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no. 79-1567

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U.S. Geological Survey.

[Reports-Open file Series]

Inventory of Drilling Activities of the U. S. Geological Survey
in the United States, Fiscal Years 1979-1980

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✓ WS G.S.L.
for L. J. Patrick Muffler
eroy
Compiled by 1937-
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and Carol Lynn Hofeling
U. S. Geological Survey
345 Middlefield Road
Menlo Park, California 94025



U. S. Geological Survey
OPEN-FILE REPORT
79-1567

300503

This report is preliminary and has not
been edited or reviewed for conformity
with Geological Survey standards
and nomenclature

FISCAL YEAR 1979

PROGRAM: Earthquake Studies DIVISION: Geologic BRANCH: Mechanics and Prediction CONTACT: Mark Zoback, Menlo Park, CA DATE: June 7, 1979

GROUPS OF DRILLHOLES

| Number of holes | Final diam. | Average depth | % core | Location | Generalized stratigraphy | Principal objectives | Cost | Other information |
|-----------------|-------------|---------------|--------|----------|--------------------------|----------------------|---|--------------------------|
| | | | | State | County | | | |
| 5 | 6" | 900' | | CA | San Benito | Granite | In situ stress, pore pressure, permeability tests | \$40,000 Not yet drilled |

INDIVIDUAL DRILLHOLES

| Hole name or number | Final Depth | diam. | Cored intervals | State | Lat | Long | Generalized stratigraphy | Principal objectives | Cost | Start Date | Finish Date |
|---------------------|-------------|-------|---------------------------------|-------|-----------|------------|---|---|-----------|------------|-------------|
| MMTW1-X | 2360' | 6" | 1415'-2023' | MO | 36°24.62' | 89°33.74' | 2000' Late Cretaceous-Tertiary Mississippi embayment sediments, 360' Paleozoic dolomite | Geologic and geophysical control, stress measurements | \$350,000 | 09/26/78 | 11/13/78 |
| CV-1 | 2000' | 8" | ample sidewall coring | CA | 36°43.42' | 121°20.89' | Located in San Andreas Fault zone - contact of granite and Tertiary sediments | Sample recovery, <u>in-situ</u> tests | \$250,000 | 04/13/79 | 06/1/79 |
| Monticello #2 | 3668' | 6" | random intervals 1-8' long (2%) | SC | 34°17.92' | 81°19.34' | Granodiorite intrusions in Piedmont Province | In situ stress, pore pressure, permeability tests | \$240,000 | 11/25/78 | 12/18/78 |

PROGRAM: Geothermal Studies DIVISION: Geologic BRANCH: Tectonophysics CONTACT: Tom Moses, Menlo Park, CA DATE: 9/4/79

INDIVIDUAL DRILLHOLES

| Hole name or number | Final Depth | diam. | Cored intervals | State | Lat | Long | Generalized stratigraphy | Principal objectives | Cost | Start Date | Finish Date |
|---------------------|-------------|--------|-----------------|-------|----------|-----------|--------------------------|----------------------|---------|------------|-------------|
| ALP# | 355' | 5-1/2" | 0 | AZ | 32°59.3' | 111°06.8' | Granite | Heat flow | \$2,700 | 03/29/79 | 03/31/79 |
| BMT | 248 | " | " | AZ | 32°47.0' | 110°55.4' | " | " | " | 03/31/79 | 04/01/79 |
| DOS | 484 | " | " | AZ | 32°10.7' | 109°35.3' | " | " | " | 04/13/79 | 04/14/79 |
| NOG | 504 | " | " | AZ | 32°22.7' | 110°45.5' | " | " | " | 04/04/79 | 04/10/79 |
| PNT | 504 | " | " | AZ | 33°21.3' | 110°57.8' | " | " | \$3,800 | 03/21/79 | 03/28/79 |

*All hole names listed under this program are three- or four-letter code abbreviations for the actual hole names. These are holes permitted, or in process of being drilled. Latitude and longitude are only tentative. Cased diameter is 1.66 OD, 1.380 ID, with bottom 200' of annulus cemented.

INDIVIDUAL DRILLHOLES (continued)

FY-79 - continued

INDIVIDUAL DRILLHOLES (continued)

| <u>Hole name or number</u> | <u>Depth</u> | <u>Final diam.</u> | <u>Cored intervals</u> | <u>State</u> | <u>Lat</u> | <u>Long</u> | <u>Generalized stratigraphy</u> | <u>Principal objectives</u> | <u>Cost</u> | <u>Start Date</u> | <u>Finish Date</u> |
|----------------------------|--------------|--------------------|------------------------|--------------|------------|-------------|---------------------------------|-----------------------------|-------------|-------------------|--------------------|
| TEH | 335' | 5-1/2" | 0 | CA | 35°08.3' | 118°26.2' | Granite | Heat flow | | 06/08/79 | 06/10/79 |
| LSNH | 610' | " | " | CA | 40°23.6' | 121°21.6' | Quaternary and Tertiary | " | | 08/17/79 | 08/20/79 |
| LSNL | 310' | " | " | CA | 40°22.6' | 121°24.5' | volcanics | " | | 08/21/79 | 08/27/79 |
| LSNG | 565' | " | " | CA | 40°24.4' | 121°26.8' | " | " | | 08/27/79 | 08/30/79 |
| LKA | 720' | 5-1/8" | " | CA | 36°42.2' | 121°20' | Granite | " | | 07/23/79 | 08/11/79 |
| LKB | 685' | 5-1/4" | " | CA | 36°41.6' | 121°20.3' | " | " | | 07/25/79 | 07/27/79 |
| LKC | 696' | " | " | CA | 36°41.7' | 121°22.2' | " | " | | 07/28/79 | 07/31/79 |
| LKD | 717' | " | " | CA | 36°38.4' | 121°27.4' | " | " | | 08/01/79 | 08/09/79 |
| COS | 505' | 5-1/2" | " | CA | 38°04.7' | 119°08.8' | " | " | | 07/06/79 | 07/08/79 |
| GAS | 365' | " | " | CA | 37°53.7' | 118°50.9' | " | " | | 06/12/79 | 06/13/79 |
| GTM | 505' | 5-1/4" | " | CA | 37°54.3' | 118°45.4' | " | " | | 06/13/79 | 06/20/79 |
| IND | 505' | " | " | CA | 37°56.0' | 118°53.3' | " | " | | 07/11/79 | 07/13/79 |

PROGRAM: Earthquake Studies

DIVISION: Geologic

BRANCH: Ground Motion & Faulting

CONTACT: Jim Gibbs, Menlo Park, CA

DATE: 5/30/79

GROUPS OF DRILLHOLES

| <u>Number of holes</u> | <u>Final diam.</u> | <u>Average depth</u> | <u>% core</u> | <u>Location</u> | <u>Generalized stratigraphy</u> | <u>Principal objectives</u> | <u>Cost</u> | <u>Other information</u> |
|------------------------|--------------------|----------------------|---------------|-----------------|---------------------------------|-----------------------------|-------------|--------------------------|
| 40 | 4-7/8" | 30 m | | CA | Los Angeles | | | |
| 7 | " | " | | CA | Ventura | Shear-wave measurements | \$24,000 | |
| | | | | | | " " " | \$ 4,000 | |

PROGRAM: Earthquake

DIVISION: Geologic

BRANCH: Seismology

CONTACT: D. P. Hill, Menlo Park, CA

DATE: 8/22/79

GROUPS OF DRILLHOLES

| <u>Number of holes</u> | <u>Final diam.</u> | <u>Average depth</u> | <u>% core</u> | <u>Location</u> | <u>Generalized stratigraphy</u> | <u>Principal objectives</u> | <u>Cost</u> | <u>Other information</u> |
|------------------------|--------------------|----------------------|---------------|-----------------|---------------------------------|------------------------------------|-------------------------|--------------------------|
| 20-30 | 6-9" | 150' | -- | ID OR CA | | Shot holes for refraction profiles | Total: approx. \$55,000 | @ average \$15/ft. |

FY-79 - continued

PROGRAM: See Other Information DIVISION: Geologic BRANCH: Engineering Geology CONTACT: Various (see Other Information) DATE: 5/79

GROUPS OF DRILLHOLES

| <u>Number of holes</u> | <u>Final diam.</u> | <u>Average depth</u> | <u>% core</u> | <u>Location</u> | <u>State</u> | <u>County</u> | <u>Generalized stratigraphy</u> | <u>Principal objectives</u> | <u>Cost</u> | <u>Other information</u> |
|------------------------|--------------------|----------------------|---------------|-----------------|--------------|---------------|--|-----------------------------|-------------|---|
| 3 | 6" | 100' | 0 | WY | Johnson | | Quaternary sediments & terranes, Seismic research Ft. Union Formation | | Unknown | Program: Energy Lands Contact: C. Miller* |
| 14 | 6" | 5' | 100 | CO | Jefferson | | Generally biotite and gneiss | Research instrumentation | \$3000 | Program: Radioactive waste storage Contact: H. Swolfs* |
| 31 | 3-1/2" | 15' | 0 | OH | Hamilton | | Colluvium on flat-lying kope formation | Landslide instrumentation | \$5000 | Program: Landslide investigations Contact: R. Fleming* |

*All contacts in Denver, CO.

PROGRAM: DIVISION: Geologic BRANCH: Coal Resources CONTACT: Various (see Other Information) DATE: 8/28/79

GROUPS OF DRILLHOLES

| <u>Number of holes</u> | <u>Final diam.</u> | <u>Average depth</u> | <u>% core</u> | <u>Location</u> | <u>State</u> | <u>County</u> | <u>Generalized stratigraphy</u> | <u>Principal objectives</u> | <u>Cost</u> | <u>Other information</u> |
|------------------------|--------------------|----------------------|---------------|-----------------|----------------------------------|---------------|--|-----------------------------|-------------|---|
| 3 | 3" | 1350' | 9 | CO | Huerfano Las Animas | | Vermejo (Upper Cretaceous) & Raton, Upper Cretaceous & Paleocene | Coal evaluation | | 4,040' primary 1,360' twin 550' coring Contract Contact: Walter Danilchik* |
| 29 | 3" | 450' | 2 | MT | Roosevelt Daniels Sheridan | | Ft. Union (Paleocene) | Coal evaluation | | 13,050' primary 4,900' twin 385' coring Contract Contact: H. H. Arndt* |
| 4 | 3" | 500' | 1 | NM | Valencia Catron | | Mesaverde Formation | Coal evaluation | | 2000' primary 1500' twin 40' coring USGS drill rig Contact: E. J. McKay* |

*All contacts in Denver, CO.

FY-79 - continued

GROUPS OF DRILLHOLES (continued)

| <u>Number of holes</u> | <u>Final diam.</u> | <u>Average depth</u> | <u>% core</u> | <u>Location</u> | <u>State</u> | <u>County</u> | <u>Generalized stratigraphy</u> | <u>Principal objectives</u> | <u>Cost</u> | <u>Other information</u> |
|------------------------|--------------------|----------------------|---------------|-----------------|-------------------|-----------------|--|--|-------------|--|
| 6 | 3" | 500' | 1 | NM | Valencia | | Crevasse Canyon Formation of Mesaverde Group | Location and thickness of coal--Acoma Indian Reservation | | USGS drilling 3,000' primary 2,600' twin 100' coring Contact: W. J. Mapel* |
| 6-10 | 3" | 550' | 6 | NM | Bernadillo | Crevasse Canyon | | Assess coal resources of Canoncito Indian Reservation | | 5500' primary 3000' twin USGS drill rig 550' coring Contact: Bill Mapel* |
| 10 | 3" | 350' | 4 | NM | San Juan | Menefee Coal | | Coal evaluation | | 3500' primary 1500' twin Contract Contact: Robert O'Sullivan* |
| 11 | 3" | 100' | 30 | UT | Emery | | Ferron Sandstone (Cretaceous) | Coal samples for petrographic study | | USGS drilling 926' rotary 392' coring Contact: T. A. Ryer* |
| 5 | | 538' | 25 | UT | Garfield Grand | | Nelsen/Sego - Mesa Verde | Coal quality & quantity, stratigraphy & correlation | | 2000' pilot 1400' twin 1160' coring USGS drilling rig Contact: J. Gualtieri* |
| 3 | 3" | 1000' | 25 | UT | Emery | | Star Point Sandstone (Cretaceous) | Coal core | | Contract 2,125' rotary 700' coring Contact: Joseph D. Sanchez* |
| 11 | 3" | 100' | 30 | UT | Emery | | Ferron Sandstone | Coal samples for petrographic study | \$17,000 | USGS drill rig 926' rotary 392' coring Contact: T. A. Ryer* |

*All contacts in Denver, CO.

FY-79 - continued

GROUPS OF DRILLHOLES (continued)

| <u>Number of holes</u> | <u>Final diam.</u> | <u>Average depth</u> | <u># core</u> | <u>Location</u> | <u>State</u> | <u>County</u> | <u>Generalized stratigraphy</u> | <u>Principal objectives</u> | <u>Cost</u> | <u>Other information</u> |
|------------------------|--------------------|----------------------|---------------|-----------------|--------------|---------------|---|--|-------------|--|
| 35+ | 3" | 400' | 3 | WY | Fremont | | Mesaverde, Meeteetse, & Lance Formations; Cretaceous | Coal resource evaluation | | 14,000' primary 3,000' twin 600' coring Contract Contact: John F. Windolph, Jr.* |
| 30 | 3" | 500' | 6 | WY | Campbell | | Lebo Shale Member, Ft. Union Formation, Wasatch Formation | Coal evaluation; stratigraphic correlation | | 15,000' primary 10,000' twin 1500' coring USGS drill rig Contact: R. G. Hobbs* |
| 44 | 3" | 450' | 5 | WY | Carbon | Albany | Ferris (Paleocene) and Hanna (Eocene) | Coal evaluation | | Contract 20,000' rotary 1000' coring Contact: Dan E. Hansen* |
| 5-6 | 3" | 400' | 20-33 | WY | Carbon | Albany | Ferris (Paleocene) and Hanna (Eocene) | Coal evaluation | | USGS drill rig 1600' rotary 400'-800' coring Contact: Dan E. Hansen* |

*All contacts in Denver, CO.

PROGRAM: B.I.A.-Navajo Res.- DIVISION: Geologic BRANCH: Uranium & Thorium CONTACT: Morris Green, Denver, CO DATE: 8/23/79
Uranium

INDIVIDUAL DRILLHOLES

| <u>Hole name or number</u> | <u>Final depth</u> | <u>diam.</u> | <u>Cored intervals</u> | <u>State</u> | <u>Lat</u> | <u>Long</u> | <u>Generalized stratigraphy</u> | <u>Principal objectives</u> | <u>Cost</u> | <u>Start Date</u> | <u>Finish Date</u> |
|----------------------------|--------------------|--------------|------------------------|--------------|------------|-------------|---|---|-------------|-------------------|--------------------|
| Gallup Sag | 6000' | 6" | Morrison Fm. | NM | 35°40' | 108°53'30" | Cret.-Precambrian | Lithology, facies, mineralization, alteration | \$180,000 | Oct. 1 | |
| Hopi Buttes 1 | 2000' | 6" | Diatreme | AZ | 35°15' | 110°2.30' | Tuff, agglomerate blocks, other volcanic rocks and sedimentary inclusions | Distribution of mineralized zones in volcanics and sedimentary inclusions | \$140,000 | Oct. 1 | |

FY-79 - continued

INDIVIDUAL DRILLHOLES (continued)

| <u>Hole name or number</u> | <u>Depth</u> | <u>Final diam.</u> | <u>Cored intervals</u> | <u>State</u> | <u>Lat</u> | <u>Long</u> | <u>Generalized stratigraphy</u> | <u>Principal objectives</u> | <u>Cost</u> | <u>Start Date</u> | <u>Finish Date</u> |
|----------------------------|--------------|--------------------|------------------------|--------------|------------|-------------|---------------------------------|-----------------------------|-------------|-------------------|--------------------|
| Hopi Buttes 2 | 1000' | 6" | Diatreme | AZ | 35°15' | 110°2.30' | Same as Hopi Buttes 1 | Same as Hopi Buttes 1 | | | |
| Hopi Buttes 3 | 1000' | 6" | " | AZ | " | " | " " " " " | " " " " " | | | |

PROGRAM: Lithium resource appraisal DIVISION: Geologic BRANCH: Chem. Resources CONTACT: J. Vine, Denver, CO DATE: 8/22/79

INDIVIDUAL DRILLHOLES

| <u>Hole name or number</u> | <u>Depth</u> | <u>Final diam.</u> | <u>Cored intervals</u> | <u>State</u> | <u>Lat</u> | <u>Long</u> | <u>Generalized stratigraphy</u> | <u>Principal objectives</u> | <u>Cost</u> | <u>Start Date</u> | <u>Finish Date</u> |
|----------------------------|--------------|--------------------|------------------------|--------------|------------|-------------|---------------------------------|-----------------------------|-------------|-------------------|--------------------|
| 1 | 700 | 4.5" | none | NV | 37°49' | 117°58' | Playa sediments | Li-brine or clay | | 9/79 | |
| 2 | 1000 | " | " | NV | 37°52' | 117°56' | " " | " " " | | | |
| 3 | 600 | " | " | NV | 37°57' | 117°42' | " " | " " " | | | |
| 4 | 400 | " | " | NV | 38°03' | 117°35' | " " | " " " | | | |
| 5 | 500 | " | " | NV | 37°51' | 117°24' | " " | " " " | | | |
| 6 | 400 | " | " | NV | 37°54' | 117°18' | " " | " " " | | | |
| 7 | 400 | " | " | NV | 37°54' | 117°04' | " " | " " " | | | |
| 8 | 500 | " | " | NV | 37°32' | 117°09' | " " | " " " | \$75,000 | | 10/79 |

PROGRAM: Utah Oil Shale DIVISION: Geologic BRANCH: Chemical Resources CONTACT: W. B. Cashion, Denver, CO DATE: 8/28/79

INDIVIDUAL DRILLHOLES

| <u>Hole name or number</u> | <u>Depth</u> | <u>Final diam.</u> | <u>Cored intervals</u> | <u>State</u> | <u>Lat</u> | <u>Long</u> | <u>Generalized stratigraphy</u> | <u>Principal objectives</u> | <u>Cost</u> | <u>Start Date</u> | <u>Finish Date</u> |
|----------------------------|--------------|--------------------|------------------------|--------------|------------|-------------|---|--------------------------------------|-------------|-------------------|--------------------|
| 1 | 200 | 3.5" | 150-200 | UT | 39°36'N | 109°37'W | Parachute Creek Member of the Green River Formation (oil shale and siltstone) | Mahogany zone; to evaluate oil shale | \$4,500 | | |
| 2 | " | " | " " | UT | 39°34'N | 109°32'W | | | " | | |
| 3 | " | " | " " | UT | 39°31'N | 109°35'W | | | " | | |
| 4 | " | " | " " | UT | 39°30'N | 109°29'W | | | " | 10/1/79 | 10/30/79 |

FY-79 - continued

INDIVIDUAL DRILLHOLES (continued)

| <u>Hole name or number</u> | <u>Depth</u> | <u>Final diam.</u> | <u>Cored intervals</u> | <u>State</u> | <u>Lat</u> | <u>Long</u> | <u>Generalized stratigraphy</u> | <u>Principal objectives</u> | <u>Cost</u> | <u>Start Date</u> | <u>Finish Date</u> |
|----------------------------|--------------|--------------------|------------------------|--------------|------------|-------------|---------------------------------|-----------------------------|-------------|-------------------|--------------------|
| 5 | " | " | " " | UT | 39°28'N | 109°27'W | (see previous page) | (see previous page) | \$4,500 | | |
| 6 | " | " | " " | UT | 39°24'N | 109°27'W | " | " | " | | |
| 7 | " | " | " " | UT | 39°32'N | 109°31'W | " | " | \$31,500 | | |

PROGRAM: Blacktail Mountain DIVISION: Geologic BRANCH: Central Mineral Resources CONTACT: J. W. Hasler, Denver, CO DATE: 8/22/79

GROUPS OF DRILLHOLES

| <u>Number of holes</u> | <u>Final diam.</u> | <u>Average depth</u> | <u>% core</u> | <u>Location</u> | <u>Generalized stratigraphy</u> | <u>Principal objectives</u> | <u>Cost</u> | <u>Other information</u> |
|------------------------|--------------------|----------------------|---------------|-----------------|---|---|-------------|--|
| 22 | 4&7/8" | 81.1 | 96.3 | MT Flathead | Precambrian belt supergroup Empire and Spokane formations | Research on stratabound copper occurrences in green beds of belt supergroup | \$80,800 | Beds were cored continuously after hole was collared. Obtained 3-inch (76.2 mm) core. Holes range from 30-155 feet deep. |

PROGRAM: DIVISION: Geologic BRANCH: Astrogeology CONTACT: David Roddy, Flagstaff, AZ DATE: 8/30/79

GROUPS OF DRILLHOLES

| <u>Number of holes</u> | <u>Final diam.</u> | <u>Average depth</u> | <u>% core</u> | <u>Location</u> | <u>Generalized stratigraphy</u> | <u>Principal objectives</u> | <u>Cost</u> | <u>Other information</u> |
|------------------------|--------------------|----------------------|---------------|-----------------|---|-----------------------------|-------------------|--|
| 15 | BX and NX | 200'-3000' | 100 | TN Jackson | Fort Payne Chert Chattanooga Shale Impact crater breccia Leipers Formation (limestone) Catheys Formation (limestone) Cannon limestone Hermitage Formation (limestone) Stones River Group (limestone and dolomite) Knox Group (limestone and dolomite) | Study of impact cratering | See "Other Info." | Drilling in progress--no estimate of cost yet. All within Flynn Creek impact crater. |

FY-79 - continued

| PROGRAM: | | | | DIVISION: Geologic | | BRANCH: Eastern Environmental | | | CONTACT: Dennis Duty, Reston, VA | | DATE: | |
|-------------------------------------|-------------|---------------|-----------------|--------------------|--------------------------|-----------------------------------|--|-------------------------------|---|------------|---------------|--|
| <u>GROUPS OF DRILLHOLES</u> | | | | | | | | | | | | |
| Number of holes | Final diam. | Average depth | % core | Location | Generalized stratigraphy | Principal objectives | Cost | Other information | | | | |
| 4 | 3" | 50' | 75 | MA | Barnstable | Mashpee Outwash plain | Stratigraphic test | Split spoon samples | | | | |
| 2 | 4" | 50' | 10 | MA | Plymouth | Pleistocene/Tertiary/Penn. | " " | Sample overburden and core | | | | |
| 2 | 3" | 100' | 75 | MA | Bristol | Pleistocene | Glacial tectonics | Shelby tube sampling | | | | |
| 2 | 4" | 250' | 90 | NY | Rockland | Triassic/Paleoz./PrC | Assess seismicity of faults | Split spoon sampling | | | | |
| <u>INDIVIDUAL DRILLHOLES</u> | | | | | | | | | | | | |
| Hole name or number | Depth | Final diam. | Cored intervals | State | Lat | Long | Generalized stratigraphy | Principal objectives | Cost | Start Date | Finish Date | |
| Cusseta #1 | 120' | 2&1/2" | 100 | GA | 32.31° | 84.79° | Upper Blufftown Fm. | Stratigraphic test | | 10/20/79 | 10/21/79 | |
| Buena Vista NW #1 | 105' | 2&1/2" | 100 | GA | 32.41° | 84.64° | Lower Blufftown/Eutaw | Stratigraphic test | | 10/23/79 | 10/24/79 | |
| Eufaula North #1 | 75' | 2&1/2" | 100 | AL | 31.16° | 85.15° | Upper Ripley Fm. | Stratigraphic test | | 10/25/79 | 10/26/79 | |
| Eufaula North #2 | 120' | 2&1/2" | 100 | AL | 31.91° | 85.15° | Ripley/Cusseta | Stratigraphic test | | 10/26/79 | 10/27/79 | |
| Brooklyn #1 | 121' | 2&1/2" | 100 | GA | 32.23° | 84.70° | Providence/Ripley | Stratigraphic test | | 10/28/79 | 10/29/79 | |
| Catamount #2 | 600' | 4" | 100 | NY | 41.10° | 74.05° | Triassic/Paleoz./PC. | Identify seismicity of faults | \$11,000. | 10/78 | 9/79 | |
| PROGRAM: Evaluation of Indian Lands | | | | DIVISION: Geologic | | BRANCH: Eastern Mineral Resources | | | CONTACT: William F. Cannon, Reston, VA | | DATE: 4/25/79 | |
| <u>GROUPS OF DRILLHOLES</u> | | | | | | | | | | | | |
| Number of holes | Final diam. | Average depth | % core | Location | Generalized stratigraphy | Principal objectives | Cost | Other information | | | | |
| 3 | 2" | 500' | 100% | WI | Forest | Lower Proterozoic volcanic rocks | Determine nature of rock causing electromagnetic anomalies. Evaluate economic potential of tribal lands. | \$40,000 (estimate) | Drilling is planned for June and July, 1979 | | | |

FY-79 - continued

PROGRAM: DIVISION: Geologic BRANCH: Atlantic-Gulf of Mexico CONTACT: J. Robb, Woods Hole, MA DATE: 4/25/79

GROUPS OF DRILLHOLES

| <u>Number of holes</u> | <u>Final diam.</u> | <u>Average depth</u> | <u>% core</u> | <u>Location</u> | <u>Generalized stratigraphy</u> | <u>Principal objectives</u> | <u>Cost</u> | <u>Other information</u> |
|------------------------|--------------------|----------------------|---------------|--|---------------------------------|--|-------------|--|
| 40 | 3&1/2" | 30' | 100 | Georges Bank and Middle Atlantic area: Continental Slope, 200-2000 m | Pleistocene and older | Geotechnical properties in slump and non-slump areas | 135,000 | Project planned to be continued in FY80. |
| core diam. | | | | | | | | |

PROGRAM: Geothermal Research DIVISION: WRD REGION: Western CONTACT: James H. Robison, Menlo Park, CA DATE: May 22, 1979

GROUPS OF DRILLHOLES

| <u>Number of holes</u> | <u>Final diam.</u> | <u>Average depth</u> | <u>% core</u> | <u>Location</u> | <u>Generalized stratigraphy</u> | <u>Principal objectives</u> | <u>Cost</u> | <u>Other information</u> |
|------------------------|--------------------|----------------------|---------------|-----------------|---------------------------------|--------------------------------|-------------|--------------------------|
| 3 | 5" | 500' | 1 | CA Riverside | Alluvium, lake deposits | Geothermal Resource Assessment | \$10,000 | Coachella Valley |

INDIVIDUAL DRILLHOLES

| <u>Hole name or number</u> | <u>Depth</u> | <u>Final diam.</u> | <u>Cored intervals</u> | <u>State</u> | <u>Lat</u> | <u>Long</u> | <u>Generalized stratigraphy</u> | <u>Principal objectives</u> | <u>Cost</u> | <u>Start Date</u> | <u>Finish Date</u> |
|----------------------------|--------------|--------------------|------------------------|--------------|------------|-------------|---|-----------------------------|-------------|-------------------|--------------------|
| 1 | 3000' | 4" | All | OR | 43°42.5' | 121°13.3' | Late Cenozoic volcanics of Newberry Caldera | Geothermal Resource | \$100,000 | | |

PROGRAM: DIVISION: WRD REGION: Western CONTACT: E. R. Leggat, Menlo Park, CA DATE: 9/4/79

GROUPS OF DRILLHOLES

| <u>Number of holes</u> | <u>Final diam.</u> | <u>Average depth</u> | <u>% core</u> | <u>Location</u> | <u>Generalized stratigraphy</u> | <u>Principal objectives</u> | <u>Cost</u> | <u>Other information</u> |
|------------------------|--------------------|----------------------|---------------|-----------------|---------------------------------|-----------------------------|-------------|---------------------------------|
| 20 | 1&1/2" | 20-80' | | WA Okanogan | Alluvium-glacial drift | Observation wells | \$15,000 | |
| 12-15 | 2" | 20-60' | | WA Thurston | Alluvium | " " | \$6,500 | |
| 20 | 2" | 10-50' | | WA King | Alluvium | " " | \$8,200 | |
| 6 | 6" | 80-400' | | WA King | Glacial drift | " " | \$18,700 | Quality of water sampling |
| 3 | 6" | 170' | no | OR Coos Bay | Beach sand | Hydrologic heads | \$15,000 | Saltwater-fresh water interface |
| 4 | 6" | 100' | no | AK Kenai | Alluvial fan | Stratigraphy | \$20,000 | Hydrologic head distribution |
| 35 | 2" | 960' | no | WA Yakima | Alluvium | Observe water levels | \$10,000 | |

FY-79 - continued

GROUPS OF DRILLHOLES (continued)

| <u>Number of holes</u> | <u>Final diam.</u> | <u>Average depth</u> | <u>% core</u> | <u>Location</u> | <u>Generalized stratigraphy</u> | <u>Principal objectives</u> | <u>Cost</u> | <u>Other information</u> |
|------------------------|--------------------|----------------------|---------------|-----------------|---------------------------------|-----------------------------|-------------|---------------------------|
| 50 | 2" | 2500' | | WA King | Glacial drift | Observation wells | \$42,000 | Quality of water sampling |
| 1 | 12" | 1200' | | WA Douglass | Basalt | Piezometers | \$20,000 | Head measurement |

INDIVIDUAL DRILLHOLES

| <u>Hole name or number</u> | <u>Final depth</u> | <u>diam.</u> | <u>Cored intervals</u> | <u>State</u> | <u>Lat</u> | <u>Long</u> | <u>Generalized stratigraphy</u> | <u>Principal objectives</u> | <u>Cost</u> | <u>Start Date</u> | <u>Finish Date</u> |
|---------------------------------|--------------------|--------------|-----------------------------|--------------|------------|-------------|---------------------------------|---|-------------|-------------------|--------------------|
| TI2N/R1E-34RD1 (Test hole 1) | 2501' | 3" | 100' 90' sidewalls | CA | 38°50.20' | 121°50.36' | Alluvium | Stratigraphy-hydrologic characteristics, head distribution, water quality | \$177,000 | 3/5/79 | 4/12/79 |
| Test hole 2 | 1400' | 3" | 100 core (60' sidewalls) | CA | 39°27.30' | 121°57.50' | Alluvium | Stratigraphy-hydrologic characteristics, head distribution, water quality, observation of water level | \$150,000 | 6/79 | 8/79 |
| Kona T-1 | 1040' | 6" | none | HI | | | Basalt | | \$110,000 | 3/79 | 5/79 |

PROGRAM: Data Collection

DIVISION: W/R

DISTRICT: Arkansas

CONTACT: A. H. Ludwig, Little Rock, AR

DATE: 8/23/79

INDIVIDUAL DRILLHOLES

| <u>Hole name or number</u> | <u>Final depth</u> | <u>diam.</u> | <u>Cored intervals</u> | <u>State</u> | <u>Lat</u> | <u>Long</u> | <u>Generalized stratigraphy</u> | <u>Principal objectives</u> | <u>Cost</u> | <u>Start Date</u> | <u>Finish Date</u> |
|----------------------------|--------------------|--------------|------------------------|--------------|------------|-------------|----------------------------------|--------------------------------|-------------|-------------------|--------------------|
| 16N01E30 | 360' | 4" | 0 | | 35°59'31" | 91°00'59" | Cretaceous, Tertiary, Quaternary | Water Resources Investigations | \$1000 | | 2/28 |
| 18N02E25 | 400' | 4" | 0 | | 36°10'07" | 90°49'00" | " | | " | | 3/7 |
| 13N01W30 | 400' | 4" | 0 | | 35°49'28" | 91°07'54" | " | | " | | 3/8 |
| 12N02W05 | 450' | 4" | 0 | | 35°42'32" | 91°12'47" | " | | " | | 3/27 |
| 08S17W18 | 240' | 4" | 0 | | 34°01'59" | 92°05'59" | Tertiary-Quaternary | | " | | 4/26 |
| 08S17W14 | 165' | 4" | 0 | | 34°01'25" | 92°04'15" | | | " | | 4/27 |
| 11S19W04 | 150' | 4" | 0 | | 33°48'50" | 93°03'33" | " | | " | | 4/30 |
| 12S20W16 | 300' | 4" | 0 | | 33°04'13" | 93°10'00" | " | | " | | 5/1 |
| 14S22W05 | 150' | 4" | 0 | | 33°33'16" | 93°24'14" | " | | " | | 5/2 |
| 13S23W04 | 150' | 4" | 0 | | 33°38'46" | 93°29'12" | " | | " | | 5/2 |
| 13S20W36 | 123' | 4" | 0 | | 33°33'24" | 93°07'08" | " | | " | | 5/3 |
| 14S19W29 | 250' | 4" | 0 | | 33°29'42" | 93°05'13" | " | | " | | 5/4 |
| 17S19W15 | 300' | 4" | 0 | | 33°15'19" | 93°03'12" | " | | " | | 5/7 |
| 18S20W20 | 310' | 4" | 0 | | 33°09'22" | 93°12'10" | " | | " | | 5/8 |
| 18S23W26 | 290' | 4" | 0 | | 33°09'20" | 93°27'48" | " | | " | | 5/9 |
| 16S24W19 | 290' | 4" | 0 | | 33°20'26" | 93°37'28" | " | | " | | 5/10 |
| 16S27W31 | 145' | 4" | 0 | | 33°19'15" | 93°56'25" | " | | " | | 5/14 |

FY-79 - continued

PROGRAM: Liquid Waste,
Arbuckle Group, KS

DIVISION: WRD

DISTRICT: Kansas

CONTACT: A. J. Gogel, Lawrence, KS

DATE: 8/23/79

INDIVIDUAL DRILLHOLES

| Hole name or number | Final Depth | Final diam. | Cored intervals | State | Lat | Long | Generalized stratigraphy | Principal objectives | Cost | Start Date | Finish Date |
|------------------------|----------------|----------------|--------------------|-------|-----------|-----------|-----------------------------|------------------------------------|-----------|---------------|----------------|
| 1 | 2150' | 4" | -- | | 38°28'33" | 94°54'28" | Limestones, shales | Arbuckle (hydraulic parameters) | \$76,000 | 10/79 | -- |
| 2 | 3000' | 6-1/2" | 60' in Arbuckle | | 39°00'45" | 95°28'24" | Limestones, shales | " | \$141,000 | 11/79 | -- |
| 3 | 3700' | 6-1/2" | " " | | 38°51'19" | 97°33'59" | Limestones, shales | " | \$168,000 | 11/79 | -- |

PROGRAM: Contamination-Equus
Beds

DIVISION: WRD

DISTRICT: Kansas

CONTACT: J. B. Gillespie, Lawrence, KS

DATE: 8/22/79

GROUPS OF DRILLHOLES

| Number of holes | Final diam. | Average depth | % core | Location State | Location County | Generalized stratigraphy | Principal objectives | Cost | Other information |
|--------------------|----------------|------------------|-----------|-------------------|--------------------|--|--|----------|-----------------------|
| 5 | 2" | 200' | | KS | Reno | Alluvium sand, gravel, silt, and clay | GS quantity and quality. GS flow modeling. GS solute transport modeling. | \$15,000 | Drilling (June, 1979) |

PROGRAM: Wellington aquifer
parameters

DIVISION: WRD

DISTRICT: Kansas

CONTACT: J. B. Gillespie, Lawrence, KS

DATE: 8/22/79

GROUPS OF DRILLHOLES

| Number of holes | Final diam. | Average depth | % core | Location State | Location County | Generalized stratigraphy | Principal objectives | Cost | Other information |
|--------------------|----------------|------------------|-----------|-------------------|--------------------|--|-------------------------------|----------|-------------------------------|
| 4 | 4" | 150' | 0 | KS | Saline | 60' alluvium (sand & gravel). 90' shale and interbedded shale and gypsum | Determine aquifer parameters. | \$10,000 | Drilling June & July, 1979 |

FY-79 - continued

PROGRAM: DIVISION: WRD DISTRICT: Louisiana CONTACT: George T. Cardwell, Baton Rouge, LA DATE: 8/23/79

GROUPS OF DRILLHOLES

| <u>Number of holes</u> | <u>Final diam.</u> | <u>Average depth</u> | <u>% core</u> | <u>Location</u> | <u>Generalized stratigraphy</u> | <u>Principal objectives</u> | <u>Cost</u> | <u>Other information</u> |
|-----------------------------------|-----------------------------------|----------------------|---------------|-----------------|--|---|----------------------|--------------------------|
| <u>State</u> | <u>County</u> | | | | | | | |
| 2 | 2" | 650' | 0 | LA | East Baton Rouge and West Baton Rouge. | Pleistocene sand and gravel | Water-level monitors | \$3000 |
| 8 (in addition to wells below) | 4" (Rotary drill samples only) | 120' | None | LA | De Soto | Unconsolidated sand of Tertiary age (mostly Wilcox Sand). | Lignite project | est. \$2000 |

INDIVIDUAL DRILLHOLES

| <u>Hole name or number</u> | <u>Final depth</u> | <u>Cored intervals</u> | <u>State</u> | <u>Lat</u> | <u>Long</u> | <u>Generalized stratigraphy</u> | <u>Principal objectives</u> | <u>Cost</u> | <u>Start Date</u> | <u>Finish Date</u> |
|----------------------------|--------------------|------------------------|--------------|------------|-------------|--|---|--|---|---|
| | <u>Depth</u> | <u>diam.</u> | | | | | | | | |
| Cl-148 | 745' | --- | 0 | 32°54'37" | 92°50'33" | Unconsolidated sand and clay of Tertiary age (mostly Sparta Sand). | Stratigraphy, water quality, and water level information. | \$7142.50 \$8311.00 \$9143.00 \$7022.00 \$11635.00 \$9305.00 \$6309.00 \$4521.00 \$4883.00 | 10/4/78 10/9/78 12/27/78 10/11/78 1/22/79 2/5/79 10/2/78 10/16/78 2/16/79 | 10/11/78 10/19/78 1/22/79 10/18/78 2/7/79 3/2/79 10/6/78 10/19/78 2/16/79 |
| Cl-149 | 907' | 5.6" | Rotary | 33°00'02" | 92°44'59" | | | | | |
| Ja-156 | 814' | 4.5" | drill | 32°17'30" | 92°37'37" | | | | | |
| L-153 | 764' | 5.6" | samples | 32°40'18" | 92°48'22" | | | | | |
| Ou-488 | 957' | 4.5" | only. | 32°24'37" | 92°24'31" | " | " | | | |
| Un-134 | 859' | 4.5" | " | 32°36'55" | 92°21'17" | " | " | | | |
| Wb-398 | 623' | 4.75" | " | 32°45'28" | 93°01'35" | " | " | | | |
| Wb-399 | 417' | 5.0" | " | 32°55'18" | 93°02'19" | " | " | | | |
| W-174 | 469 | --- | " | 32°04'33" | 92°46'52" | " | " | | | |

PROGRAM: Montana District DIVISION: WRD DISTRICT: Montana CONTACT: Joe A. Moreland, Helena, MT DATE: 8/28/79

GROUPS OF DRILLHOLES

| <u>Number of holes</u> | <u>Final diam.</u> | <u>Average depth</u> | <u>% core</u> | <u>Location</u> | <u>Generalized stratigraphy</u> | <u>Principal objectives</u> | <u>Cost</u> | <u>Other information</u> | |
|------------------------|--------------------|----------------------|---------------|-----------------|---------------------------------|--------------------------------|-------------------------------|--------------------------|--|
| <u>State</u> | <u>County</u> | | | | | | | | |
| 25 | 4" | 200' | 5 | MT | Rosebud | Sedimentary sandstone and coal | Groundwater observation wells | \$20,000 | Coal hydrology |
| 50 | 4" | 200' | -- | MT | Rosebud | Sedimentary sandstone and coal | Groundwater observation wells | \$60,000 | Drill by cooperator |
| 6 | 4" | 1000' | 5 | MT | Rosebud & Custer | Fort Union Formation | Groundwater observation wells | \$90,000 | Northern Great Plains Regional Aquifer Study |

FY-79 - continued

PROGRAM: High Plains RASA
Project NE 78-041

DIVISION: WRD

REGION: Central

CONTACT: M. J. Ellis, Lincoln, NE

DATE: 6/26/79

GROUPS OF DRILLHOLES

| <u>Number of holes</u> | <u>Final diam.</u> | <u>Average depth</u> | <u>% core</u> | <u>Location</u> | <u>Generalized stratigraphy</u> | <u>Principal objectives</u> | <u>Cost</u> | <u>Other information</u> |
|------------------------|--------------------|----------------------|---------------|-----------------|--------------------------------------|---|-------------|--|
| 4 | 4-5" | 455' | 0 | NE Holt | Surficial wind-blown sand deposits | Collection of data to determine the thickness of the principal aquifer system, and provide a basis for estimating hydraulic conductivities and specific yields of aquifer material. | | Contract has not been awarded, and cost cannot be determined |
| 4 | " | 690' | 0 | NE Rock | Pleistocene sand and gravel deposits | | | |
| 1 | " | 610' | 0 | NE Brown | Cherry | | | |
| 4 | " | 550' | 0 | NE Cherry | Loup | Miocene Ogallala Formation | | |
| 4 | " | 740' | 0 | NE Loup | Blaine | Oligocene Brule Fm. | | |
| 2 | " | 730' | 0 | NE Blaine | Custer | " | | |
| 4 | " | 770' | 0 | NE Custer | Logan | Test holes generally are drilled 20 to 30 feet into the Brule Fm., which is the base of the principal aquifer system. | | |
| 1 | " | 790' | 0 | NE Logan | Lincoln | | | |
| 6 | " | 580' | 0 | NE Lincoln | | | | |

INDIVIDUAL DRILLHOLES

| <u>Hole name or number</u> | <u>Final depth</u> | <u>diam.</u> | <u>Cored intervals</u> | <u>State</u> | <u>Lat</u> | <u>Long</u> | <u>Generalized stratigraphy</u> | <u>Principal objectives</u> | <u>Cost</u> | <u>Start Date</u> | <u>Finish Date</u> |
|----------------------------|--------------------|--------------|------------------------|--------------|------------|-------------|---------------------------------|-----------------------------|-------------|-------------------|--------------------|
| 34 HP 78 | 725' | 8" | None | NE | 41°54.42' | 100°16.09' | Same as above | Same as above | \$2300 | 10/18/78 | 10/19/78 |
| 35 HP 78 | 850' | 8" | " | NE | 41°55.03' | 100°49.25' | " | " | \$2660 | 10/23/78 | 10/25/78 |
| 36 HP 78 | 770' | 5" | " | NE | 42°02.03' | 100°49.01' | " | " | \$2305 | 10/30/78 | 11/1/78 |
| 37 HP 78 | 710' | 4" | " | NE | 41°28.17' | 100°42.50' | " | " | \$2280 | 11/14/78 | 11/15/78 |
| 38 HP 79 | 740' | 4" | " | NE | 41°43.05' | 100°46.12' | " | " | \$2340 | 3/13/79 | 3/14/79 |
| 39 HP 79 | 870' | 5-1/2" | " | NE | 41°34.37' | 100°46.33' | " | " | \$2715 | 3/27/79 | 3/28/79 |
| 40 HP 79 | 825' | 5-1/2" | " | NE | 41°35.15' | 100°18.28' | " | " | \$2575 | 4/3/79 | 4/4/79 |
| 41 HP 79 | 1070' | 5-1/2" | " | NE | 41°18.59' | 101°27.57' | " | " | \$4900 | 4/23/79 | 4/25/79 |
| 42 HP 79 | 580' | 5" | " | NE | 42°14.59' | 102°25.49' | " | " | \$1810 | 4/30/79 | 5/1/79 |
| 43 HP 79 | 890' | 5" | " | NE | 42°21.14' | 102°03.27' | " | " | \$2775 | 5/2/79 | 5/3/79 |
| 44 HP 79 | 740' | 4-5/8" | " | NE | 42°12.22' | 102°14.23' | " | " | \$2635 | 5/7/79 | 5/8/79 |
| 45 HP 79 | 830' | 5-7/8" | " | NE | 42°03.14' | 101°54.58' | " | " | \$2980 | 5/14/79 | 5/15/79 |
| 46 HP 79 | 895' | 5-3/4" | " | NE | 42°11.37' | 101°44.05' | " | " | \$2790 | 5/22/79 | 5/23/79 |
| 47 HP 79 | 900' | 4-5/8" | " | NE | 42°01.48' | 101°24.27' | " | " | \$2810 | 5/30/79 | 5/31/79 |

PROGRAM: Logan County Water Resources

DIVISION: WRD

DISTRICT: North Dakota

CONTACT: R. L. Klausing, Bismarck, ND DATE: 8/27/79

GROUPS OF DRILLHOLES

| <u>Number of holes</u> | <u>Final diam.</u> | <u>Average depth</u> | <u>% core</u> | <u>Location</u> | <u>Generalized stratigraphy</u> | <u>Principal objectives</u> | <u>Cost</u> | <u>Other information</u> |
|------------------------|--------------------|----------------------|---------------|-----------------|---------------------------------|-----------------------------|-------------|--|
| 58 | 1&1/4" | 330' | 0 | ND Logan | Glacial drift | Aquifer delineation | | Estimated Drilling not \$57,000 completed yet. |

FY-79 - continued

PROGRAM: McKenzie County Water Resources DIVISION: WRD DISTRICT: North Dakota CONTACT: M. G. Croft, Bismarck, ND DATE: 5/7/79

GROUPS OF DRILLHOLES

| <u>Number of holes</u> | <u>Final diam.</u> | <u>Average depth</u> | <u>% core</u> | <u>Location</u> | <u>Generalized stratigraphy</u> | <u>Principal objectives</u> | <u>Cost</u> | <u>Other information</u> |
|------------------------|--------------------|----------------------|---------------|-----------------|---------------------------------|-----------------------------|-------------|--------------------------|
| 20 | 1&1/4" | 100' | | ND McKenzie | Glacial drift | Stratigraphy | \$3000 | |

INDIVIDUAL DRILLHOLES

| <u>Hole name or number</u> | <u>Final Depth</u> | <u>diam.</u> | <u>Cored intervals</u> | <u>State</u> | <u>Lat</u> | <u>Long</u> | <u>Generalized stratigraphy</u> | <u>Principal objectives</u> | <u>Cost</u> | <u>Start Date</u> | <u>Finish Date</u> |
|----------------------------|--------------------|--------------|------------------------|--------------|------------|-------------|---------------------------------|-----------------------------|--------------|-------------------|--------------------|
| 1 | 1950' | 4" | | ND | | | McKenzie | Fort Union Formation | Water Supply | \$30,000 | |

PROGRAM: Bottineau-Rolette Counties Water Resources DIVISION: WRD DISTRICT: North Dakota CONTACT: C. A. Armstrong, Bismarck, ND DATE: 8/29/79

GROUPS OF DRILLHOLES

| <u>Number of holes</u> | <u>Final diam.</u> | <u>Average depth</u> | <u>% core</u> | <u>Location</u> | <u>Generalized stratigraphy</u> | <u>Principal objectives</u> | <u>Cost</u> | <u>Other information</u> |
|------------------------|--------------------|----------------------|---------------|----------------------|---|--|-------------|--------------------------|
| 90 | 4.5-4.75 | 200' | | ND Bottineau Rolette | Glacial drift Tertiary Cretaceous | Delineate glacial and bedrock aquifers | \$50,000 | |

PROGRAM: Rattlesnake Butte Hydrology ND79-085 DIVISION: WRD DISTRICT: North Dakota CONTACT: W. F. Horak, Bismarck, ND DATE: 8/27/79

GROUPS OF DRILLHOLES

| <u>Number of holes</u> | <u>Final diam.</u> | <u>Average depth</u> | <u>% core</u> | <u>Location</u> | <u>Generalized stratigraphy</u> | <u>Principal objectives</u> | <u>Cost</u> | <u>Other information</u> |
|------------------------|--------------------|----------------------|---------------|-----------------|---|--|-------------|--------------------------|
| 25 | 5" | 325' | 0 | ND Stark | Fort Union Formation (Paleocene) Sentinel Butte and Tongue River Members | Establish geologic framework and obtain hydrologic information for major shallow aquifers. | \$25,000 | Total of 8,100 ft. |

FY-79 - continued

PROGRAM: Wibaux-Beach Hydrology ND78-082

DIVISION: WRD

DISTRICT: North Dakota

CONTACT: W. F. Horak, Bismarck, ND

DATE: 8/27/79

GROUPS OF DRILLHOLES

| <u>Number of holes</u> | <u>Final diam.</u> | <u>Average depth</u> | <u>\$ core</u> | <u>Location</u> | <u>Generalized stratigraphy</u> | <u>Principal objectives</u> | <u>Cost</u> | <u>Other information</u> |
|------------------------|--------------------|----------------------|----------------|-----------------|---------------------------------|---|---|---------------------------------|
| 48 | 5" | 274' | 0.2 | ND MT | Golden Valley Wibaux | Fort Union Formation (Paleocene) Tongue River and Ludlow Members | Establish geologic framework and obtain groundwater hydrologic information for major shallow aquifers. | \$45,000 Total of 13,100 ft. |

PROGRAM: High Plains RASA

DIVISION: WRD

DISTRICT: South Dakota

CONTACT: H. L. Case, III, Rapid City, SD

DATE: 8/24/79

GROUPS OF DRILLHOLES

| <u>Number of holes</u> | <u>Final diam.</u> | <u>Average depth</u> | <u>\$ core</u> | <u>Location</u> | <u>Generalized stratigraphy</u> | <u>Principal objectives</u> | <u>Cost</u> | <u>Other information</u> |
|------------------------|--------------------|----------------------|----------------|-----------------|---|---|---|--------------------------|
| 13 | 5" | 400' | 0 | SD | Shannon Bennett Washabaugh Todd Tripp | Ogallala FM-unconsolidated sandy gravels, clay | Determine base of high plains aquifer system in So. Dakota | \$18,373 |

PROGRAM:

DIVISION: WRD

DISTRICT: Texas

CONTACT: I. D. Yost, Austin, TX

DATE: 8/29/79

GROUPS OF DRILLHOLES

| <u>Number of holes</u> | <u>Final diam.</u> | <u>Average depth</u> | <u>\$ core</u> | <u>Location</u> | <u>Generalized stratigraphy</u> | <u>Principal objectives</u> | <u>Cost</u> | <u>Other information</u> |
|------------------------|--------------------|----------------------|----------------|-----------------|--|-----------------------------|--|--------------------------|
| 20 | 6&3/4" | 415' | 30 | TX | Carson Crosby Dallam Floyd Gaines Hansford Hartley Hemphill Hutchinson Lipscomb Lynn Moore Ochiltree Potter Roberts Sherman Yoakum | Ogallala | Describe hydraulic characteristics of Ogallala. | \$145,000 |

FY-79 - continued

PROGRAM: Hydrology of Ferron Ss DIVISION: WRD DISTRICT: Utah CONTACT: G. C. Lines, Salt Lake City, UT DATE: 8/27/79

INDIVIDUAL DRILLHOLES

| Hole name or number | Depth | Final diam. | Cored intervals | State | Lat | Long | Generalized stratigraphy | Principal objectives | Cost | Start Date | Finish Date |
|---------------------|-------|-------------|-----------------|-------|-----------|------------|--------------------------|----------------------|---------|------------|-------------|
| 1-1 | 380' | 2&1/2" | 0 | UT | 38°52'24" | 111°14'26" | Ferron Sandstone | Observation well | \$11220 | 11/7/78 | 11/9/78 |
| 1-2 | 150' | " | " | UT | 38°52'24" | 111°14'26" | Member of Mancos | " | \$5695 | 11/9/78 | 11/10/78 |
| 1-3 | 725' | 5" | " | UT | 38°53'00" | 111°15'37" | Shale was drilled on | Hydrologic testing | \$15920 | 11/21/78 | 11/29/78 |
| 1-4 | 1100' | " | " | UT | 38°54'26" | 111°16'08" | all holes. Blue Gate | " | \$19670 | 12/4/78 | 12/13/78 |
| 2-1 | 720' | " | " | UT | 38°50'45" | 111°17'18" | Member of Mancos was | " | \$19874 | 11/20/78 | 11/27/78 |
| 2-3 | 440' | " | " | UT | 38°50'49" | 111°15'31" | also drilled at sites | " | \$15199 | 11/28/78 | 11/29/78 |
| 2-4 | 360' | " | " | UT | 38°51'55" | 111°14'17" | 1-1, 1-2, 1-3, 1-4, 2-1. | " | \$16460 | 12/6/78 | 12/13/78 |

PROGRAM: DIVISION: WRD DISTRICT: Wyoming CONTACT: James R. Marie, Cheyenne, WY DATE: 8/23/79

GROUPS OF DRILLHOLES

| Number of holes | Final diam. | Average depth | % core | Location | Generalized stratigraphy | Principal objectives | Cost | Other information |
|-----------------|-------------|---------------|--------|----------|--------------------------|--------------------------|--|-------------------|
| State | County | | | | | | | |
| 24 | 4&1/2" | 50' | 0 | WY | Platte | Sand & gravel "Tertiary" | Determine Sat. thickness and water level fluctuation | \$4800 |

INDIVIDUAL DRILLHOLES

| Hole name or number | Depth | Final diam. | Cored intervals | State | Lat | Long | Generalized stratigraphy | Principal objectives | Cost | Start Date | Finish Date |
|---------------------|-------|-------------|-----------------|-------|-----------|------------|--|----------------------|--------|-----------------|-------------|
| -- | 400' | 7&7/8" | 0 | WY | 42°06.13' | 105°02.44' | 0-30 sand & gravel 30-400 sandstone | Observation well | \$2700 | Not yet drilled | |
| -- | 760' | 10" to 250' | 0 | WY | 42°07.18' | 104°55.40' | 0-8&1/2 gravel 8&1/2-760 sandstone | " " | \$4100 | 5/14/79 | 5/15/79 |
| -- | 160' | 7&7/8" | 0 | WY | 42°07.10' | 104°19.30' | 0-160 sandstone | " " | \$1200 | 5/20/79 | 5/20/79 |

PROGRAM: Coal Hydrology, AL 76-041 DIVISION: WRD DISTRICT: Alabama CONTACT: W. J. Powell, University, AL DATE: 9/5/79

GROUPS OF DRILLHOLES

| Number of holes | Final diam. | Average depth | % core | Location | Generalized stratigraphy | Principal objectives | Cost | Other information |
|-----------------|-------------|---------------|--------|----------|--------------------------|-----------------------------------|---------------------------------|-------------------|
| State | County | | | | | | | |
| 10 | 2" | 8' | 0 | AL | Tuscaloosa | Cretaceous sand, gravel and clay. | Wells for soil moisture probes. | \$300 |

FY-79 - continued

PROGRAM: FL 195

DIVISION: WRD

DISTRICT: Florida

CONTACT: Michael C. Yurewicz, Tallahassee, FL

DATE: 8/28/79

GROUPS OF DRILLHOLES

| <u>Number of holes</u> | <u>Final diam.</u> | <u>Average depth</u> | <u>% core</u> | <u>Location</u> | <u>Generalized stratigraphy</u> | <u>Principal objectives</u> | <u>Cost</u> | <u>Other information</u> |
|------------------------|--------------------|----------------------|---------------|-----------------|---------------------------------|-----------------------------|-------------|--------------------------|
| 5 or 6 | 4" | 60' | 0 | FL Leon | Oligocene Limestone | Quality of water samples | \$2500 | Contract |

PROGRAM: FL 139, 294

DIVISION: WRD

DISTRICT: Florida

CONTACT: Henry Trapp, Jr., Tallahassee, FL

DATE: 4/30/79

GROUPS OF DRILLHOLES

| <u>Number of holes</u> | <u>Final diam.</u> | <u>Average depth</u> | <u>% core</u> | <u>Location</u> | <u>Generalized stratigraphy</u> | <u>Principal objectives</u> | <u>Cost</u> | <u>Other information</u> |
|------------------------|--------------------|----------------------|---------------|-----------------|---------------------------------|--|-------------|--------------------------|
| 4 | 2" | 400' | 0 | FL Escambia | Tertiary sand | Delineate water bearing zones, determine water levels, water quality | \$6400 | Contract |

PROGRAM: FL 282

DIVISION: WRD

DISTRICT: Florida

CONTACT: Larry R. Hayes, Tallahassee, FL

DATE: 4/30/79

GROUPS OF DRILLHOLES

| <u>Number of holes</u> | <u>Final diam.</u> | <u>Average depth</u> | <u>% core</u> | <u>Location</u> | <u>Generalized stratigraphy</u> | <u>Principal objectives</u> | <u>Cost</u> | <u>Other information</u> |
|------------------------|--------------------|----------------------|---------------|-----------------|---------------------------------|---|-------------|--------------------------|
| 5 | 6" | 150' | 0 | FL Okaloosa | Sand and gravel | Delineate water-bearing zones, and water quality and heads. | \$5000 | Cooperator |
| 11 | 4" | 150' | 0 | FL Okaloosa | Sand and gravel | | \$12000 | Cooperator |
| 2 | 4" | 1500' | 1 | FL Okaloosa | Tertiary | | \$28000 | Cooperator |
| 2 | 6" | 1000' | 0 | FL Walton | Tertiary | | \$8000 | Cooperator |

INDIVIDUAL DRILLHOLES

| <u>Hole name or number</u> | <u>Final depth</u> | <u>diam.</u> | <u>Cored intervals</u> | <u>State</u> | <u>Lat</u> | <u>Long</u> | <u>Generalized stratigraphy</u> | <u>Principal objectives</u> | <u>Cost</u> | <u>Start Date</u> | <u>Finish Date</u> |
|----------------------------|--------------------|--------------|------------------------------|--------------|------------|-------------|-----------------------------------|---|-------------|-------------------|--------------------|
| Field 4 | 1500' | 4" | Bucatunna and lower Floridan | FL | 30°30'13" | 86°35'16" | Tertiary sand, clay and limestone | Delineate water-bearing zones, and water quality and heads. | \$14,000 | 5/7/79 | 5/14/79 |
| Field 2 | 1500' | 4" | Bucatunna and lower Floridan | FL | 30°34'41" | 86°26'39" | Tertiary sand, clay and limestone | Delineate water-bearing zones, and water quality and heads. | \$14,000 | 5/14/79 | 5/21/79 |

FY-79 - continued

PROGRAM: FL 307

DIVISION: WRD

DISTRICT: Florida

CONTACT: Harold C. Mattraw, Jr., Tallahassee, FL DATE: 8/24/79

GROUPS OF DRILLHOLES

| <u>Number of holes</u> | <u>Final diam.</u> | <u>Average depth</u> | <u>% core</u> | <u>Location</u> | <u>Generalized stratigraphy</u> | <u>Principal objectives</u> | <u>Cost</u> | <u>Other information</u> |
|------------------------|--------------------|----------------------|---------------|-----------------|---------------------------------|-----------------------------|--|-------------------------------|
| 4 | 2" | 10' | 100 | FL | Liberty | Surficial sand | | |
| 4 | 2" | 10' | 100 | FL | Gulf | Surficial sand | Water table-surface water interconnection. | \$1000 \$1000 In-house. |

PROGRAM: Water Resources, Lee & Collier Counties

DIVISION: WRD

DISTRICT: Florida

CONTACT: F. A. Watkins, Jr., Fort Meyers, FL

DATE: 8/23/79

GROUPS OF DRILLHOLES

| <u>Number of holes</u> | <u>Final diam.</u> | <u>Average depth</u> | <u>% core</u> | <u>Location</u> | <u>Generalized stratigraphy</u> | <u>Principal objectives</u> | <u>Cost</u> | <u>Other information</u> |
|------------------------|--------------------|----------------------|---------------|-----------------|---------------------------------|-----------------------------|---|--------------------------|
| 10 | 2" | 20' | 0 | FL | Lee | Sand | Water table levels and quality of water samples | \$1000 In-house |

INDIVIDUAL DRILLHOLES

| <u>Hole name or number</u> | <u>Final Depth</u> | <u>diam.</u> | <u>Cored intervals</u> | <u>State</u> | <u>Lat</u> | <u>Long</u> | <u>Generalized stratigraphy</u> | <u>Principal objectives</u> | <u>Cost</u> | <u>Start Date</u> | <u>Finish Date</u> |
|----------------------------|--------------------|--------------|------------------------|--------------|------------|-------------|---------------------------------|---|-------------|-------------------|--------------------|
| L-2901 | 652' | 6" to 4" | 0 | FL | 26°43'09" | 81°40'51" | Sand, clay, limestone | Pilot hole for injection well, well cuttings, geologic logs | \$3172 | 11/21/78 | Plugged |
| L-3224 | 622' | 4" | 0 | FL | 26°43'09" | 81°40'51" | Sand, clay, limestone | Observation well | \$4270 | 4/9/79 | 4/13/79 |
| L-3225 | 620' | 10" | 0 | FL | 26°43'09" | 81°40'51" | " " " | Injection well | \$24000 | 11/21/78 | 3/23/79 |
| C-578 | 260' | 4" | 0 | FL | 26°26'40" | 81°31'01" | " " " | Hydrogeology-drill cuttings | \$4/ft. | 1/16/79 | 1/16/79 |
| C-577 | 390' | 4" | 0 | FL | 26°18'41" | 81°38'32" | " " " | Hydrogeology-drill cuttings | \$4/ft. | 1/15/79 | 1/15/79 |

PROGRAM: DIVISION: WRD DISTRICT: Florida CONTACT: R. L. Knutilla, Tampa, FL DATE: 8/27/79

GROUPS OF DRILLHOLES

| <u>Number of holes</u> | <u>Final diam.</u> | <u>Average depth</u> | <u>% core</u> | <u>Location</u> | <u>Generalized stratigraphy</u> | <u>Principal objectives</u> | <u>Cost</u> | <u>Other information</u> |
|------------------------|--------------------|----------------------|---------------|-----------------|---------------------------------|-----------------------------|-------------------------|--------------------------|
| 73 | 2" | 6' | 0 | FL | Pinellas | Quaternary | Ground water monitoring | \$1500 In-house |

FY-79 - continued

PROGRAM: DIVISION: WRD DISTRICT: Florida CONTACT: E. C. Hayes, Jacksonville, FL DATE: 8/28/79

GROUPS OF DRILLHOLES

| <u>Number of holes</u> | <u>Final diam.</u> | <u>Average depth</u> | <u>% core</u> | <u>Location</u> | <u>Generalized stratigraphy</u> | <u>Principal objectives</u> | <u>Cost</u> | <u>Other information</u> | |
|------------------------|--------------------|----------------------|----------------|-----------------|---------------------------------|-------------------------------------|----------------------------------|--------------------------|------------|
| | | | | <u>State</u> | <u>County</u> | | | | |
| 1 | 6" | 2102' | sampled at 10' | FL | Nassau | Sand-shell-clay-limestone-sandstone | Observation well | \$110,000 | Cooperator |
| 3 | 4" | 44' | intervals | FL | Duval | Sand, shell, clay | Study geology of shallow aquifer | \$500 each | " |
| 1 | 3" | 77' | " | FL | Duval | " " " | " | " | Contract |
| 6 | 2" | 32' | " | FL | Duval | " " " | " | \$100 each | In-house |

INDIVIDUAL DRILLHOLES

| <u>Hole name or number</u> | <u>Final Depth</u> | <u>diam.</u> | <u>Cored intervals</u> | <u>State</u> | <u>Lat</u> | <u>Long</u> | <u>Generalized stratigraphy</u> | <u>Principal objectives</u> | <u>Cost</u> | <u>Start Date</u> | <u>Finish Date</u> |
|----------------------------|--------------------|--------------|------------------------|--------------|------------|-------------|--------------------------------------|---|-------------|-------------------|--------------------|
| Nassau Test Well | 2102' | 6" | | FL | 30°39'58" | 81°28'04" | Sand-shell-clay-limestone-sandstone | Observation well | \$110,000 | 11/8/78 | 3/1/79 |
| M-5 | 77' | 3" | Sampled at 10' | FL | 30°23'30" | 81°24'00" | Unconsolidated sand, shell, and clay | Study shallow aquifer geology and hydrology | \$500 | 3/19/79 | 3/19/79 |
| M-7 | 44' | 4" | intervals | FL | " | " | " " " | " | " | 3/27/79 | 3/27/79 |
| M-8 | 55' | 4" | | FL | " | " | " " " | " | " | " | " |
| M-10 | 33' | 3" | " | FL | " | " | " " " | " | " | 3/28/79 | 3/28/79 |

PROGRAM: DIVISION: WRD DISTRICT: Florida CONTACT: Albert M. LaSala, Jr., Miami, FL DATE: 8/31/79

GROUPS OF DRILLHOLES

| <u>Number of holes</u> | <u>Final diam.</u> | <u>Average depth</u> | <u>% core</u> | <u>Location</u> | <u>Generalized stratigraphy</u> | <u>Principal objectives</u> | <u>Cost</u> | <u>Other information</u> | |
|------------------------|--------------------|----------------------|---------------|-----------------|---------------------------------|-----------------------------|---------------------------------------|--------------------------|------------|
| | | | | <u>State</u> | <u>County</u> | | | | |
| 12 | 2" | 200' | -- | FL | Dade | Sand, sandstone, limestone | Delineate lithology and water quality | \$24000 | In-house |
| 5 | 2-4" | 50' | 100 | FL | Dade | " | " | \$4500 | " |
| 15 | 2" | 75' | 65 | FL | Broward | Sand, sandstone | Water quality monitoring | \$11250 | " |
| 4 | 4" | 250' | 40 | FL | Hendry | Sand, clay, limestone | Delineate lithology | \$10000 | " |
| 30 | 2" | 200' | -- | FL | Palm Beach | Sand, sandstone, limestone | Lithology | \$88000 | Cooperator |
| 22 | 2" | 150' | -- | FL | Palm Beach | " | Water quality | \$33000 | In-house |
| 9 | 4" | 150' | -- | FL | Palm Beach | " | Aquifer testing | \$20000 | Contract |
| 10 | 4" | 100' | -- | FL | St. Lucie | " | " | \$30000 | " |

FY-79 - continued

PROGRAM: DIVISION: WRD DISTRICT: Georgia CONTACT: H. E. Gill, Doraville, GA DATE: 8/28/79

GROUPS OF DRILLHOLES

| <u>Number of holes</u> | <u>Final diam.</u> | <u>Average depth</u> | <u>% core</u> | <u>Location</u> | <u>Generalized stratigraphy</u> | <u>Principal objectives</u> | <u>Cost</u> | <u>Other information</u> | |
|------------------------|--------------------|----------------------|---------------|-----------------|---------------------------------|-----------------------------|------------------------------|--------------------------|----------------------|
| 10 | 4" or 6" | 100-200' | -- | GA | Several in Dougherty Plain | Upper Eocene | Hydrology of Dougherty Plain | \$10,000 | Drilling by contract |

INDIVIDUAL DRILLHOLES

| <u>Hole name or number</u> | <u>Depth</u> | <u>Final diam.</u> | <u>Cored intervals</u> | <u>State</u> | <u>Lat</u> | <u>Long</u> | <u>Generalized stratigraphy</u> | <u>Principal objectives</u> | <u>Cost</u> | <u>Start Date</u> | <u>Finish Date</u> |
|----------------------------|--------------|--------------------|------------------------|--------------|------------|-------------|---------------------------------|-----------------------------|-------------|-------------------|--------------------|
| Ocala No. 2 @ Miller | 105' | 4" | -- | GA | 31°35'51" | 84°04'40" | Upper Eocene | Hydrology of Albany area | \$1,000 | 4/79 | 4/79 |
| Ocala No. 3 @ Miller | 105' | 4" | -- | GA | 31°36'09" | 84°04'35" | Upper Eocene | " | \$1,000 | 4/79 | 4/79 |
| USGS TW 10 | 1347' | 6" | -- | GA | 31°35'34" | 84°10'30" | Upper Eocene - Upper Cretaceous | " | \$65,000 | 9/78 | 12/78 |

PROGRAM: DIVISION: WRD DISTRICT: Kentucky CONTACT: Philip A. Emery, Louisville, KY DATE: 8/23/79

GROUPS OF DRILLHOLES

| <u>Number of holes</u> | <u>Final diam.</u> | <u>Average depth</u> | <u>% core</u> | <u>Location</u> | <u>Generalized stratigraphy</u> | <u>Principal objectives</u> | <u>Cost</u> | <u>Other information</u> | |
|------------------------|--------------------|----------------------|---------------|-----------------|---------------------------------|-----------------------------|--------------------------|--------------------------|------------|
| 14 | 4" | 50' | -- | KY | Livingston | Glacial outwash - alluvium | Lithology - water levels | \$800ea. | Cooperator |
| 18 | 1&1/2" | 100' | -- | KY | Jefferson | " | " | \$600ea. | In-house |

PROGRAM: Atlantic Coastal Plain Waste Storage DIVISION: WRD DISTRICT: North Carolina CONTACT: P. M. Brown, Raleigh, NC DATE: 8/28/79

GROUPS OF DRILLHOLES

| <u>Number of holes</u> | <u>Final diam.</u> | <u>Average depth</u> | <u>% core</u> | <u>Location</u> | <u>Generalized stratigraphy</u> | <u>Principal objectives</u> | <u>Cost</u> | <u>Other information</u> | |
|------------------------|--------------------|----------------------|---------------|-----------------|------------------------------------|------------------------------|-------------------|--------------------------|--|
| 7 | 2" | 140' | 90 | NC | Pender New Hanover Brunswick | Cenozoic - Mesozoic contacts | Structure control | \$8,200 | USGS equipment March 16-April 10, 1979 |

FY-79 - continued

PROGRAM: DIVISION: WRD DISTRICT: Caribbean CONTACT: James E. Heisel, San Juan, PR DATE: 5/9/79

GROUPS OF DRILLHOLES

| Number of holes | Final diam. | Average depth | % core | Location | Generalized stratigraphy | Principal objectives | Cost | Other information | |
|-----------------|-------------|---------------|--------|----------|--------------------------|-------------------------|-------------------------------|-------------------|------------|
| | | | | State | County | | | | |
| 10 | 4" | 100' | 20 | PR | Vega Baja | Alluvium over limestone | Exploratory-observation wells | \$2000 | Cooperator |

PROGRAM: Hydrology Carbonate Aquifers--Dandridge DIVISION: WRD DISTRICT: Tennessee CONTACT: Pat Hollyday, Nashville, TN DATE: 8/22/79

GROUPS OF DRILLHOLES

| Number of holes | Final diam. | Average depth | % core | Location | Generalized stratigraphy | Principal objectives | Cost | Other information | |
|-----------------|---------------|---------------|--------|----------|--------------------------|---------------------------------|--------------------------------------|-------------------|---|
| | | | | State | County | | | | |
| 7 | 2 @ 8" | 280' | 0 | TN | Jefferson | Cambro Ordovician Knox Dolomite | Hydrologic Investigation - test hole | \$17000 | Contracted by cooperator, Town of Dandridge |
| | 3 @ 6-1/4" | | | | | | | | |
| | 2 back-filled | | | | | | | | |

PROGRAM: DIVISION: WRD REGION: Northeast CONTACT: John A. Baker, Reston, VA DATE: 5/4/79

GROUPS OF DRILLHOLES

| Number of holes | Final diam. | Average depth | % core | Location | Generalized stratigraphy | Principal objectives | Cost | Other information | |
|-----------------|-------------|---------------|--------|----------|--------------------------|-------------------------------|---|-------------------|----------------|
| | | | | State | County | | | | |
| 18 | 4" | 280' | 0 | MN | Big Stone | Drift & Cretaceous Shale | Water level, quality of water, Transmissivity & Storage coefficient | \$12600 | 10/1-30/78 |
| 5 | 4" | 90' | 0 | MN | Hennepin | Drift & Platteville Limestone | Water level, quality of water, stratigraphy | \$5700 | 1/1-4/15/79 |
| 2 | 5" | 60' | 100 | MN | Hennepin | Drift | " | \$2300 | 10/1-30/78 |
| | | 80' | 25 | MN | Hennepin | " | " | | included above |
| 25 | 4" | 70' | 0 | MN | Hennepin | Drift & upper bedrock | " | \$37500 | 6/15-9/30/79 |
| 20 | 5" | 80' | 90 | MN | Hennepin | " | " | \$30000 | 7/1-9/3/79 |
| 10 | 4" | 150' | 0 | MN | Ottertail | Drift | " & T&S | \$8000 | 9/1-30/79 |
| 12 | 4" | 200' | 0 | MN | Beltrami | Drift & peat | " " | \$12000 | 8/1-9/30/79 |
| 4 | 2" | 50' | 0 | IN | Madison | Glacial drift or outwash | Water levels | \$1000 | 10/2-6/78 |
| 9 | 2" | 185' | 0 | IN | Madison | " | Stratigraphy and water level | \$10500 | 10/30-11/9/78 |
| 5 | 2" | 30' | 0 | IN | Kosciusko | " | Water level | \$1300 | 10/10-13/78 |

FY-79 - continued

GROUPS OF DRILLHOLES (continued)

| <u>Number of holes</u> | <u>Final diam.</u> | <u>Average depth</u> | <u>% core</u> | <u>Location</u> | <u>Generalized stratigraphy</u> | <u>Principal objectives</u> | <u>Cost</u> | <u>Other information</u> |
|------------------------|--------------------|----------------------|---------------|-----------------|---------------------------------|-----------------------------|---|--------------------------|
| 25 | 2" | 60' | 0 | IN | Newton & Jasper | Glacial drift or outwash | Stratigraphy and water level | \$2900 |
| 16 | 2" | 185' | 0 | IN | Northwest Elkhart | " | Stratigraphy, water level, and quality of water | \$17600 |
| 2 | 2" | 160' | 0 | IN | " | " | Sed. sample | \$2000 |
| 5 | 2" | 40' | 0 | IN | " | " | Test hole quality of water | \$1200 |
| 9 | 2" | 60' | 0 | IN | Knox | " | Quality of water-CI | \$1900 |
| 20 | 2" | 50' | 0 | IN | Northern Porter | " | Water level | \$3700 |
| 88 | 4" | 160' | 0 | IN | " | " | Stratigraphy, water level, quality of water | \$110000 |
| 90 | 2" | 75' | 0 | IN | Morgan & Johnson | " | " | \$25000 |

PROGRAM: DIVISION: WRD REGION: Northeast CONTACT: Helgesen - John A. Baker, Reston, VA DATE: 5/4/79

GROUPS OF DRILLHOLES

| <u>Number of holes</u> | <u>Final diam.</u> | <u>Average depth</u> | <u>% core</u> | <u>Location</u> | <u>Generalized stratigraphy</u> | <u>Principal objectives</u> | <u>Cost</u> | <u>Other information</u> |
|------------------------|--------------------|----------------------|---------------|-----------------|---------------------------------|-----------------------------|-------------------------------|--------------------------|
| 7 | 6" | 97' | 0 | OH | Guernsey | Shale, sandstone, coal | Observation well water level | \$7200 |
| 10 | 4" | 50' | 0 | OH | Vinton | Sandstone, shale, coal | Quality of water, water level | \$3300 |

INDIVIDUAL DRILLHOLES

| <u>Hole name or number</u> | <u>Final depth</u> | <u>diam.</u> | <u>Cored intervals</u> | <u>State</u> | <u>Lat</u> | <u>Long</u> | <u>Generalized stratigraphy</u> | <u>Principal objectives</u> | <u>Cost</u> | <u>Start Date</u> | <u>Finish Date</u> |
|----------------------------|--------------------|--------------|------------------------|--------------|------------|-------------|---------------------------------|-----------------------------|-------------|-------------------|--------------------|
| GU-200 | 79' | 16" | 0 | OH | 39°58'56" | 81°29'52" | Shale, sandstone, coal | Test pumping | \$3500 | 11/16/78 | 11/24/78 |

PROGRAM: DIVISION: WRD REGION: Northeast CONTACT: John A. Baker, Reston, VA DATE: 5/4/79

GROUPS OF DRILLHOLES

| <u>Number of holes</u> | <u>Final diam.</u> | <u>Average depth</u> | <u>% core</u> | <u>Location</u> | <u>Generalized stratigraphy</u> | <u>Principal objectives</u> | <u>Cost</u> | <u>Other information</u> |
|------------------------|--------------------|----------------------|---------------|-----------------|---|-----------------------------|---------------------------|--------------------------|
| 26 | 2" | 22-77' | 10 | CT | Litchfield New Haven New London New London | Glacial outwash | Water level, stratigraphy | \$7800 |
| 30 | 2" | 70' | 20 | CT | " | " | \$9000 | |
| 2 | 6" | 60' | 0 | NY | Albany | Sand | Water level | \$4000 |

FY-79 - continued

GROUPS OF DRILLHOLES (continued)

PROGRAM: California Desert Study DIVISION: Conservation CONTACT: Jack Crowley, Menlo Park, CA

DATE: 5/24/79

INDIVIDUAL DRILLHOLES

| <u>Hole name or number</u> | <u>Final Depth</u> | <u>Diam.</u> | <u>Cored intervals</u> | <u>State</u> | <u>Lat</u> | <u>Long</u> | <u>Generalized stratigraphy</u> | <u>Principal objectives</u> | <u>Cost</u> | <u>Start Date</u> | <u>Finish Date</u> |
|----------------------------|--------------------|--------------|------------------------|--------------|------------|-------------|---|--|-------------|-------------------|--------------------|
| FL 1 | 335' | 5" | R.C.O. | CA | 36°15'15" | 116°022'08" | Lacustrine sediments | Evaluation and classification of the California Desert | 7/78 | 7/78 | |
| EKV-1 | 335' | 5" | " | CA | 37°06'36" | 117°042'13" | | Conservation area and for leasable minerals | 7/78 | 7/78 | |
| SV-3 | 230' | 5" | " | CA | 36°42'35" | 117°049'22" | | | 11/78 | 11/78 | |
| SV-4A | 315' | 5" | " | CA | 36°42'01" | 117°047'26" | Lacustrine sediments and chemical salts | " | 12/78 | 12/78 | |
| SV-5A | 135' | 5" | " | CA | 36°42'50" | 117°046'47" | | " | 12/78 | 12/78 | |

FY-79 - continued

PROGRAM: California Desert Study

DIVISION: Conservation

REGION: Western

CONTACT: Roger Dockter, Menlo Park, CA

DATE: 8/22/79

INDIVIDUAL DRILLHOLES

| <u>Hole name or number</u> | <u>Depth</u> | <u>Final diam.</u> | <u>Cored intervals</u> | <u>State</u> | <u>Lat</u> | <u>Long</u> | <u>Generalized stratigraphy</u> | <u>Principal objectives</u> | <u>Cost</u> | <u>Start Date</u> | <u>Finish Date</u> |
|----------------------------|--------------|--------------------|---|--------------|------------|-------------|---|------------------------------------|-------------|-------------------|--------------------|
| K-1 | 515' | 5" | Reverse circulation air-drill cuttings collected at all intervals | CA | 35°19'45" | 117°53'01" | 515' clay with thin beds of saline minerals | Saline mineral resource evaluation | \$3420 | 12/78 | 12/78 |
| K-2 | 447.5' | 5" | " | CA | 35°19'46" | 117°54'18" | 447.5' clay | " | \$3116 | 12/78 | 12/78 |
| K-3 | 335' | 5" | " | CA | 35°18'22" | 117°53'19" | 312' clay with few thin tuff ? layers 312-335 sand & clay beds | " | \$1520 | 12/78 | 12/78 |
| K-4 | 400' | 5" | " | CA | 35°19'24" | 117°52'23" | 400' clay | " | \$1575 | 12/78 | 12/78 |
| K-5 | 435' | 5" | " | CA | 35°20'59" | 117°52'09" | 374' clay, 374-435 interbedded sand and clay. Sand contains saline brine. | " | \$2508 | 12/78 | 12/78 |

PROGRAM:

DIVISION: Conservation AREA OR OFFICE:

CONTACT: See Other Information below

DATE: 5/31/79

GROUPS OF DRILLHOLES

| <u>Number of holes</u> | <u>Final diam.</u> | <u>Average depth</u> | <u>% core</u> | <u>Location</u> | <u>Generalized stratigraphy</u> | <u>Principal objectives</u> | <u>Cost</u> | <u>Other information</u> |
|------------------------|--------------------|----------------------|---------------|-----------------|---------------------------------|---|-------------|--|
| 2 | | 500' | 2 | CO | | Coal evaluation--short-term lease application | | USGS drill rig 750' rotary 12' coring Contact: Gary W. Stuckley# |
| 2 | | 600' | 1 | | | Coal evaluation--short-term lease application | | USGS drill rig 1200' rotary 10' coring Contact: Gary W. Stuckley# |

#All in Denver, CO.

FY-79 - continued

GROUPS OF DRILLHOLES (continued)

| <u>Number of holes</u> | <u>Final diam.</u> | <u>Average depth</u> | <u>% core</u> | <u>Location</u> | <u>Generalized stratigraphy</u> | <u>Principal objectives</u> | <u>Cost</u> | <u>Other information</u> |
|------------------------|--------------------|----------------------|---------------|--------------------|---------------------------------|---|-------------|---|
| 4 | 1630' | 3 | CO | Rio Blanco | Trout Creek Sandstone | Coal evaluation--short-term lease application | | 1 or 2 holes twinned USGS drill rig 6522' rotary 200' coring Contact: Gary W. Stuckley* |
| 4-5 | 1000' | 0 | CO | Gunnison | Mesa Verde Fm. | Coal exploration to define KRCRA | | USGS drill rig 4500' rotary Tentative Contact: Dave Gaskill* |
| 7 | 800' | 0 | WY | Carbon | Hanna Fm. | Coal evaluation--lease application | | USGS drill rig 5800' rotary Tentative Contact: Tim Timmons* |
| 8 | 1333' | 0 | UT | San Pete Emery | Star Point Ss. & Blackhawk Fm. | Coal evaluation | | 10,500' rotary Contract Contact: Gene Ellis* |
| 34 | 1292' | 6 | UT | San Pete Sevier | Star Point Ss. & Blackhawk Fm. | Coal evaluation | | Contract 41,060' rotary 2,815' coring Contact: Howard Albee* |

*All in Denver, CO.

| PROGRAM: | DIVISION: Conservation | OFFICE: Farmington | CONTACT: Russell Jentgen, Denver, CO | DATE: |
|-----------------------------|------------------------|----------------------|--------------------------------------|----------------------|
| <u>GROUPS OF DRILLHOLES</u> | | | | |
| <u>Number of holes</u> | <u>Final diam.</u> | <u>Average depth</u> | <u>% core</u> | <u>Location</u> |
| ? | 1000' | ? | NM | ? |
| | | | | Fruitland Coal |
| | | | | Coal data collection |
| | | | | Contract? |

FY-79 - continued

PROGRAM: DIVISION: Conservation AREA: Northern Rocky Mtn. CONTACT: See Other Information below DATE: 5/31/79

GROUPS OF DRILLHOLES

| <u>Number of holes</u> | <u>Final diam.</u> | <u>Average depth</u> | <u>% core</u> | <u>Location</u> | <u>Generalized stratigraphy</u> | <u>Principal objectives</u> | <u>Cost</u> | <u>Other information</u> |
|------------------------|--------------------|----------------------|---------------|--------------------|---------------------------------|---------------------------------------|-------------|---|
| 2 | 550' | 0 | WY | Campbell | | Coal correlation | | USGS drill rig 1100' rotary Contact: Ken Bowen* |
| 2 | 600' | 0 | MT | Bighorn | | Coal information--resource evaluation | | Contract 1465' rotary Contact: Steven Volz (Montana Bureau Mines and Geology) |
| 53 | 643' | 4 | MT | Bighorn Rosebud | | Coal correlation--resource evaluation | | Contract 34,750' rotary 1340' coring Contact: Robert Matson and V. Niermeier (Montana Bureau of Mines and Geology) |
| 12 | 725' | 0 | WY | Converse | | Coal correlation--update KRCRA | | USGS drill rig 8700' rotary Contact: Frank B. Kistner* |
| 4 | 450' | 0 | WY | Campbell | | Determine coal occurrence | | USGS drill rig 1800' rotary Contact: Robert A. Katoch or Frank B. Kistner* |
| 9 | 425' | 4 | WY | | | Coal resource evaluation | | 3800' rotary 170' core USGS drill rig Contact: Frank B. Kistner or James D. Williams* |
| 3 | 620' | 0 | WY | Campbell | | Coal resource evaluation | | USGS drill rig 1860' rotary Contact: Frank B. Kistner or Elmer M. Schell* |

*Denver, CO

FY-79 - continued

GROUPS OF DRILLHOLES (continued)

| <u>Number of holes</u> | <u>Final diam.</u> | <u>Average depth</u> | <u>% core</u> | <u>Location</u> | <u>Generalized stratigraphy</u> | <u>Principal objectives</u> | <u>Cost</u> | <u>Other information</u> |
|------------------------|--------------------|----------------------|---------------|-----------------|-------------------------------------|-----------------------------|-------------|---|
| | | | | <u>State</u> | <u>County</u> | | | |
| 8 | | 340' | 0 | WY | Felix, Anderson, & Wyodak coal beds | Top and thickness of coals | | USGS drill rig 2720' rotary Contact: Lee H. Jefferis or Frank B. Kistner* |
| 27 | | 517' | .7 | ND | Williams | Fort Union lignites | | Contract? 13980' rotary 100' coring Contact: John Spencer* |
| 150 | | 420' | .3 | ND | Dunn Stark Billings | Fort Union Fm. | | 63,100' rotary 160' coring Contact: Michael Menge* |
| 32 | | 318' | .5 | ND | Mountail | Fort Union Fm. | | 10,180' coring 50' core Contact: John Spencer* |
| 17 | | 478' | .2 | ND | Ward | Fort Union Fm. | | 8,140' rotary 20' core Contact: Susan M. Cook* |
| 67 | | 395' | .4 | ND | Divide | Fort Union Fm. | | 26,440' rotary 100' core Contact: John M. Spencer* |
| 77 | | 440' | .6 | ND | Williams | Fort Union Fm. | | Contact: John M. Spencer* |
| 31 | | 465' | .3 | ND | Ward | Fort Union Fm. | | 14,400' rotary 40' core Contract (FY-78) Contact: Susan M. Cook* |
| 5 | | 624' | 0 | ND | Mountail | Fort Union Fm. | | 3120' rotary Contract (FY-78) Contact: Susan M. Cook* |

*Denver, CO.

FY-79 - continued

GROUPS OF DRILLHOLES (continued)

| <u>Number of holes</u> | <u>Final diam.</u> | <u>Average depth</u> | <u>% core</u> | <u>Location</u> | <u>Generalized stratigraphy</u> | <u>Principal objectives</u> | <u>Cost</u> | <u>Other information</u> |
|------------------------|--------------------|----------------------|---------------|-----------------|---------------------------------|---|--|---|
| | | | | <u>State</u> | <u>County</u> | | | |
| 3 | | 280' | 0 | ND | Renville | Fort Union Fm. | | 840' rotary Contract (FY-78) Contact: Susan M. Cook* |
| 62 | | 400' | .2 | MT | Roosevelt | | Identification of coal beds | 25,000' rotary 120' core Contact: Mary Alice Spencer* Contract |
| 55 | | 400' | 0 | MT | McCone Prairie Dawson | Section through Tongue River Member of Ft. Union Fm. | KRCRA establishment and evaluation | 20,360' rotary Contact: Herbert Wincentsen* |
| 24 | | 285' | 0 | MT | Dawson Wibaux | Fort Union Fm. | Evaluation of nominated areas and KRCRA established | 6,850' rotary Contract (FY-78) Contact: Robert Matson (Montana Bureau of Mines and Geology) |
| 46 | | 282' | .4 | MT | Richland Wibaux Dawson | Tongue River Coals | Evaluate Sidney KRCRA | 17,000' rotary 60' core Contract Contact: Robert Matson (Montana Bureau of Mines and Geology) |
| 16 | | 300' | ? | MT | Musselshell | | Establish KRCRA boundary and evaluate | 6000' rotary ? coring Contract (FY-78) Contact: Robert Matson (Montana Bureau of Mines and Geology) |
| 62 | | 407' | .5 | MT | Roosevelt | Fort Union Fm. | Coal evaluation | 25,000' rotary 120' core Contact: Mary Alice Spencer* Contract |

#Denver, CO.

FY-79 - continued

PROGRAM: Black Warrior Coal
Basin, Phase I

DIVISION: Conservation

REGION: Eastern

CONTACT: Orrin Gilbert, Washington, D.C.

DATE: 4/30/79

INDIVIDUAL DRILLHOLES

| <u>Hole name or number</u> | <u>Final Depth</u> | <u>Cored diam.</u> | <u>Cored intervals</u> | <u>State</u> | <u>Section, Township, & Range</u> | <u>Generalized stratigraphy</u> | <u>Principal objectives</u> | <u>Cost</u> | <u>Start Date</u> | <u>Finish Date</u> |
|--------------------------------|------------------------|------------------------|----------------------------|--------------|---|-------------------------------------|---------------------------------|-------------|-----------------------|------------------------|
| 1 | 2075' | 1&7/8" | 100% | AL | 14-19S, 9W | Pottsville Formation | Purpose is to assess coal | \$18675 | | |
| 2 | 2095' | " | " | AL | 35-18S, 9W | (Pennsylvanian): | resources on Federal lands | \$18855 | | |
| 3 | 2130' | " | " | AL | 24-18S, 9W | alternating shales, | (Federal ownership of coal | \$19170 | | |
| 4 | 1725' | " | " | AL | 5-18S, 8W | sandstones, and coal | resources). For pre-lease | \$15525 | | |
| 5 | 2005' | " | " | AL | 32-18S, 9W | (minor limestones). | sale evaluation. Mary Lee | \$18045 | | |
| 6 | 2030' | " | " | AL | 24-18S, 10W | " | coal bed | \$18270 | | |
| 7 | 1750' | " | " | AL | 6-18S, 9W | " | " | \$15750 | | |
| 8 | 1600' | " | " | AL | 17-17S, 9W | " | " | \$14400 | | |
| 9 | 1505' | " | " | AL | 9-17S, 10W | " | " | \$13545 | | |
| 10 | 1200' | " | " | AL | 22-16S, 10W | " | " | \$10800 | | |
| 11 | 1310' | " | " | AL | 32-16S, 9W | " | " | \$11790 | | |
| 12 | 1280' | " | " | AL | 12-16S, 9W | " | " | \$11520 | | |
| 13 | 1270' | " | " | AL | 17-16S, 9W | " | " | \$11430 | | |
| 14 | 810' | " | " | AL | 25-15S, 10W | " | " | \$7290 | | |
| 15 | 700' | " | " | AL | 9-15S, 10W | " | " | \$6300 | | |
| 16 | 670' | " | " | AL | 36-14S, 10W | " | " | \$6030 | | |
| 17 | 550' | " | " | AL | 13-14S, 10W | " | Mary Lee and Black Creek | \$4950 | | |
| 18 | 660' | " | " | AL | 28-14S, 10W | " | " | \$5940 | | |
| 19 | 620' | " | " | AL | 23-14S, 11W | " | " | \$5580 | | |
| 20 | 630' | " | " | AL | 5-14S, 10W | " | " | \$5670 | | |
| 21 | 425' | " | " | AL | 33-13S, 11W | " | " | \$3825 | | |
| 22 | 500' | " | " | AL | 36-12S, 11W | " | " | \$4500 | | |
| 23 | 610' | " | " | AL | 21-12S, 10W | " | " | \$5490 | | |

PROGRAM: National Petroleum Reserve in Alaska

DIVISION: Director's Office

CONTACT: R. D. Carter, Menlo Park, CA

DATE: 8/22/79

INDIVIDUAL DRILLHOLES

| <u>Hole name or number</u> | <u>Final Depth</u> | <u>Cored diam.</u> | <u>Cored intervals</u> | <u>State</u> | <u>Lat</u> | <u>Long</u> | <u>Generalized stratigraphy</u> | <u>Principal objectives</u> | <u>Cost</u> | <u>Start Date</u> | <u>Finish Date</u> |
|--------------------------------|------------------------|------------------------|---|--------------|------------|-------------|--|---------------------------------|-------------|-----------------------|------------------------|
| South Meade #1 | 9945' | 8&1/2" | 3010-3020.5 4010-4020 4950-4961 5992-6002.5 7500-7504 8489-8519 8819-8873 9040-9059 9305-9328 | AK | 70°36'54" | 156°53'24" | Quat. - Tertiary Cretaceous Jurassic Triassic Permian Miss-Penn (Carb.) Pre-Miss. basement | Test well | | 2/7/78 | 1/22/79 |

FY-79 - continued

INDIVIDUAL DRILLHOLES (continued)

| <u>Hole name or number</u> | <u>Depth</u> | <u>Final diam.</u> | <u>Cored intervals</u> | <u>State</u> | <u>Lat</u> | <u>Long</u> | <u>Generalized stratigraphy</u> | <u>Principal objectives</u> | <u>Cost</u> | <u>Start Date</u> | <u>Finish Date</u> |
|----------------------------|--------------|--------------------|---|--------------|------------|-------------|--|-----------------------------|-------------|-------------------|--------------------|
| Inigok #1 | 20102' | 6&1/4" | 2632-2662 3072-3082 4206-4216 5000-5010 7054-7064 8210-8240 8842-8852 9338-9348 9448-9458 10295-10305 10998-11008 11704-11714 12273-12283 12500-12530 12705-12735 13480-13510 13831-13880 14020-14066 15185-15215 16185-16198 17053-17083 19360-19372 20091-20102 | AK | 70°00'18" | 153°05'57" | Quat. - Tertiary Cretaceous Jurassic Triassic Permo-Triassic Miss-Penn (Carb.) Mississippian | Test well | | 6/7/78 | 5/22/79 |
| Tunalik #1 | 15408' | 6&1/4" | 2651-2654' 3280-3308 3820-3830 5552-5562 6504-6514 7870-7880 8782-8810 10472-10502 10671-10702 10910-10940 11672-11694 12567-12597 | AK | 70°12'22" | 161°04'09" | Quat. - Tertiary Cretaceous Jurassic Triassic Permo-Triassic Miss.-Penn. (Carb.) Pre-Devonian basement | Test well | | 11/10/78 | -- |

FY-79 - continued

INDIVIDUAL DRILLHOLES (continued)

| <u>Hole name or number</u> | <u>Depth</u> | <u>Final diam.</u> | <u>Cored intervals</u> | <u>State</u> | <u>Lat</u> | <u>Long</u> | <u>Generalized stratigraphy</u> | <u>Principal objectives</u> | <u>Cost</u> | <u>Start Date</u> | <u>Finish Date</u> |
|----------------------------|-----------------|--------------------------------|---|--------------|------------|-------------|---|-----------------------------|-------------|-------------------|---|
| Peard #1 | 10225' | 8&1/2" | 3034.5-3065 4278-4294 5409-5421 5906-5916.4 6119-6129.4 6403-6413 7837-7868 8275-8289.5 8451-8481 8977-9008 9490-9520 10215-10225 | AK | 70°42'56" | 159°00'03" | Quat. - Tertiary Cretaceous Jurassic Triassic Permo-Triassic Permian Pre-Devonian basement | Test well | | 1/26/79 | 4/13/79 |
| East Simpson #1 | 7739' | 8&1/2" | 2674.5-2685 5120-5130 6810-6870 6898-6922 7426-7436 7564-7593 7729-7739 | AK | 70°55'02" | 154°36'43" | Quat. - Tertiary Cretaceous Jurassic Triassic Permo-Triassic Miss.-Penn. (Carb.) Mississippian Pre-Devonian basement | Test well | | 2/19/79 | 4/10/79 |
| Ikpikpuk #1 | 14210' | 7" liner (suspended status) | 2930-2960' 9528-14208 3784-3812 5690-5700 7132-7143 7368-7378 7491-7501 10270-10300 10619-10649 10815-10842 11108-11135 11718-11733 12743-12753 | AK | 70°27'20" | 154°19'53" | Quat. - Tertiary Cretaceous Jurassic Triassic Permo-Triassic Miss.-Penn. (Carb.) Devonian (?) Pre-Devonian basement | Test well | | 11/28/78 | Sus- pended 4/17/79 (Will re-enter) |
| Lisburne #1 | 15500' proposed | 8&1/2" | 1554-1558.7 2075-2090.5 2990-3000 3900-3910 5340-5356 6215-6225 | AK | 68°29'05" | 155°41'33" | Cretaceous ? Miss.-Penn. (Carb.) Pre-Miss. (?) | Test well | | 6/11/79 | -- |
| J. W. Dalton #1 | 8800' proposed | 8&1/2" | 3500-3530 4667-4697 5603-5633 6585-6615 7524-7534 7967-8021 | AK | 70°55'14" | 153°08'15" | Tertiary Cretaceous Jurassic Triassic Permo-Triassic Permian | Test well | | 5/7/79 | 8/1/79 |

FY-79 - continued

INDIVIDUAL DRILLHOLES (continued)

| <u>Hole name or number</u> | <u>Depth</u> | <u>Final diam.</u> | <u>Cored intervals</u> | <u>State</u> | <u>Lat</u> | <u>Long</u> | <u>Generalized stratigraphy</u> | <u>Principal objectives</u> | <u>Cost</u> | <u>Start Date</u> | <u>Finish Date</u> |
|----------------------------|--------------|--------------------|------------------------|--------------|------------|-------------|---------------------------------|-----------------------------|-------------|-------------------|--------------------|
| | | | 8021-8081 | | | | Miss.-Penn. (Carb.) | | | | |
| | | | 8081-8113 | | | | Pre-Devonian basement | | | | |
| | | | 8113-8139.5 | | | | | | | | |
| | | | 8140-8200 | | | | | | | | |
| | | | 8317-8345 | | | | | | | | |
| | | | 8515-8543.5 | | | | | | | | |
| | | | 9357-9367 | | | | | | | | |
| Seabee #1 | 15500' | 8&1/2" | 5390-5402 | AK | 69°22'49" | 152°10'31" | Cretaceous | Test well | | 7/1/79 | -- |
| | proposed | | | | | | | | | | |

PROGRAM: USGS Geotechnical DIVISION: Conservation REGION: Western
Investigation, Beaufort Sea, 1979

CONTACT: Gerald Shearer, Anchorage, AK

DATE: 8/27/79

GROUPS OF DRILLHOLES

| <u>Number of holes</u> | <u>Final diam.</u> | <u>Average depth</u> | <u>% core</u> | <u>Location</u> | <u>Generalized stratigraphy</u> | <u>Principal objectives</u> | <u>Cost</u> | <u>Other information</u> |
|------------------------|--------------------|----------------------|---------------|-----------------|---------------------------------|-----------------------------|--|-------------------------------------|
| 16 | 4" | 100' | 10-20 | AK | Beaufort Sea | Silt, sand, and gravel | Geotechnical properties, depth to permafrost | \$1.8MM |
| 4 | 4" | 300' | | | " | | | Joint Federal/State sale area, 1979 |

PROGRAM: Geothermal DIVISION: Geologic BRANCH: FG&P

CONTACT: J. G. Moore, Menlo Park, CA

DATE: 7/16/79

INDIVIDUAL DRILLHOLES

| <u>Hole name or number</u> | <u>Depth</u> | <u>Final diam.</u> | <u>Cored intervals</u> | <u>Country</u> | <u>Lat</u> | <u>Long</u> | <u>Generalized stratigraphy</u> | <u>Principal objectives</u> | <u>Cost</u> | <u>Start Date</u> | <u>Finish Date</u> |
|----------------------------|--------------|--------------------|------------------------|----------------|------------|-------------|---|---|-------------|-------------------|--------------------|
| Surtsey #1 | 200 m | | continuous | Iceland | 63°18'N | 20°36.5'W | Hyaloclastitic tephra (alkali olivine basalt) Pillowed lava at base? | Alteration studies Degassing studies Structure of marine volcano Thermal studies | \$100,000 | 7/5/79 | 8/20/79 |

FY-79 - continued

PROGRAM: Geothermal

DIVISION: Geologic

BRANCH: Grant to Virginia Poly-
technic Institute and State
University, Blacksburg, VA

CONTACT: Lynn Glover, III, Blacksburg, VA

DATE: 8/28/79

INDIVIDUAL DRILLHOLES

| <u>Hole name or number</u> | <u>Depth</u> | <u>Final diam.</u> | <u>Cored intervals</u> | <u>State</u> | <u>Lat</u> | <u>Long</u> | <u>Generalized stratigraphy</u> | <u>Principal objectives</u> | <u>Cost</u> | <u>Start Date</u> | <u>Finish Date</u> |
|--------------------------------|--------------|------------------------|----------------------------|--------------|------------|-------------|---|---|-------------|-----------------------|------------------------|
| USGS 1 | AQ or BQ | bottom 300 ft. | NC | 34°34'11" | 78°56'02" | | Atlantic Coastal Plain and underlying crystal- line rocks of the Fountain Belt, NC | 1) petrologic, chemical (?) structural, and geo- chronologic study (Rb-Sr, K-Ar, Ar-Ar, fission track of the basement samples) 2) determination of heat flow | ? | 7/79 | 8/79 |
| USGS 2 | AQ or BQ | bottom 300 ft. | NC | | | | Atlantic Coastal Plain and underlying crystal- line rocks of the Fountain or Hatteras belts, NC | | | 9/79 | |

FISCAL YEAR 1980

PROGRAM: Earthquake hazards DIVISION: Geologic BRANCH: Earthquake tectonics & risk CONTACT: J. D. Sims, Menlo Park, CA DATE: 5/9/79

GROUPS OF DRILLHOLES

| <u>Number of holes</u> | <u>Final diam.</u> | <u>Average depth</u> | <u>% core</u> | <u>Location</u> | <u>Generalized stratigraphy</u> | <u>Principal objectives</u> | <u>Cost</u> | <u>Other information</u> | |
|------------------------|--------------------|----------------------|---------------|-----------------|---------------------------------|---|---|--------------------------|--|
| | | | | <u>State</u> | <u>County</u> | | | | |
| 1 | 7.5 cm | 700 m | 100 | CA | Lake | Holocene & Pleistocene lake sediments of Clear Lake | Stratigraphy, paleoclimatic and paleolimnologic reconstruction, and geothermal & heat flow data | \$200,000 | To be drilled with U.S.G.S.-owned rig now being procured. Cost of rig included in cost estimate to left. |

PROGRAM: Geothermal Studies DIVISION: Geologic BRANCH: Tectonophysics CONTACT: Tom Moses, Menlo Park, CA DATE: 9/4/79

GROUPS OF DRILLHOLES

| <u>Number of holes</u> | <u>Final diam.</u> | <u>Average depth</u> | <u>% core</u> | <u>Location</u> | <u>Generalized stratigraphy</u> | <u>Principal objectives</u> | <u>Cost</u> | <u>Other information</u> | |
|------------------------|--------------------|----------------------|---------------|----------------------|---------------------------------|-----------------------------|-------------|--------------------------|--|
| | | | | <u>State</u> | <u>County</u> | | | | |
| 55 | 14 cm | 150 m | 0 | CA NV AZ OR | All | Various | Heat flow | \$200,000 | Contract drilled. Cased with nominal 3.2 cm O.D. casing. Bottom 60 m cemented. |

PROGRAM: Regional Shear Wave Studies DIVISION: Geologic BRANCH: Ground Motion & Faulting CONTACT: Jim Gibbs, Menlo Park, CA DATE: 5/30/79

GROUPS OF DRILLHOLES

| <u>Number of holes</u> | <u>Final diam.</u> | <u>Average depth</u> | <u>% core</u> | <u>Location</u> | <u>Generalized stratigraphy</u> | <u>Principal objectives</u> | <u>Cost</u> | <u>Other information</u> |
|------------------------|--------------------|----------------------|---------------|-----------------|---------------------------------|-----------------------------|-------------|--------------------------|
| | | | | <u>State</u> | <u>County</u> | | | |
| 10 | 4&7/8" | 30 m | | CA | Los Angeles | Shear-wave measurements | \$10,000 | |
| | " | 40 m | | AK | | " " " | \$15,000 | |

FY-80 - continued

PROGRAM: DIVISION: Geologic BRANCH: Eastern Environmental CONTACT: Doug Rankin, Reston, VA DATE:

GROUPS OF DRILLHOLES

| <u>Number of holes</u> | <u>Final diam.</u> | <u>Average depth</u> | <u>% core</u> | <u>Location</u> | <u>Generalized stratigraphy</u> | <u>Principal objectives</u> | <u>Cost</u> | <u>Other information</u> |
|------------------------|--------------------|----------------------|---------------|-----------------|----------------------------------|---------------------------------|-------------|------------------------------|
| 5 | 3" | 50' | 75 | MA | Pleistocene | Glacial tectonics | | Split spoon sediment samples |
| 3 | 4" | 500' | 100 | GA | Richmond | Phyllites/Gneiss/Piedmont | | NQ wireline core |
| 2 | 4" | 500' | 100 | GA | Meriwether | Paleoz./Qtzites/Schist/Gneiss | | " " " |
| 4 | 4" | 400' | 50 | VA/MD | Spottsylvania, Stafford, Charles | Late Mesozoic/Early Tertiary | | |
| 3 | 4" | 500' | 75 | NJ | Bergen | Triassic/Paleozoic/PreC | | |
| 1 | 4" | 300' | 90 | NJ | Essex | Silurian/Ordovician | | |
| 4 | 4" | 200' | 100 | GA | | Upper Cretaceous/Lower Tertiary | | |
| 4 | 4" | 150' | 100 | VA | Essex, Westmoreland, Rich- | Middle Tertiary/lower Pleis. | | |
| | | | | | land, Rich- | Stratigraphic test | | |
| | | | | | mond | Stratigraphic test holes | | |
| | | | | | | Stratigraphic test | | |

PROGRAM: Hydrologic drilling DIVISION: Geologic/WRD BRANCH: Atlantic-Gulf of Mexico CONTACT: J. C. Hathaway, Woods Hole, MA DATE: 4/25/79

GROUPS OF DRILLHOLES

| <u>Number of holes</u> | <u>Final diam.</u> | <u>Average depth</u> | <u>% core</u> | <u>Location</u> | <u>Generalized stratigraphy</u> | <u>Principal objectives</u> | <u>Cost</u> | <u>Other information</u> |
|------------------------|--------------------|----------------------|---------------|----------------------------|---------------------------------|--|-------------|---|
| 12-48# | 2" core diam. | 1000-2000' | 100 | East Coast: Atlantic Shelf | Pleistocene-Cretaceous | Locate limits of offshore fresh water aquifers | \$1.7-5.9M | Proposed program; cost depends on size funded |

PROGRAM: Geotechnical DIVISION: Geol./Consv. BRANCH: Atlantic-Gulf of Mexico CONTACT: J. C. Hathaway, Woods Hole, MA DATE: 9/04/79

GROUPS OF DRILLHOLES

| <u>Number of holes</u> | <u>Final diam.</u> | <u>Average depth</u> | <u>% core</u> | <u>Location</u> | <u>Generalized stratigraphy</u> | <u>Principal objectives</u> | <u>Cost</u> | <u>Other information</u> |
|------------------------|--------------------|----------------------|---------------|---------------------------|---------------------------------------|--|-------------|--------------------------------------|
| 6-10 | 2-2½" | 1000-1700 | 100 | East Coast Atlantic slope | Mostly Pleistocene, possibly Tertiary | Evaluate strength of sediments for potential slumping hazard | \$2M | Proposed program through Sandia Labs |

FY-80 - continued

PROGRAM: Continuous Coring DIVISION: Geologic BRANCH: Atlantic-Gulf of Mexico CONTACT: G. Shideler, Woods Hole, MA DATE: 4/25/79

GROUPS OF DRILLHOLES

| <u>Number of holes</u> | <u>Final diam.</u> | <u>Average depth</u> | <u>% core</u> | <u>Location</u> | <u>Generalized stratigraphy</u> | <u>Principal objectives</u> | <u>Cost</u> | <u>Other information</u> |
|------------------------|--------------------|----------------------|---------------|--|---------------------------------|--|-------------|--|
| 6 | 3" | core 100 m diam. | 100 | Northern Padre Is. & Laguna Madre area (Nueces County, TX) | Late Pleistocene/Holocene | To evaluate the stratigraphic evolution of a fluvial-estuarine-barrier island complex, and to evaluate its potential for peat/coral development. | \$100,000 | Cooperative with Branch of Coal Resources. Coring operations will commence in FY-80. |

PROGRAM: DIVISION: WRD REGION: Western CONTACT: E. R. Leggat, Menlo Park, CA DATE: 9/4/79

GROUPS OF DRILLHOLES

| <u>Number of holes</u> | <u>Final diam.</u> | <u>Average depth</u> | <u>% core</u> | <u>Location</u> | <u>Generalized stratigraphy</u> | <u>Principal objectives</u> | <u>Cost</u> | <u>Other information</u> |
|------------------------|--------------------|----------------------|---------------|-----------------|---------------------------------|-----------------------------|-------------|--------------------------|
| 5-10 | 8" | 600' | | WA | Kitsep | Glacial drift | \$30,000 | Water quality |
| 3-5 | 4" | 850' | 0 | HI | Honolulu | Caprock-basalt | \$110,000+ | |
| 50 | 2" | 2500' | | WA | King | Glacial drift | \$40,000 | |
| 3 | 8-12" | 600-1000' | | WA | Douglas-Grant | Basalt | \$110,000 | |
| 35-50 | 2" | 2800' | | WA | Peud Oreille | Alluvium glacial drift | \$30,000 | |
| 3-5 | 8" | 500' | | WA | Island | Drift | \$25,000 | Water quality |

INDIVIDUAL DRILLHOLES

| <u>Hole name or number</u> | <u>Final depth</u> | <u>Final diam.</u> | <u>Cored intervals</u> | <u>State</u> | <u>Lat</u> | <u>Long</u> | <u>Generalized stratigraphy</u> | <u>Principal objectives</u> | <u>Cost</u> | <u>Start Date</u> | <u>Finish Date</u> |
|----------------------------|--------------------|--------------------|----------------------------|--------------|------------|-------------|---------------------------------|-----------------------------|-------------|-------------------|--------------------|
| Test hole 3 | 1000' | 3" | 100' cores 60' sidewall | CA | 38°55.30" | 121°36' | Alluvium | Stratigraphy-hydrology | \$135,000 | 10/79 | 11/79 |

PROGRAM: Data Collection DIVISION: WRD DISTRICT: Arkansas CONTACT: A. H. Ludwig, Little Rock, AR DATE: 8/23/79

GROUPS OF DRILLHOLES

| <u>Number of holes</u> | <u>Final diam.</u> | <u>Average depth</u> | <u>% core</u> | <u>Location</u> | <u>Generalized stratigraphy</u> | <u>Principal objectives</u> | <u>Cost</u> | <u>Other information</u> |
|------------------------|--------------------|----------------------|---------------|-----------------|---|--------------------------------|-------------|--------------------------|
| 10 | 4" | 300' | -- | AR | Cretaceous, Tertiary, Quaternary Series | Water Resources Investigations | Unknown | |

FY-80 - continued

PROGRAM:

DIVISION: WRD

DISTRICT: Louisiana

CONTACT: George T. Cardwell, Baton Rouge, LA

DATE: 8/23/79

GROUPS OF DRILLHOLES

| <u>Number of holes</u> | <u>Final diam.</u> | <u>Average depth</u> | <u>% core</u> | <u>Location</u> | <u>Generalized stratigraphy</u> | <u>Principal objectives</u> | <u>Cost</u> | <u>Other information</u> |
|------------------------|--------------------|----------------------|---------------|--|--|--|-------------|--------------------------|
| 14 | 2300' | -- | LA | Webster Union Bossier Claiborne Bienville Jackson Ouachita | Upper Cretaceous, Paleocene, Eocene--sand, silt, clay, marl. | Obtain head and aquifer characteristic data for regional aquifers in northern Louisiana. | | |

GROUPS OF DRILLHOLES (continued)

| <u>Number of holes</u> | <u>Final diam.</u> | <u>Average depth</u> | <u>% core</u> | <u>Location</u> | <u>Generalized stratigraphy</u> | <u>Principal objectives</u> | <u>Cost</u> | <u>Other information</u> |
|------------------------|--------------------|----------------------|---------------|-----------------|--|-----------------------------|---------------------|--------------------------|
| 1 | 2" | 600' | 0 | LA | Richland Natchitoches Winn Franklin East Baton Rouge | Pleistocene sand and gravel | Water-level monitor | \$1500 |

PROGRAM: Montana District

DIVISION: WRD

DISTRICT: Montana

CONTACT: Joe Moreland, Helena, MT

DATE: 8/28/79

GROUPS OF DRILLHOLES

| <u>Number of holes</u> | <u>Final diam.</u> | <u>Average depth</u> | <u>% core</u> | <u>Location</u> | <u>Generalized stratigraphy</u> | <u>Principal objectives</u> | <u>Cost</u> | <u>Other information</u> |
|------------------------|--------------------|----------------------|---------------|-----------------|---------------------------------|-----------------------------|-------------------------------|--------------------------|
| 50 | 4" | 200' | -- | MT | ? | Sandstones and coal | Groundwater-observation wells | \$60,000 |
| 6-10 | 4" | 1000' | -- | MT | ? | Sandstones and shales | Groundwater-observation wells | \$90,000 |

PROGRAM: High Plains RASA
Project NE 78-041

DIVISION: WRD

DISTRICT: Nebraska

CONTACT: M. J. Ellis, Lincoln, NE

DATE: 6/26/79

GROUPS OF DRILLHOLES

| <u>Number of holes</u> | <u>Final diam.</u> | <u>Average depth</u> | <u>% core</u> | <u>Location</u> | <u>Generalized stratigraphy</u> | <u>Principal objectives</u> | <u>Cost</u> | <u>Other information</u> |
|------------------------|--------------------|----------------------|---------------|-----------------|---------------------------------|---|---|--------------------------|
| 14 | 4-5" | 750' | 0 | NE | Cherry | Surficial deposits of wind-blown sand | Collection of data to determine the thickness of the principal aquifer system, and to provide a basis for estimating hydraulic conductivities and specific yields of aquifer material | |
| 6 | 4-5" | 800' | 0 | NE | Sheridan | Pleistocene sand and gravel deposits | | |
| 2 | 4-5" | 850' | 0 | NE | Hooker | Miocene Ogallala Formation | | |
| 2 | 4-5" | 900' | 0 | NE | Grant | Oligocene Brule Formation | | |
| | | | | | | Test holes will be drilled into upper 20-30 feet of Brule Formation | | |

FY-80 - continued

PROGRAM: McKenzie County Water Resources DIVISION: WRD

DISTRICT: North Dakota

CONTACT: M. G. Croft, Bismark, ND

DATE: 5/7/79

GROUPS OF DRILLHOLES

| <u>Number of holes</u> | <u>Final diam.</u> | <u>Average depth</u> | <u>% core</u> | <u>Location</u> | <u>Generalized stratigraphy</u> | <u>Principal objectives</u> | <u>Cost</u> | <u>Other information</u> |
|------------------------|--------------------|----------------------|---------------|-----------------|---------------------------------|-----------------------------|--------------|--------------------------|
| 2 | 4" | 2000' | | ND | McKenzie | Fort Union | Water supply | \$60,000 |
| 4 | 2" | 1000' | | ND | McKenzie | Fort Union | Stratigraphy | \$10,000 |
| 20 | 1&1/4" | 100' | | ND | McKenzie | Glacial drift | Stratigraphy | \$3,000 |

PROGRAM: Bottineau-Rolette County Water Resources DIVISION: WRD

DISTRICT: North Dakota

CONTACT: C. A. Armstrong, Bismark, ND

DATE: 8/29/79

GROUPS OF DRILLHOLES

| <u>Number of holes</u> | <u>Final diam.</u> | <u>Average depth</u> | <u>% core</u> | <u>Location</u> | <u>Generalized stratigraphy</u> | <u>Principal objectives</u> | <u>Cost</u> | <u>Other information</u> |
|------------------------|--------------------|----------------------|---------------|-----------------|---------------------------------|---|---------------------|--------------------------|
| 100 | | 200' | | ND | Bottineau Rolette | Glacial drift Tertiary Cretaceous | Aquifer delineation | \$60,000 |

PROGRAM: Rattlesnake Butte Hydrol. ND79-085 DIVISION: WRD

DISTRICT: North Dakota

CONTACT: W. F. Horak, Bismark, ND

DATE: 8/27/79

GROUPS OF DRILLHOLES

| <u>Number of holes</u> | <u>Final diam.</u> | <u>Average depth</u> | <u>% core</u> | <u>Location</u> | <u>Generalized stratigraphy</u> | <u>Principal objectives</u> | <u>Cost</u> | <u>Other information</u> |
|------------------------|--------------------|----------------------|---------------|-----------------|---------------------------------|-----------------------------|-------------------------------|--------------------------|
| 20 | 5" | 250' | 0.5 | ND | Stark | Fort Union Formation | Groundwater hydrology program | \$25,000 |

FY-80 - continued

PROGRAM: DIVISION: WRD DISTRICT: Texas CONTACT: I. D. Yost, Austin, TX DATE: 8/29/79

GROUPS OF DRILLHOLES

| <u>Number of holes</u> | <u>Final diam.</u> | <u>Average depth</u> | <u>% core</u> | <u>Location</u> | <u>Generalized stratigraphy</u> | <u>Principal objectives</u> | <u>Cost</u> | <u>Other information</u> |
|------------------------|--------------------|----------------------|---------------|-----------------|--|-----------------------------|---|--------------------------|
| 21 | 6&3/4" | 250' | 30 | TX | Andrews Armstrong Bailey Castro | Ogallala | Describe hydraulic characteristics of Ogallala. | \$147,000 |

GROUPS OF DRILLHOLES (continued)

| <u>Number of holes</u> | <u>Final diam.</u> | <u>Average depth</u> | <u>% core</u> | <u>Location</u> | <u>Generalized stratigraphy</u> | <u>Principal objectives</u> | <u>Cost</u> | <u>Other information</u> |
|------------------------|--------------------|----------------------|---------------|-----------------|--|-----------------------------|-------------|--------------------------|
| | | | | | Cochran Dawson Deaf Smith Donley Ector Gray Hale Hockley Lamb Lubbock Martin Midland Parmer Randall Swisher Terry | | | |

PROGRAM: FL 195 DIVISION: WRD DISTRICT: Florida CONTACT: Michael C. Yurewicz, Tallahassee, FL DATE: 8/27/79

GROUPS OF DRILLHOLES

| <u>Number of holes</u> | <u>Final diam.</u> | <u>Average depth</u> | <u>% core</u> | <u>Location</u> | <u>Generalized stratigraphy</u> | <u>Principal objectives</u> | <u>Cost</u> | <u>Other information</u> | |
|------------------------|--------------------|----------------------|---------------|-----------------|---------------------------------|-----------------------------|-------------|--------------------------|------------|
| 21 | 4" | 100' | 0 | FL | Leon | Oligocene Limestone | QW samples | \$12,600 | Cooperator |

FY-80 - continued

PROGRAM: Water Resources, Lee DIVISION: WRD
& Collier Co.

DISTRICT: Florida

CONTACT: F. A. Watkins, Jr., Fort Meyers, FL

DATE: 8/23/79

GROUPS OF DRILLHOLES

| <u>Number of holes</u> | <u>Final diam.</u> | <u>Average depth</u> | <u>% core</u> | <u>Location</u> | <u>Generalized stratigraphy</u> | <u>Principal objectives</u> | <u>Cost</u> | <u>Other information</u> | |
|------------------------|--------------------|----------------------|---------------|-----------------|---------------------------------|-----------------------------|--------------|--------------------------|-----------|
| 2 | 4" | 400' | 0 | FL | Collier | Sand, clay, limestone | Hydrogeology | \$4000 | Contract. |
| 6 | 4" | 400' | 0 | FL | Lee | " " " | " | \$15000 | Contract. |

PROGRAM: DIVISION: WRD DISTRICT: Florida CONTACT: R. L. Knutilla, Tampa, FL DATE: 8/27/79

GROUPS OF DRILLHOLES

| <u>Number of holes</u> | <u>Final diam.</u> | <u>Average depth</u> | <u>% core</u> | <u>Location</u> | <u>Generalized stratigraphy</u> | <u>Principal objectives</u> | <u>Cost</u> | <u>Other information</u> |
|------------------------|--------------------|----------------------|---------------|-----------------|---------------------------------|-----------------------------|----------------------|--------------------------|
| 30 | 2" | 40' | 0 | FL | Pinellas | Quaternary | Monitor water levels | In-house |
| 3 | 6-8" | 450' | 0 | FL | Pasco | Tertiary | " " " | Cooperator |
| 4 | 6-8" | 400' | 0 | FL | Hillsborough | " | " " " | " |
| 4 | 6-8" | 250' | 0 | FL | Charlotte | " | " " " | " |
| 2 | 6-8" | 700' | 0 | FL | Hardee | " | " " " | " |
| 1 | 6" | 410' | 0 | FL | Sarasota | " | " " " | " |

INDIVIDUAL DRILLHOLES

| <u>Hole name or number</u> | <u>Final depth</u> | <u>diam.</u> | <u>Cored intervals</u> | <u>State</u> | <u>Lat</u> | <u>Long</u> | <u>Generalized stratigraphy</u> | <u>Principal objectives</u> | <u>Cost</u> | <u>Start Date</u> | <u>Finish Date</u> |
|----------------------------|--------------------|--------------|------------------------|--------------|------------|-------------|---------------------------------|--|-------------|-------------------|--------------------|
| TR 10-3 | 600' | 6" | 600 | FL | 27°55' | 82°23' | Tertiary | Monitor water levels | ? | FY79-80 | |
| TR 20-1 | 400' | " | 400 | FL | 28°45' | 82°40' | " | and determine hydraulic properties of aquifer. | | " | |
| TR 14-3 | 500' | " | 500 | FL | 28°10' | 82°40' | " | Drilling by cooperator. | | " | |
| TR 18-2 | 500' | " | 500 | FL | 28°25' | 82°40' | " | | | " | |
| 134 | 400' | " | 400 | FL | ? | ? | " | | | " | |
| TR 3-2 | 400' | " | 400 | FL | 26°50' | 82°20' | " | | | " | |
| TR 8-1 | 600' | " | 600 | FL | 27°35' | 82°30' | " | | | " | |

PROGRAM: DIVISION: WRD BRANCH: CONTACT: E. C. Hayes, Jacksonville, FL DATE: 8/28/79

GROUPS OF DRILLHOLES

| <u>Number of holes</u> | <u>Final diam.</u> | <u>Average depth</u> | <u>% core</u> | <u>Location</u> | <u>Generalized stratigraphy</u> | <u>Principal objectives</u> | <u>Cost</u> | <u>Other information</u> | |
|------------------------|--------------------|----------------------|---------------|-----------------|---------------------------------|-------------------------------------|-------------------------|--------------------------|------------|
| 1 | 6" | 2100' | 0 | FL | Duval | Sand-shell-clay-limestone-sandstone | Deep observation wells | \$170,000 | Cooperator |
| 10 | 2" | 100' | 0 | FL | St. Johns | Sand-shell-clay | Evaluate aquifer system | \$500 ea. | Cooperator |

FY-80 - continued

PROGRAM: DIVISION: WRD DISTRICT: Florida CONTACT: Albert M. La Sala, Jr., Miami, FL DATE: 8/31/79

GROUPS OF DRILLHOLES

| <u>Number of holes</u> | <u>Final diam.</u> | <u>Average depth</u> | <u>% core</u> | <u>Location</u> | <u>Generalized stratigraphy</u> | <u>Principal objectives</u> | <u>Cost</u> | <u>Other information</u> | |
|------------------------|--------------------|----------------------|---------------|-----------------|---------------------------------|-----------------------------|---------------------------------------|--------------------------|------------|
| | | | | <u>State</u> | <u>County</u> | | | | |
| 15 | 2" | 200' | 50 | FL | Dade | Sand, sandstone, limestone | Delineate lithology and water quality | \$30,000 | In-house |
| 20 | 2" | 150' | 75 | FL | Broward | Sand, sandstone | " | \$30,050 | " |
| 2 | 2" | 200' | 100 | FL | Palm Beach | Sand, sandstone, limestone | Aquifer testing | \$5,000 | " |
| 15 | 2" | 100' | 100 | FL | Dade | Sand, sandstone, limestone | Lithology | \$15,000 | Cooperator |
| 25 | 2" | 150' | -- | FL | Palm Beach | Sand, sandstone, limestone | Replacement of observation silos | \$37,500 | In-house |
| | | | | | Broward | | | | |
| | | | | | Dade | | | | |

PROGRAM: DIVISION: WRD DISTRICT: Georgia CONTACT: H. E. Gill, Doraville, GA DATE: 8/28/79

GROUPS OF DRILLHOLES

| <u>Number of holes</u> | <u>Final diam.</u> | <u>Average depth</u> | <u>% core</u> | <u>Location</u> | <u>Generalized stratigraphy</u> | <u>Principal objectives</u> | <u>Cost</u> | <u>Other information</u> | |
|------------------------|--------------------|----------------------|---------------|-----------------|-------------------------------------|-----------------------------|---------------------------------------|--------------------------|----------------------|
| | | | | <u>State</u> | <u>County</u> | | | | |
| 5 | 6" | 600' | | GA | Several south of Atlanta | Crystalline | Test site selection methods and yield | \$20,000 | Drilling by contract |
| 10 | 4" or 6" | 100-200' | | GA | Several counties in Dougherty Plain | Upper Eocene | Hydrology of Dougherty Plain | \$10,000 | Drilling by contract |

INDIVIDUAL DRILLHOLES

| <u>Hole name or number</u> | <u>Final Depth</u> | <u>diam.</u> | <u>Cored intervals</u> | <u>State</u> | <u>Lat</u> | <u>Long</u> | <u>Generalized stratigraphy</u> | <u>Principal objectives</u> | <u>Cost</u> | <u>Start Date</u> | <u>Finish Date</u> |
|----------------------------|--------------------|--------------|------------------------|--------------|------------|-------------|---------------------------------|---|-------------|-------------------|--------------------|
| Burke Co. | 2000' | 6" | Every 100' | GA | 32°52'30" | 82°12'40" | Lower Tertiary - Cretaceous | Regional stratigraphy, aquifer geometry | \$75,000 | 10/79 | 12/79 |

PROGRAM: DIVISION: WRD DISTRICT: Kentucky CONTACT: Philip A. Emery, Louisville, KY DATE: 8/23/79

GROUPS OF DRILLHOLES

| <u>Number of holes</u> | <u>Final diam.</u> | <u>Average depth</u> | <u>% core</u> | <u>Location</u> | <u>Generalized stratigraphy</u> | <u>Principal objectives</u> | <u>Cost</u> | <u>Other information</u> | |
|------------------------|--------------------|----------------------|---------------|-----------------|---------------------------------|------------------------------|------------------------------|--------------------------|------------|
| | | | | <u>State</u> | <u>County</u> | | | | |
| 10 | 1&1/2" | 110' | 0 | KY | Jefferson | Glacial outwash and alluvium | Lithology - water level data | \$600 ea. | In-house |
| 30 | 6" | 100' | 100 | KY | In eastern coal field | Sandstone, shale, coal | Coal hydrology | \$1200 ea. | Cooperator |

FY-80 - continued

PROGRAM: Caribbean District

DIVISION: WRD

DISTRICT: Caribbean

CONTACT: James E. Heisel, San Juan, PR

DATE: 5/9/79

GROUPS OF DRILLHOLES

| <u>Number of holes</u> | <u>Final diam.</u> | <u>Average depth</u> | <u>% core</u> | <u>Location</u> | <u>Generalized stratigraphy</u> | <u>Principal objectives</u> | <u>Cost</u> | <u>Other information</u> |
|------------------------|--------------------|----------------------|---------------|-----------------|---|-----------------------------|-------------------------------------|----------------------------|
| 3 | 6" | 200' | 20 | PR | Loiza Rio Grande San German Cabo Rojo Hormigueros | Alluvium | Exploratory | \$8500 |
| 3 | " | " | " | PR | Arecibo | " | " | " |
| 27 | 6" | 90' | 20 | PR | Barceloneta | Muck and limestone | Exploration | \$50,000 |
| 30 | 2" | 15' | 10 | PR | | " | Materials Pressures Discharge | " |
| 10 | 4" | 100' | 20 | PR | Barceloneta | Limestone | " | Funded by Dept. of Ag., PR |

PROGRAM:

DIVISION: WRD

DISTRICT: South Carolina

CONTACT: Phillip W. Johnson, Columbia, SC

DATE: 4/26/79

GROUPS OF DRILLHOLES

| <u>Number of holes</u> | <u>Final diam.</u> | <u>Average depth</u> | <u>% core</u> | <u>Location</u> | <u>Generalized stratigraphy</u> | <u>Principal objectives</u> | <u>Cost</u> | <u>Other information</u> |
|------------------------|--------------------|----------------------|---------------|-----------------|---------------------------------|-----------------------------|---|--|
| 35-40 | 4" | 500' | 35 | SC | All Coastal Plain Counties | Coastal Plain | Definitive geologic and hydrologic data - Groundwater and quality of water monitoring sites | Unsure whether this project will be funded in FY-80. |

PROGRAM: Hydrology Carbonate Aquifers-Lincoln Co.

DIVISION: WRD

DISTRICT: Tennessee

CONTACT: Pat Hollyday, Nashville, TN

DATE: 8/22/79

GROUPS OF DRILLHOLES

| <u>Number of holes</u> | <u>Final diam.</u> | <u>Average depth</u> | <u>% core</u> | <u>Location</u> | <u>Generalized stratigraphy</u> | <u>Principal objectives</u> | <u>Cost</u> | <u>Other information</u> |
|------------------------|--------------------|----------------------|---------------|-----------------|---------------------------------|-----------------------------|---------------------------------------|--------------------------|
| 3 | 6-1/4" | 100' | 0 | TN | Lincoln | Mississippian Fort Payne | Hydrologic Investigation - test wells | \$5000 |

GROUPS OF DRILLHOLES (continued)

| <u>Number of holes</u> | <u>Final diam.</u> | <u>Average depth</u> | <u>% core</u> | <u>Location</u> | <u>Generalized stratigraphy</u> | <u>Principal objectives</u> | <u>Cost</u> | <u>Other information</u> |
|------------------------|--------------------|----------------------|---------------|-----------------|---------------------------------|-----------------------------|-------------|---------------------------------------|
| 2 | " | " | TN | Lincoln | Ordovician Cannon Limestone | " | \$4000 | " Tentative - not currently funded |

PROGRAM: Hydrology Carbonate Aquifers--Dickson and Fairview DIVISION: WRD DISTRICT: Tennessee CONTACT: Ann Zurawski, Nashville, TN DATE: 8/27/79

GROUPS OF DRILLHOLES

| <u>Number of holes</u> | <u>Final diam.</u> | <u>Average depth</u> | <u>% core</u> | <u>Location</u> | <u>Generalized stratigraphy</u> | <u>Principal objectives</u> | <u>Cost</u> | <u>Other information</u> | |
|------------------------|--------------------|----------------------|---------------|-----------------|---------------------------------|--------------------------------------|---------------------------------------|--------------------------|--|
| | | | | <u>State</u> | <u>County</u> | | | | |
| 15 | 6" | 200' | 0 | TN | Dickson | Mississippian - Warsaw Formation | Hydrologic Investigation - test wells | \$25,000 | Cost includes aquifer tests. Drilling contracted by cooperator |
| 10 | 6" | 170' | 0 | TN | Williamson | Mississippian - Fort Payne Formation | Hydrologic Investigation - test wells | \$17,005 | Cost includes 3 aquifer tests Drilling contracted by cooperator |

PROGRAM: Hydrology Carbonate Aquifers--Murfreesboro DIVISION: WRD DISTRICT: Tennessee CONTACT: C. R. Burchett, Nashville, TN DATE: 5/7/79

GROUPS OF DRILLHOLES

| <u>Number of holes</u> | <u>Final diam.</u> | <u>Average depth</u> | <u>% core</u> | <u>Location</u> | <u>Generalized stratigraphy</u> | <u>Principal objectives</u> | <u>Cost</u> | <u>Other information</u> | |
|------------------------|--------------------|----------------------|---------------|-----------------|---------------------------------|--|---------------------------------------|--------------------------|---|
| | | | | <u>State</u> | <u>County</u> | | | | |
| 3 | 4" | 250' | 0 | TN | Rutherford | Ordovician limestones Stones River and Nashville Groups | Hydrologic Investigation - test holes | \$800 ea. | Tentative - not currently funded. Will be contracted to local water well driller. |

PROGRAM: Lignite Studies-- W. Tennessee DIVISION: WRD DISTRICT: Tennessee CONTACT: W. S. Parks, Memphis, TN DATE: 8/27/79

GROUPS OF DRILLHOLES

| <u>Number of holes</u> | <u>Final diam.</u> | <u>Average depth</u> | <u>% core</u> | <u>Location</u> | <u>Generalized stratigraphy</u> | <u>Principal objectives</u> | <u>Cost</u> | <u>Other information</u> | |
|------------------------|--------------------|----------------------|---------------|-----------------|---------------------------------|-----------------------------|-------------------------------|--------------------------|--|
| | | | | <u>State</u> | <u>County</u> | | | | |
| 6-12 | uncertain | 200-300' | 25 | TN | Lauderdale | Eocene Jackson Formation | Observation well construction | | Tentative - not currently funded. Will be contracted to driller by cooperator. |

FY-80 - continued

PROGRAM: ORNL Burial Ground
Studies

DIVISION: WRD

DISTRICT: Tennessee

CONTACT: Dave Webster, Nashville, TN

DATE: 5/7/79

GROUPS OF DRILLHOLES

| <u>Number of holes</u> | <u>Final diam.</u> | <u>Average depth</u> | <u>core</u> | <u>Location</u> | <u>Generalized stratigraphy</u> | <u>Principal objectives</u> | <u>Cost</u> | <u>Other information</u> |
|------------------------|--------------------|----------------------|-------------|-----------------|---------------------------------|---|-------------------|---|
| 9-12 | 5" | 125' | limited | TN Roane | Conasauga Shale | Piezometer installation. Possibly QW monitoring of radionuclides. | \$60,000-\$70,000 | Tentative--not yet funded. Union Carbide (not a cooperator) will contract for these wells at Oak Ridge Nat. Lab. USGS will design the wells and obtain data from them after construction. |

PROGRAM: S.E. Limestone
Aquifer Study

DIVISION: WRD

REGION: Southeast

CONTACT: R. H. Johnston, Atlanta, GA

DATE: 5/10/79

INDIVIDUAL DRILLHOLES

| <u>Hole name or number</u> | <u>Final Depth</u> | <u>diam.</u> | <u>Cored intervals</u> | <u>State</u> | <u>Lat</u> | <u>Long</u> | <u>Generalized stratigraphy</u> | <u>Principal objectives</u> | <u>Cost</u> | <u>Start Date</u> | <u>Finish Date</u> |
|----------------------------|--------------------|--------------|------------------------|--------------|------------|-------------|---|---|-------------|-------------------|--------------------|
| Green Swamp #1 | 2500' | 3" | 350-2500' | FL | 28°10'57" | 81°49'50" | Tertiary limestone & dolomite (Ocala, Lake City, & Oldsmar limestones | Stratigraphy, ground water quality, artesian head distribution by depth | \$56,000 | 10/79 | 12/79 |

| | | | | | | | | | | | |
|----------------------------|-------|----|------------|----|--------|--------|-------------------------------|--|----------|------|------|
| Everglades Nat. Park No. 1 | 2500' | 3" | 1330-2800' | FL | 25°24' | 80°35' | Tertiary limestone & dolomite | Stratigraphy, ground water quality, artesian head changes with depth | \$46,000 | 1/80 | 2/80 |
|----------------------------|-------|----|------------|----|--------|--------|-------------------------------|--|----------|------|------|

INDIVIDUAL DRILLHOLES (continued)

| <u>Hole name or number</u> | <u>Final Depth</u> | <u>diam.</u> | <u>Cored intervals</u> | <u>State</u> | <u>Lat</u> | <u>Long</u> | <u>Generalized stratigraphy</u> | <u>Principal objectives</u> | <u>Cost</u> | <u>Start Date</u> | <u>Finish Date</u> |
|----------------------------|--------------------|--------------|------------------------|--------------|-------------------|-------------|---------------------------------|--|-------------|-------------------------------------|--------------------|
| Waycross #1 | 2000-3000' | ? | ? | GA | site not selected | | Tertiary limestone & dolomite | Stratigraphy, ground water quality, artesian head changes with depth | \$200,000 | Proposed hole--details not certain. | |

FY-80 - continued

PROGRAM:

DIVISION: WRD

REGION: Northeastern

CONTACT: John A. Baker, Reston, VA

DATE: 5/4/79

GROUPS OF DRILLHOLES

| <u>Number of holes</u> | <u>Final diam.</u> | <u>Average depth</u> | <u>% core</u> | <u>Location</u> | <u>Generalized stratigraphy</u> | <u>Principal objectives</u> | <u>Cost</u> | <u>Other information</u> |
|------------------------|--------------------|----------------------|---------------|-----------------|---------------------------------|--|--------------------------------|--------------------------|
| 5 | 4" | 70' | 0 | MN | Hennepin | Drift & upper bedrock | \$7,500 | 4/15-5/15/80 |
| 5 | 5" | 80' | 90 | MN | Hennepin | " | \$7,500 | 5/1-6/15/80 |
| 40 | 4" | 200' | 0 | MN | Swift | Drift | \$36,000 | 8/1-9/30/80 |
| 5 | 4" | 150' | 0 | MN | Carlton | Drift & Hinckley Sandstone | \$5,000 | 8/1-20/80 |
| 100 | 2" | 75' | 0 | IN | Area not determined | Glacial outwash | \$30,000 | |
| 5 | 6" | 110' | 0 | OH | Jefferson | Sandstone, coal | \$8,000 | |
| 1 | 6" | 100' | 0 | PA | Columbia | Alluvium | \$5,000 | |
| 25 | 2" | 50' | 10 | CT | Statewide | Glacial | \$8,800 | |
| 50 | 2" | 50' | 10 | CT | Fairfield | " | \$17,500 | |
| 2 | 2" | 50' | 10 | CT | Windham | " | \$700 | |
| | | | | | New London | | | |
| 12 | 6" | 40' | 20 | NY | Oswego | Stratigraphic drift | \$12,000 | |
| 15 | 4" | 50' | 25 | NY | Broome | " | \$8,000 | |
| 5 | 6" | 50' | 0 | NY | Courtland | " | \$7,000 | |
| 5 | 6" | 50' | 0 | NY | Chemung | " | \$7,000 | |
| 5 | 6" | 125' | 0 | MI | Unknown | Glacial & bedrock | \$30,000 | |
| 9 | 6-8" | 75-1000' | 0 | MD | Garrett Anne | Paleozoic Coastal Plain sed. through to basement | Multi-head observation | Contracts in prep. |
| 1 | 8" | 1250' | 0 | MD | Arundel | " | | " |
| 1 | 8" | 2300' | | MD | Queen Annes | Coastal Plain to basement | Stratigraphy, water level " | " |

PROGRAM: Black Warrior Coal Basin, Phase II

DIVISION: Conservation

REGION: Eastern

CONTACT: Orrin Gilbert, Washington, D.C.

DATE: 4/30/79

GROUPS OF DRILLHOLES

| <u>Number of holes</u> | <u>Final diam.</u> | <u>Average depth</u> | <u>% core</u> | <u>Location</u> | <u>Generalized stratigraphy</u> | <u>Principal objectives</u> | <u>Cost</u> | <u>Other information</u> |
|------------------------|--------------------|----------------------|---------------|-----------------|---------------------------------|--|--------------------------------------|---|
| 24 | 1&7/8" | 1200' | 100 | AL | ? | Pottsville Fm. (Pennsylvanian): Alternating shales, sandstones, and coal (minor limestones) | Mary Lee and Black Creek coal beds ? | After Phase I, the Bureau of Land Management will select tracts for further evaluation. Phase II drilling will concentrate on these selected tracts. We presently do not know where they will be. |

FY-80 - continued

PROGRAM: National Petroleum Reserve in Alaska

DIVISION: Director's Office

CONTACT: R. D. Carter, Menlo Park, CA

DATE: 8/22/79

GROUPS OF DRILLHOLES

| <u>Number of holes</u> | <u>Final diam.</u> | <u>Average depth</u> | <u>% core</u> | <u>Location</u> | <u>Generalized stratigraphy</u> | <u>Principal objectives</u> | <u>Cost</u> | <u>Other information</u> |
|------------------------|--------------------|----------------------|---------------|-----------------|---------------------------------|-----------------------------|-------------|--------------------------|
| 3000 | 110' | spl. at T.D. | AK | NPR-A | | Seismic shotholes | | |

INDIVIDUAL DRILLHOLES

| <u>Hole name or number</u> | <u>Final Depth</u> | <u>diam.</u> | <u>Cored intervals</u> | <u>State</u> | <u>(Tentative) Township</u> | <u>Range</u> | <u>Generalized stratigraphy</u> | <u>Principal objectives</u> | <u>Cost</u> | <u>Start Date</u> | <u>Finish Date</u> |
|----------------------------|--------------------|--------------|------------------------|--------------|-----------------------------|--------------|---------------------------------|-----------------------------|-------------|-------------------|--------------------|
| Nulavik #1 | 6000' | | | AK | T19N | R21W | | Test well | | | |
| Koluktak #1 | 4500' | | | | T5N | R11W | | " | | | |
| East Simpson #2 | 7000' | | | | T19N | R12W | | " | | | |
| Nuwuk #1 | 4200' | | | | T24N | R17W | | " | | | |
| Awuna #1 | 15000' | | | | T3S | R25W | | " | | | |

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