3	36.8	34.5	34.6	31.7	33.3	0.0	0.0	
TOTAL	99.8	98.7	93.3	105.1	120.2	110.7	91.3	100.5	94.0	94.2	0.0	0.0	

YMP PLANNING AND CONTROL SYSTEM (PACS)

MONTHLY COST/FTE REPORT

Participant U.S. Geological Survey
Date Prepared: 8/7/01 08:40 AM

Fiscal Month/Year July 31, 2001
Page 1 of 1

<u>CURRENT MONTH END</u>							<u>FISCAL YEAR</u>		
WBS ELEMENT	ACTUAL COSTS	PARTICIPANT HOURS	SUBCONTRACT HOURS	PURCHASE COMMITMENTS	SUBCONTRACT COMMITMENTS	ACCRUED COSTS	APPROVED BUDGET	APPROVED FUNDS	CUMMULATIVE COSTS
1.2.1	37	658	152	0	06	0	448	0	351
1.2.3	798	5749	3192	0	8507	0	7981	0	5663
1.2.4	21	111	72	0	829	0	212	0	89
1.2.5	45	296	656	0	847	0	610	0	415
1.2.8	72	-10	0	0	0-	0	598	0	487
1.2.9	130	1738	230	0	825	0	1152	0	1336
1.2.12	9	18	160	0	819	0	95	0	94
1.2.15	211	1253	727	0	891	0	2068	0	1386
	1323	9813	5189	0	8724	0	13164	0	9821