PCWA-L-044

Placer County Water Agency

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A Public Agency

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July 1, 2004

Mr. Takeshi Yamashita, Regional Engineer
FEDERAL ENERGY REGULATORY COMMISSION
901 Market Street, Suite 350
San Francisco, CA 94103-1778

Attention: Mr. John Onderdonk

RE: FERC Project No. 2079
Middle Fork American River Project
L.L. Anderson Dam - Spillway Exploratory Borings

Dear Mr. Yamashita:

The U.S. Army Corps of Engineers is continuing the development of the Folsom Dam Raise Project. A key element of this project is enabling PCWA's L.L. Anderson Dam at French Meadows Reservoir to pass the Probable Maximum Flood (PMF) without failing. The PMF, as calculated by the Corps for French Meadows, has more than doubled since the introduction of HMR #58 and #59.

Several alternatives have been developed by the Corps to pass the PMF at L.L. Anderson Dam. The leading candidate is increasing the existing spillway capacity. In order to develop this alternative further, three vertical exploratory borings are planned along the north edge of the spillway, away from the dam. These borings are further described in Exhibit A, and fall within the existing FERC #2079 boundary. Exhibit B contains the Corps Rock Core Drilling Specification.

The Corps has described the purpose of the drilling in the following statement: "The proposed locations of the rock core explorations is to evaluate the strength of the rock for purposes of excavation and stabilization. We are anticipating the proposed design will require excavation of the right side of the spillway and deepening of the channel to provide greater flow capacity. Also, stability of the rock slopes may be required depending on the hydraulic model studies. For these initial explorations (more will follow in the next few years), we focused on the area near the existing gate structure and in the approach channel. The explorations will occur from the uppermost right-side bench of the spillway (see maps in Exhibit A). We have two holes located both upstream and downstream of the gate, and one hole upstream in the approach channel. The depths of the holes were selected so they would extend several feet below the current invert of the spillway channel to help in estimating excavation requirements. We did not want to consider

explorations farther downstream of the gate at this time as these holes would have to be much deeper and it's possible that one hole in that area would exceed the current budget."

Our FERC Part 12 consultant, Richard Harlan, has reviewed the Corps exploratory drilling scope, and had the following comments: " I have no real comment on the boring number or locations. They are reasonable.", and "....with the rock exposed in the existing cuts we have an excellent profile of the rock just by going and looking.", and "The testing, etc. is covered in the spec and seems reasonable for the project." Mr. Harlan also stated "of interest would be a memo describing and including a sketch of the hole locations and rationale for those locations, depth, etc. and particularly how the holes locations relate to the geologic conditions." A response to this request was the explanation provided in the previous paragraph.

The Corps will provide a full-time geologist / inspector to monitor and document the work. Taber Drilling, which has worked for PCWA and PG&E on the Middle Fork Tunnel and Surge investigations, is the likely drilling contractor.

The Tahoe National Forest (TNF) requires that the Corps obtain a Special Use Permit from them for this work. The TNF is developing the permit and the appropriate NEPA documents, and plans to finalize the permit in mid-July. PCWA and the Corps have also entered into a right-of-entry agreement for this preliminary work. See Exhibit C.

Additional questions and answers are included in e-mails dated June 4, 7, and 8, 2004, which are included as Exhibit D.

We request that FERC authorize the proposed exploratory work to proceed, pending final approval of the TNF Special Use Permit.

Sincerely,

PLACER COUNTY WATER AGENCY

Stephen J. Jones
Power System Manager

Attachments

EXHIBIT A

PROPOSED 2004 GEOLOGIC EXPLORATIONS

Jon Mattson

From: Pattermann, Kenneth R SPK [Kenneth.R.Pattermann@usace.army.mil]

Sent: Friday, May 28, 2004 3:15 PM

To: Jon Mattson; Stanage, Clark E SPK Contractor; O'Leary, Lynn M SPK; McCune, Richard L SPK; Gee, Leila A SPK; Jorgensen, Kim E SPK; Oliver, Shawn E SPK; Bell, Daniel A SPK; Vincent, Robert J SPK; Cantrell, Patricia L SPK

Cc: Ramirez, David A SPK; Vrchoticky, Robert D SPK

Subject: Proposed 2004 Geologic Explorations for LL Anderson Dam Spillway

Three explorations are proposed for the spillway at LL Anderson Dam.

The following information is provided for your review and comment, and for obtaining rights-of-entry with PCWA, Forest Service, etc.

The following table shows the GPS coordinates of the holes along with 2 maps (LLAexplortopo01.jpg, LLAspill02.tif) that show the locations in blue.

LL Anderson Site Visit 5/7/04
Proposed Borehole Locations

Borehole #	Waypoint Name	North Latitude			West Longitude			El (feet)	Depth (feet)
		D	M	S	D	M	S		
1F-04-01	LLADSGATE	39	06	55.8	120	28	19.2	5317	120
1F-04-02	LLAUSGATE	39	06	55.1	120	28	17.2	5302	120
1F-04-03	LLAAPPCHAN	39	06	54	120	28	13.6	5281	60

GPS Coordinates
Error +/- 15 feet
NAD83

Drilling Scope:

Three (3) vertical borings (rock corings), two (2) to 120' deep, one (1) to 60' deep; hydraulic pressure testing maximum of 30 hours. Holes will be grouted upon completion. Rock coring will be accomplished utilizing HQ wireline drilling equipment. Laboratory tests will include Unconfined Compression strength of intack rock core specimens according to ASTM D 2938, bulk Specific Gravity Tests according to ASTM C 127, Elastic Modulus test according to ASTM D 3148, and as an optional laboratory test Splitting Tensile Strength of intact rock core specimens according to ASTM D 3967. Samples selected for testing will be shipped to the lab, others will remain at PCWA offices. A fire unit will be on standby during drilling.

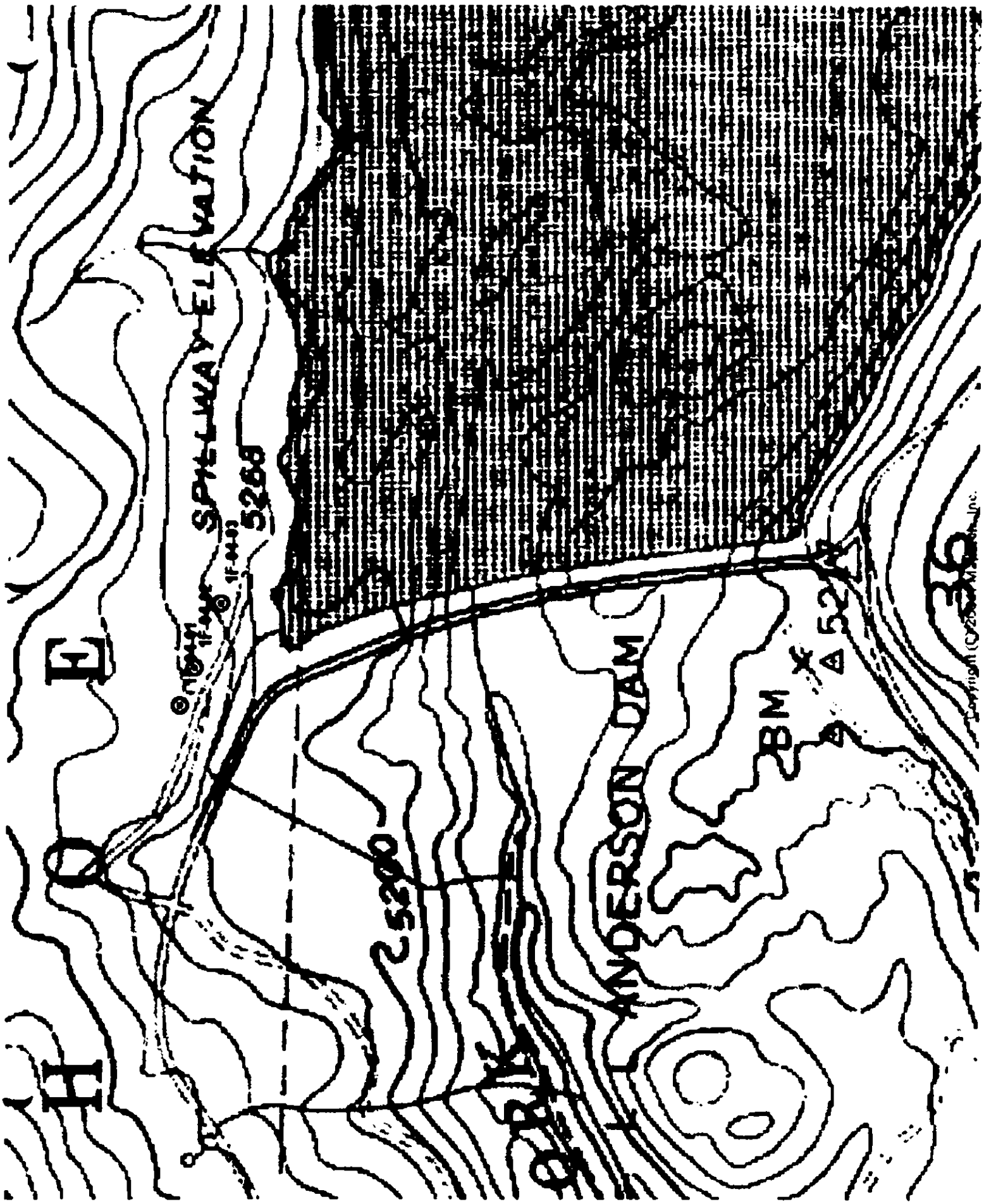
Shawn, please pass on to your replacement.

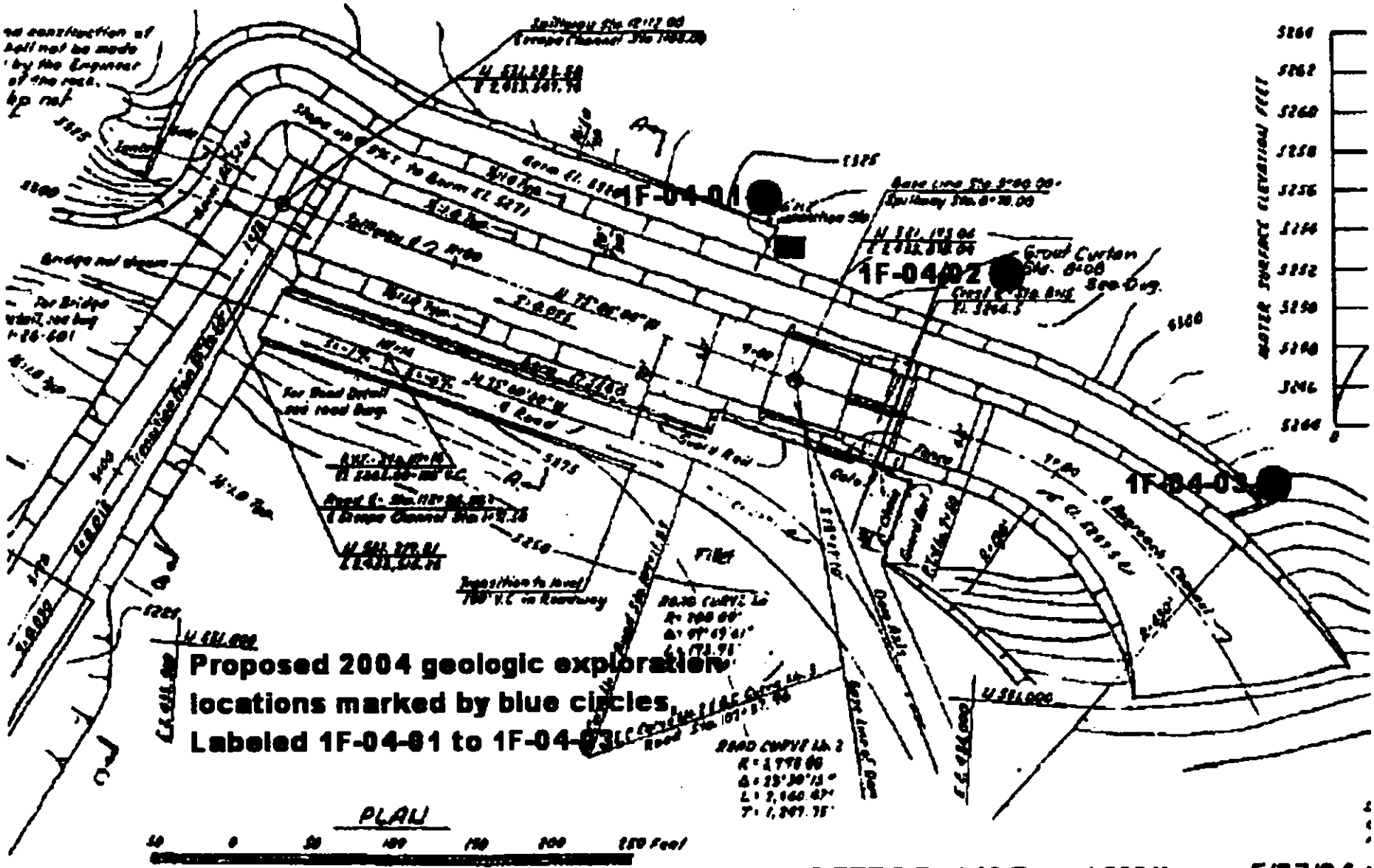
Appreciate your timely response and input.

Thanks,

Ken Pattermann PE, GE
Geotechnical Engineer
US Army Corps of Engineers
Geotechnical Branch - Soil Design Section
11th Floor - Cubicle 67
1325 J Street
Sacramento, CA 95814
Wk: (916) 557-7177

7/1/04





LL Anderson Spillway (cropped from Figure II-5 FERC Part 12 Report 2001) 5/27/04

EXHIBIT B

ROCK CORE DRILLING SPECIFICATION

3 May 2004
Revised 10 May 2004 after site visit attended by Ken Patterman, Pat Cantrell, Kim Jorgensen, and Richard McCune
12 May 2004
Revised after review by Clark Stanage

DRAFT SCOPE OF SERVICES
FOR
ROCK CORE DRILLING
AT
LL ANDERSON DAM

SCOPE OF WORK
FOUNDATION EXPLORATION PROGRAM
AT
LL ANDERSON DAM(FRENCH MEADOWS RESERVOIR)
MIDDLE FORK AMERICAN RIVER, PLACER COUNTY, CALIFORNIA

1.0. **Project Location**: This project is located at the LL Anderson Dam (French Meadows Reservoir) off Mosquito Ridge Road and approximately 36 miles east of Foresthill, Placer County, California.

2.0. **General Requirements**: The Contractor will be required to furnish all labor, material, and equipment necessary to perform the services described in the Equipment Schedule and the Exploration Schedule, attached hereto and part hereof. The equipment shall be furnished and maintained in good condition, complete with all necessary accessories and supplemental equipment, conforming to the manufacturer's specifications for the type and size required, and with all necessary competent operating personnel under competent full time supervision. In order to meet progress schedules, the Government reserves the right to discontinue at any time the use of unsatisfactory equipment and or personnel and to replace same at the Contractor's expense. The work shall be carried on in such order of precedence and at such times and for such periods as may be found necessary by the Contracting Officer. Contracted Equipment will be called out when and as needed and will be released when no longer required on the job. In the event that it is necessary to add additional units or equipment similar to those cited in the contract or other equipment necessary for the prosecution of the work, the Contractor and the Contracting Officer may make such substitutions or additions by written agreement.

2.1. **Damages**: If the Contractor refuses or fails to deliver equipment within the time specified or provided in this contract, or any extension thereof, or if the Contractor removes this equipment from the work site for any reason of the Contractor's own, with resulting delay in the start and/or performance of the work, the Contractor shall, in the absence of fixed and agreed liquidated damages, pay to the Government actual damages in an amount as determined by the Government in accomplishing the work on which the Contractor's equipment had been intended for use. Should a boring be lost due to negligence on the part of the Contractor, the boring shall be backfilled in a manner deemed acceptable by the Government Representative and another suitable boring shall be drilled at a nearby location approved by the Government Representative, all at no additional expenses to the Government.

2.2. **Protection Of Site**: The Contractor shall take all necessary precautions to preserve the landscape and vegetation as nearly as practical in their present conditions. Off-road driving and other activities will be restricted to that which is essential for access to the drill sites and efficient operation of the drilling and testing equipment. Water and air pollution will be closely monitored. Dust control, as conditions prevail, shall be mandatory on site and along any private access roads. All litter and debris will be cleaned up daily and placed in containers for off-site disposal. Wind-blown litter of any kind will not be permitted. After completion of the work, the Contractor shall remove all

debris, waste, trash, and unused materials or supplies and shall take all necessary action to prevent erosion and unnecessary scarring of the landscape from construction of temporary access roads and drill pads. The Contractor shall obliterate all signs of temporary structures, remove all stockpiles of excess or waste materials, and restore the site as nearly as possible to its original condition, including reseeding if required by the Government Representative.

2.3. **Services Required**: The services of a Drilling Contractor are required for an exploration drilling program. The purpose of the work specified herein is to determine the type, nature, and characteristics of the subsurface materials and the extent and conditions of the various materials as they exist to the depths and at the locations specified. This is to be accomplished by means of HQ-size core drilling and water pressure testing in bedrock and overburden drilling and sampling. Overburden drilling, if required, will be accomplished by using any drilling method capable of drilling through overburden material that may include clay, sand, gravel, or boulder-size rocks. Three (3) holes will be drilled vertically into bedrock. Two of these holes will be drilled and sampled to a depth of 120 feet. The third hole will be drilled and sampled to a depth of 60 feet. It is anticipated that no access development will be required. However, a chain saw may be required to cut a fallen tree and pull it out of the access road to get to the third drill site. The contractor will be required to utilize a track mounted drill rig at all drill sites. Bedrock in the vicinity is igneous (granitic) in origin. The listed type of bedrock is for general information purposes only and is not a guarantee of actual conditions to be encountered. The three (3) HQ-size diamond core drill holes total about 300 linear feet of core drilling. Hydraulic water pressure testing is required for each boring. These will usually be accomplished at 10-foot intervals while coring. However the hydraulic pressure testing intervals may be increased to 20 feet if the quality of rock cored has a good or excellent RQD (Rock quality Designation).

2.4. **Location**: Work is located at the LL Anderson Dam and vicinity, near Foresthill, Placer County, California. Actual drill locations will be determined in the field by the Government Representative.

2.5. **Start And Completion Dates**: Work shall start on or about the 17 May 2004 and is expected to be completed within 21 days of notice to proceed. The actual date and time to commence mobilization will be determined by the Government Representative.

2.6. **Work Week – Work Hours**: Normal work hours will be between 0730 and 1630 hours, Monday through Friday. If the Contractor elects to work other hours or overtime hours at the Contractor's convenience and expense, the Contractor will notify the Government Representative in the field, so as to adjust the daily work schedule.

2.7. **Records**: A representative of the Contracting Officer will keep an accurate log of the drill holes and records of all work.

2.8. **Special Requirements**: Prior to the start of work under this contract, the Contractor will provide proof of maintaining a California Water Well Driller's License (C-57) along with proof of insurance for each vehicle to be present at the project site. All Contractor personnel will have a current driver's license. A safety meeting will be held prior to commencing any work. The safety meeting will be conducted in the field.

3.0. **Exploration Schedule**:

3.1. **Mobilization And Demobilization**:

3.1.a. **Mobilization**: Mobilization shall consist of the delivery at the site of all plant, equipment, materials, and supplies to be furnished by the Contractor: the complete assembly in satisfactory working order of all such plant and equipment on the job; and the satisfactory storage at the site of all such materials and supplies.

3.1.b. **Demobilization**: Demobilization shall consist of the removal from the site of all plant and equipment and temporary installations after completion of the work and restoration of the work site(s) as nearly as possible to their original condition.

3.2. **Access Development**: No access development is anticipated.

3.3. **Diamond Core Drilling**:

3.3.a. **Method Of Drilling**: Drilling of HQ-wireline-size cores shall be by an approved standard and accepted method of rotary rock core drilling, as specified below, using diamond-set coring bits by means of which continuous and complete rock cores of HQ-wireline size may be obtained for any subsurface interval of bedrock specified for investigation. The methods shall provide at least 85% core recovery from both hard and soft rocks. Clear water only shall be used as a drilling fluid. Permission is currently being negotiated with Placer County Water District to allow the Contractor to obtain water for drilling purposes from French Meadow Reservoir.

3.3.b. **Equipment And Supplies**: Equipment to be furnished by the Contractor for core drilling shall include an approved hydraulic-feed diamond core-drilling machine complete with all accessories for taking continuous rock cores of HQ-wireline size to the depth specified. The Contractor shall use an HQ-wireline standard ball-bearing, swivel-type, double tube, split barrel core barrel similar in construction and equal in performance to E. E. Longyear "L" series, Diamond Drill Contracting Company's "HQ" barrel, or HQ wireline barrels which will produce core of not less than 2 ½-inch-diameter. The barrel shall be equipped with diamond-set core bits and approved core lifters. Two (2) core barrels will be required. Supplies for core drilling to be furnished by the Contractor shall include all casing, tees, drill rods, core barrels, core troughs, core boxes, and labeling blocks for core boxes, diamond-set coring and casing bits, piping, pumps, water, tools, and power required for drilling. Bits will be set with the proper size stones for the kind of rock being drilled. A water meter calibrated in either tenths of a gallon or in gallons shall be furnished and connected to the water supply line at all times and used

continuously during drilling operations to measure the rate of introduction of drilling water into the drill hole. Two (2) water meters are required to be on the job site at all times for the duration of this contract.

3.3.c. **Procedure**: All holes shall be drilled to the nearest natural block or end of run below bottom elevations or depths specified. HQ-size core is required from top of bedrock. Only one HQ core run, not to exceed a maximum of 2-feet from top of bedrock, shall be allowed before casing (maximum 6-inch-diameter) is firmly seated and cemented into bedrock. It shall be the Contractor's responsibility to maintain a watertight seal of the surface casing to the bedrock. The Contractor shall operate the drill at such speeds and with such water pressures as will ensure maximum core recovery in whatever kind of rock is being drilled. Five-foot maximum capacity core barrels will be permitted. Where soft or broken rocks are encountered, the Contractor shall reduce drilling speed and/or pressure in order to reduce core loss and keep core disturbance to the minimum. In no case shall the length of a single run exceed the capacity of the core barrel regardless of core loss or failure to block with a full barrel. "Dry blocking" will not be permitted, unless so directed by the Government Representative. Failure to comply with the foregoing procedures shall constitute justification for the Contracting Officer to require redrilling at the Contractor's expense of any boring from which the core recovered is less than 85% of the depth drilled into bedrock. Since the function of rock coring includes determination of the width, direction, extent, and spacing of rock fractures, the Contractor shall exercise particular care in noting and calling to the attention of the Government Representative any and all water losses, rod jerks, and other unusual coring experiences which, supplementing the core log, will provide additional information on the nature and extent of the fracturing. The use of rod dope, grease, detergents, fibrous materials, or similar substances for lubricating or sealing the hole to stop water loss except as specified in paragraph 3.4 is prohibited and use of clear water only will be permitted.

3.3.d. **Handling Of Drill Core**: The Contractor shall prepare a safe and secure place for handling and storing core at the drill site or within the area, as approved by the Contracting Officer. Core stored at the drill site will be stored in a lockable storage trailer or container sufficient in size to store the anticipated core boxes. Core taken from the core barrel shall either be placed by the Contractor into an approved core trough long enough to satisfactorily hold a full run of core, or the rock may be logged directly in the split-barrel core barrel by the Government Representative. The drilling of any run of core will not proceed until the Government Representative is handed the core barrel from the proceeding run and then takes preliminary measurements to determine the per-cent recovery of core. The Government Representative will then measure the stick-up, record any additions to the drill string, and then will direct the Contractor to proceed coring the next run. Any core recovered that is suspect to slaking will ordinarily be wrapped in "Saran"-type plastic wrap and then placed in the core boxes by the Government Representative. The cost of furnishing a secured, storage trailer at the site will be considered incidental to the drilling, and no separate payment will be made therefore.

3.3.e. **Core Boxes/Containers/Shipping Boxes**: Core boxes are required for storage, preservation, and shipping of the rock-core. These boxes will be furnished by

the Contractor and shall become the property of the Government. Design and construction of the core boxes (containers) shall be in accordance with Sketch #1 forming a part of this contract. Core Box Blocks shall be provided in two sizes, approximately 2-7/8-inch X 2-7/8-inch X 2-7/8-inch (cubes) and 2-7/8-inch X 2-7/8-inch X 8-inch long (rectangular prisms), both with one finished side, suitable for painting and die stamping. As an overall guide each core box will generally contain approximately 11 feet of cored material. An 8-inch block will be placed in the core box at each core loss zone and a 2-7/8-inch block will be placed at the top of each box and at the bottom of each run. Costs of furnishing the core blocks are to be included in the bid item for Core Boxes and no additional payment will be made therefore. During the period of service of this contract, the Contractor is required to have a minimum of 10 core boxes and a minimum of 50 core blocks of each size 2-7/8" X 2-7/8" X 2-7/8" (cubes) and 2-7/8" X 2-7/8" X 8" (rectangular prisms) available for use at the site at all times. The core boxes and core blocks will be stored in any manner required to keep them dry and clean, prior to use by the Government. Failure to have the core boxes and core blocks available on site in a clean, dry condition will result in suspension of work at the Contractor's expense. It is anticipated that each 120-foot-deep core hole will use approximately 11 core boxes and the 60 foot deep core hole will use approximately 6 core boxes.

3.3.f. **Care And Delivery Of Samples**: The Contractor shall be soley responsible for preserving all samples in good condition. Samples shall be kept from undue exposure to weather and all descriptive labels and designations on boxes shall be kept clean and legible until final delivery of the samples to, and acceptance by the Government Representative. The Contractor shall comply with all requests of the Contracting Officer concerning the care and protection of samples. Before completion of the contract and at such times as directed, the Contractor shall deliver boxed samples to the Government Representative at a point or points on the job site or to the United States Army Corps of Engineers Bryte Storage Yard.

3.4. **Cementing And Drilling Out Cement, HQ**: All weathered core loss zones and broken rock zones that interfere with drilling operations or result in substantial loss of drill water return, as determined by the Government Representative, shall be cemented when and as directed with quick setting cement. Generally, cementing of such zones will be directed when the bottom of the broken zone is reached or at a maximum of 5 feet of drilling after the water loss. When directed by the Government Representative, minor quantities of overfill and redrilling of two to five feet above the water loss zone will be allowed and paid for to prevent excessive water takes in fractures and cavities. When not directed, it shall be at the Contractor's expense. Each time before cementing, the hole shall be pressure tested. After cement has set sufficiently, the hole shall be drilled out and coring continued. The cost of drilling out cement will be paid for as a linear foot measurement under the bid item Cementing and Drilling Out Cement, HQ.

3.5. **Surface Casing:** Casing shall be firmly seated and shall be left in the hole whenever directed by the Government Representative or the Contracting Officer. While drilling and when conditions warrant, the top of the casing shall be equipped with a tee, so installed that a pipe or hose connected to the side of the tee will lead the return drill

water to a water tank installed by the Contractor. When necessary, the top of the tee shall be fitted with a bell nipple or other satisfactory device to prevent spilling of the drill water while drilling. The Government may require that all diamond core drilled holes be left open. If this is required, the Contractor shall leave each hole open to bottom depth and it will be cased with the appropriate sized casing firmly cemented into bedrock as described in paragraph 3.3.c. The casing shall extend a minimum of 2 feet above the existing ground surface, have a screw-on metal cap, and be equipped with a device suitable for locking with a Government padlock. If the Government requires that each cored drill hole be backfilled, a grouting bid item is included for that purpose. The Contractor will have on site steel hole covers that will be used to cover the drill hole until disposition of the drill hole is finalized.

3.6. **Standby Time**: Standby time shall be any time that drilling operations are delayed for the convenience of the Government by the request of the Government Representative. It is not to be used for Contractor caused delays or delays due to inadequate personnel, equipment malfunctions, or adverse weather conditions.

3.7. **Pressure Testing (Hydraulic)**:

3.7.a. **Definitions**: Hydraulic pressure testing shall be the operation of forcing clear water under pressure into subsurface rock formations through predrilled test holes for the purpose of determining the rock fracturing.

3.7.b. **Equipment And Supplies**: Pressure testing equipment to be furnished by the Contractor shall include the following: Water pumps with minimum capacities of 20-gallons per minute when operating at discharge pressures of 100 pounds per square inch (PSI), approved double and single expander wire line packers with rubber expansion elements constructed so as to test any 10- to 20-foot hole increment, water pipes so arranged that water may be admitted either below the bottom expander element or between the two expanders and connected to the pressure pump through a pressure relief valve, pressure gauge, and water meter. Supplies shall include all accessory valves, gauges, stockpiles, plugs, expanders, water for testing, standby pumps, fuel, pipes, pressure hoses, and tools necessary for maintaining uninterrupted tests. Water that is used for drilling purposes or pressure testing (hydraulic) purposes may be obtained from French Meadows Reservoir (negotiations underway).

3.7.c. **Procedure**: The Contractor shall pressure-test the hole in sections as directed commencing at the top of bedrock and progressing downward to the bottom of the hole or to such depths as determined by the Government Representative. Normal procedure will be to test approximate 10-foot increments to the maximum proposed depth of 120 feet and 60 feet into bedrock. However, every water loss and weathered or broken zone shall be pressure tested before cementing (see paragraph 3.4). Where core data from the test hole indicate only isolated zones that are open or fractured, pressure testing may be limited by the Government Representative to these zones alone. Unless otherwise directed, water pressure employed for each lift shall not exceed **one pound per square inch per foot of vertical depth to the upper expander and, in no case, shall**

the pressure be greater than 250 PSI. In making each test, the hydraulic pressure shall be stabilized and maintained when the required pressure is reached, as indicated on the pressure gauge. The volume of leakage shall then be measured by pumping water into the hole at the required constant pressure and shall be measured by suitable meters calibrated in either gallons per minute or cubic feet per minute. Measurements of volume of leakage ordinarily will be for 2 periods of 5 minutes. Upon completion of leakage measurements, the introduction of water into the hole shall be instantly terminated and the Government Representative shall log the pressure drop data. These procedures shall apply to each increment of hole tested. All drill rod joints and swivels shall be suitably wicked and tightened to maintain a water-tight seal during pressure testing. The Contractor will be required to make check tests at his own expense of the testing equipment and its assembly and arrangement prior to the first water pressure test of this contract and at any time the same equipment and its assembly are found to be faulty or leaking during or after the testing of any hole.

3.8. **Standby Fire Fighting Unit**: This unit is to consist of one 250-gallon minimum capacity pump truck or trailer, self loading with 100 GPM pump and 400 feet of ¾-inch-diameter hose and nozzle for fire fighting. Upon call out, the unit shall be on standby at the work site when crews are working. **Call out of the unit is anticipated because the drill sites are within the Tahoe National Forest.** This equipment is to be used for fire fighting purposes only! The Contractor will test this equipment in the presence of the Government Representative at least once each day. If, upon call out, the fire fighting unit is not available or is not operational, then all work will be halted until such time as the unit is on site and in operating condition. Any delays thus caused will be at the Contractor's expense. It will be the Government Representative in the field's decision to have the Stand by Fire Fighting Unit at the drill sites. If the Government Representative determines that the Fire Fighting Unit is not required on site, No Payment will be authorized.

4. **Supplementary Holes**: Core holes that are abandoned, or from which less than 85% core recovery is obtained in the bedrock, will be supplemented by other holes adjacent to the original in order to obtain satisfactory samples and required information. Penetration to the depth where the original hole was abandoned, or to the depths where unsatisfactory samples were obtained may be made by any method selected by the Contractor that in the opinion of the Government Representative will permit satisfactory completion and sampling below the elevation where the last satisfactory sample was obtained in the abandoned hole, or satisfactory sampling in the reaches where satisfactory samples were not obtained in the original hole. No payment will be made for supplementary holes that are required to be drilled to replace holes that were abandoned or from which satisfactory samples were not obtained because of negligence or mechanical failure of drilling and sampling equipment. Payment will be made for acceptable portions of these supplementary holes below the depths or outside the reaches for which payment was made for the original hole.

5. The following list of ASTM Standards and other references that will be observed and heeded during this project:

ASTM C 105 – Portland Cement

ASTM D 2113-93 – Standard Practice for Diamond Core Drilling for Site Investigation

ASTM D 3740 – Practice for Minimum Requirements for agencies Engaged in the Testing and / or Inspection of Soil and Rock as Used in Engineering Design and Construction.

6. **Measurement And Payment**:

6.1. **General**: The contract unit price for each item shall constitute full compensation for furnishing all plant, labor, equipment, materials, and supplies and performing all operations required for the completion of all work included under that item as specified herein, shown on the drawings, or directed by the Contracting Officer. All measurement for payment shall be made by or in the presence of the Government Representative. Linear measurements for payment will be made to the nearest tenth of a foot. Payment on an hourly basis will be made only for the hours, or fractions thereof, during which operation of equipment is ordered by the Contracting Officer. No hourly payment will be made for idle equipment caused by breakdown, or inadequacy of equipment or crew, by fire or accidental damage, or for any other reason resulting from fault or negligence of the Contractor. Measurement and payment for other items for which payment is provided will be made as specified under subsequent paragraphs applicable to those items. The reconstruction and maintenance of existing access roads will not be measured for payment and will not be paid for as such but will be considered as a subsidiary obligation of the Contractor.

6.2. ***Mobilization And Demobilization Of Drilling Equipment And Supplies***:

6.2.a. The direct cost of assembling all plant and equipment at the site preparatory to initiating the work and for removing it therefrom when the exploratory drilling program has been completed, will be paid for at the contract lump sum or unit price per job.

6.2.b. **Line Item no. 1001AB, "Mobilization and Demobilization"**. Sixty percent (60%) of the contract Mobilization and Demobilization lump sum price will be paid following completion of moving onto the site, including complete assembly in working order, of all equipment necessary to perform the required drilling operations. The remaining forty percent (40%) of the contract Mobilization and Demobilization lump sum price will be paid when all equipment has been removed from the site and the site has been restored to as close to original as possible.

6.2.c. In the event the Contracting Officer considers that the amount in this item (60%), which represents mobilization, does not bear a reasonable relation to the cost of

the work in this contract, the Contracting Officer may require the Contractor to produce cost data to justify this portion of the bid. Failure to justify such price to the satisfaction of the Contracting Officer will result in payment of actual mobilization costs as determined by the Contracting Officer at the completion of mobilization, and payment of the remainder of this item in the final payment under this contract. The determination of the Contracting Officer is not subject to appeal (SPD 84-1).

6.3. **Core Drilling, HQ Size (Estimated 300 LF)**: Core drilling of rock will be measured for payment on the basis of the linear feet of hole actually drilled in rock in accordance with the specifications in the Exploration Schedule. Payment will be made at the contract price per linear foot for **Line Item No. 1009, "Diamond Core Drilling, HQ Size".**

6.4. **Cementing And Drilling Out Cement, HQ (Estimated 25 LF)**: Cementing drill holes and drilling out cement will be measured for payment on the basis of the linear feet of hole actually cemented and drilled out in accordance with the specifications in the Explorations Schedule. Payment will be made at the contract unit price per linear foot **for Line Item No. 1057, "Cementing and Drilling Out Cement, HQ"**. No payment will be made for drilling out cement used to set the 6-inch-diameter surface casing. This is considered incidental to installation of the casing and no separate payment will be made.

6.5. **Standby Time (Estimated 5 Hours)**: Standby time for delays in drilling operations requested by the Government Representative will be measured for payment on the basis of hours, and portions thereof, actually used in accordance with the specifications in the Equipment Schedule. Payment will be made at the contract unit price per hour for **Line Item No. 1010 "Standby Time".**

6.6. **Pressure Testing (Hydraulic) (Estimated 30 Hours)**: Pressure testing (hydraulic) will be measured for payment on the basis of the number of hours, and portions thereof, that pressure testing (hydraulic) was actually performed at the direction of the Government Representative and in accordance with the specifications in the Exploration Schedule, or as otherwise required. Pressure testing (hydraulic) will be measured from the time the pressure testing is begun (entrance of the test equipment into the hole when directed) to the time of completion of the test as determined by the Government Representative (usually when the pressure test equipment has been removed from the hole). Prior to beginning a pressure test (hydraulic), the Contractor will ensure that adequate supplies of clear water are available for this test. Payment will be made at the contract unit price per hour for **Line Item No. 1033, "Pressure Testing (Hydraulic)".**

6.7. **Standby Fire Fighting Unit (Estimated 120 Hours)**: Upon call out, the fire fighting unit specified in the Explorations Schedule will be measured for payment on a straight hourly vehicle standby rate which shall also be made at the contract price for **Line Item No. 1023, "Standby Fire Fighting Unit".**

6.8. **Core Boxes (Estimated 30 Each)**: The Contractor shall provide core boxes as per included Sketch No. 1. In addition the Contractor will include the core box blocks as described in Paragraph 3.3.e. Note: There is one sketch labeled Sketch 1. This is for HQ size core boxes. Payment will be made at the contract unit price per each for **Line Item 1013.**

6.9. **Daily Subsistence (Estimated 15 Days)**: The Contractor is authorized a daily subsistence (perdiem) for this project if the Sacramento District Office is greater than 50 miles from the project site. Payment will be made at the contract unit price per day for **Line Item 1002.**

6.10. **Grouting (Estimated 300 LF)**: Upon completion of drilling, and at the direction of the Government Representative, each hole shall be grouted with a neat-cement grout, a sand-cement grout, or a bentonite-cement grout to the ground surface. The Contractor will be paid for the amount of grout introduced into the drillholes. **Costs are to include all materials and labor needed to complete the grouting process, plus disposal of all drill cuttings and cleanup. It is emphasized again that payment for drilling hours will not include drill rig usage during the grouting phase.** The contractor may spread the cuttings in the general location of the drill hole, at the discretion of the Government Representative. Holes should be grouted immediately upon completion of drilling, but should it be necessary to temporarily leave the hole open, it will be required that the hole be covered with a steel drill hole cover.

The borings should be grouted by injection through a grout pipe inserted to the bottom of the hole, which will displace the water or drilling mud and fill the hole with a continuous column of grout. The grout should contain bentonite or some similar swelling material to inhibit shrinkage and ensure a good seal. A grout mixture of about 4 to 7 percent bentonite and 93 to 96 percent portland cement is suitable for sealing boreholes. Sand may be added to the grout as filler if the proper mixing and pumping equipment are available. No pre-mixed concrete or addition of aggregates to grout will be allowed. Water used for sealing mixtures shall be clean and of potable quality.

GROUT MIXING: Grout mixing shall be done **thoroughly** by mixing with a paddle-type mechanical mixer, high shear mixer, or recirculating through a pump to insure that the mixture is uniform and there are no lumps.

Grouting should be accomplished by using a tremmie or grout pipe. Grouting material shall be applied in one continuous operation, from the bottom of the interval to be sealed, to the top.

Payment will be at the contract unit price for **Line Item No. 1014, Grouting.**

7. **Fire Prevention**: *Special Requirements. Smoking may be limited to designated* areas. All combustion equipment will be clean and in good working order. The total exhaust systems and spark arrestors shall be checked and repaired as needed before coming onto the job site. All units will have fire extinguishers on board or in the

immediate vicinity of the operation. Because of the proximity of the work site to public use areas and the possibility of longer work days, noise abatement shall be exercised to the maximum extent possible. **No work shall be performed or permitted without the Government Representative on site unless prior approval has been granted**.

8. **Occupational Safety And Health Act (OSHA) Standards**: The occupational Safety and Health Act (OSHA) Standards for Construction (Title 29, Code of Federal Regulations part 1926 as revised from time to time) and the Corps of Engineers Safety and Health Requirements Manual, EM 385-1-1, are both applicable to this contract. The most stringent requirement of the two standards will be applicable.

8.1. Included in the standards and emphasized here are the following:

Hard Hats
Safety Gas Cans
Proper Clothing, including
- **Shirts**
- **Long Pants**
- **Adequate Foot Protection, (Steel Toed Boots)**

8.2. **Written Safety Program**: A written safety program is required because a significant safety hazard exists due to the nature of the work and site conditions. The written safety program shall be submitted by the Contractor to the Geotechnical Lead Engineer or to the Government Representative prior to the start of work. The Geotechnical Lead Engineer is Mr. Ken Patterman (916-557-7177). The Government Representative is Richard L. McCune (916-557-5395).

9. **Insurance**: The Contractor shall, at his own expense, provide and maintain, during the entire performance period of this contract, at least the kinds and minimum amounts of insurance as required by California State Law.

9.1. Before commencing work under this contract, the Contractor shall certify to the Contracting Officer in writing that the required insurance has been obtained.

10. **Schedule**: All work will be completed within 21 calendar days of the notice to proceed (NTP).

10.1. The Contractor must, within five (5) working days prior to commencing work, submit to the Lead Geotechnical Engineer or the Government Representative, a copy of a practical work schedule showing the order in which the Contractor will drill the holes, the anticipated progress, and the anticipated dates for drilling to start and finish.

10.2. If the Contractor falls behind the schedule described in 10.1 above, the Contracting Officer may require the Contractor to take necessary steps to improve progress, including increasing the number of shifts, overtime operations, days of work, and/or the amount of equipment, all at no extra cost to the Government.

11. **Equipment Schedule (Line Items)**

11.1 The Contractor will furnish labor, materials, and equipment necessary for Foundation Exploration Program at L.L. Anderson Dam (French Meadows), Placer County, California.

Equipment Schedule

Item No.	Description	Unit	Estimated Quantity	Unit Price	Amount
	Furnish Labor and Materials and Equipment necessary for Foundation Explorations at Success Dam Spillway				
	EXPLORATIONS				
1001AB	Mob and Demob	1	Job	Lump Sum	$
1009	Core Drilling	LF	300	$	$
1010	Standby Time	HR	5	$	$
1014	Grouting	LF	300	$	$
1002	Daily Subsistance	Day	15	$	$
1057	Cementing and Drilling Out Cement	LF	25	$	$
1033	Pressure Testing (Hydraulic)	HR	30	$	$
1013	Core Boxes	Each	30	$	$
1023	Standby Fire Fighting Unit	HR	120	$	$

EXHIBIT C

RIGHT-OF-ENTRY AGREEMENT

RIGHT OF ENTRY AGREEMENT

This Right of Entry Agreement ("Agreement") is made and entered into this 25th day of May, 2004, by the Placer County Water Agency ("Agency") and the United States Army Corps of Engineers ("Government") concerning the entry upon property within the boundaries of the Agency's Middle Fork American River Project, Federal Energy Regulatory Commission (FERC) Project No. 2079, to do initial exploratory work, including drilling and geotechnical investigations, land surveying, and environmental and cultural surveys, for the purpose of investigating the feasibility of modifying the Agency's L.L. Anderson Dam, spillway, and/or French Meadows Reservoir, for the purpose of increasing flood protection below Folsom Dam.

NOW THEREFORE, it is agreed as follows:

1. The Agency hereby grants to the Government, a right to go upon property within the boundaries of the Agency's FERC Project 2079 in the vicinity of the French Meadows Reservoir, and the L. L. Anderson Dam and Spillway, which is shown on the Agency's Exhibit K drawings, Sheets 2 - 9, attached hereto and incorporated herein by reference (hereinafter "Property"), for the purpose of investigating the feasibility of modifying that dam, spillway, and/or reservoir, to increase flood protection below Folsom Dam. The right of entry includes the right to do initial exploratory work, including drilling and geotechnical investigations, land surveying, environmental and cultural surveys, but not construction of facilities.

2. Because much of the Property is within the jurisdiction of the United States Tahoe National Forest, the Government shall consult with the Tahoe National Forest prior to going upon and conducting any work on the Property, including any investigation of environmental or cultural resources and any use of roads.

3. Also because the L. L. Anderson Dam and spillway are subject to the State of California Division of Safety of Dams regulations, the Government shall consult with that Division to determine whether a Dam Alteration Permit is required from that Division and, if so, shall obtain such a permit prior to commencing any entry upon or work on the Property.

4. Any changes in reservoir operation requested by the Government to facilitate exploratory work must have the prior approval of the Pacific Gas & Electric Company and the Agency. Also, any exploratory work to be conducted by the Government may be subject to a Streambed Alteration Agreement or other permits required by federal or state law. It shall be the obligation of the Government to secure any and all such permits prior to commencing any work under this Right of Entry.

5. In entering upon and conducting activities upon the Property, the Government shall, **as applicable and in accordance with parameters established by Federal Law, abide by the terms** and conditions of the Agency's Federal Power Commission (now FERC) license for Project No. 2079.

6. This Right of Entry shall terminate on December 31, 2008, unless prior to that date the parties agree in writing to an extension.

7. If any action of the Government's employees or agents in the exercise of this right-of-entry results in damage to the real property, the Government will, in its sole discretion, either repair such damage or make an appropriate settlement with the owner. In no event shall such repair or settlement exceed the fair market value of the fee title to the real property at the time immediately preceding such damage. The Government shall also be responsible for any loss or damage to property or injury to persons resulting from any acts or omissions under this permit/Right-of-Entry Agreement pursuant to and limited by the provisions of Federal Tort Claims Act **28 USC sec. 2671 et.seq**, as amended. The Government's liability under this clause is subject to the availability of appropriations for such payment, and nothing contained in this agreement may be considered as implying that Congress will at a later date appropriate funds sufficient to meet any deficiencies.

8. Any notice, demand, request, consent, or approval that either party may or is required to give the other shall be in writing, and shall be either personally delivered or sent by first class mail in a postpaid envelope addressed as follows:

Agency: Placer County Water Agency
Attn: Stephen J. Jones
P. O. Box 667
Foresthill, California 95631

Government: District Engineer
US Army Engineer District, Sacramento
1325 J Street
Sacramento, California 95814

Attn: Chief, Real Estate Division

9. Upon termination of this Agreement, the Government agrees to restore the Property to the condition it was in prior to the Government's entry upon the Property, or to restore it to a usable condition as mutually agreed upon by the Agency and the Government.

10. If as a result of its exploration, the Government, or any other agency of the United States, deems it advisable to construct alterations in the L. L. Anderson Dam, Spillway, or French Meadows Reservoir for the purpose of increasing flood protection below Folsom Dam, such work shall not be commenced until further agreement is reached between the parities.

11. All tools, equipment, and other property taken upon or placed upon the land by the Government shall remain the property of the Government and may be removed by the Government at any time within a reasonable period after the expiration of this permit or right-of-entry.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement as of the date first written above.

Date: 5.10.04

PLACER COUNTY WATER AGENCY

By: _____

Its: CHAIR

Date: 5/25/04

UNITED STATES ARMY CORPS OF ENGINEERS

By: _____

MARVIN D. FISHER
Its: Chief, Real Estate Division
U. S. Army Engineer District, Sacramento

EXHIBIT D

QUESTION AND ANSWER EXCERPTS FROM E-MAILS

Jon Mattson

From: Mo Tebbe [mtebbe@fs.fed.us]
Sent: Tuesday, June 08, 2004 3:40 PM
To: O'Leary, Lynn M SPK; Vincent, Robert J SPK; Pattermann, Kenneth R SPK; McCune, Richard L SPK; Jon Mattson
Cc: mtebbe@fs.fed.us
Subject: LL Anderson Dam


comment to From Jon Mattson Ju...


fireplan rewrtitte.rtf (151 KB...


occupancy permit.doc (39 KB)


Master_haul_permit.rtf (4 KB)

There are several documents included in this e-mail:

Jon Mattson's notes dated and timed 6/7/04 5:17 with my comments/clarifications.

(See attached file: comment to From Jon Mattson June 7.doc)

Tahoe National Forest Fire Plan. This is a work in progress and I understand that 'measurement' by which the Forest Service monitors the potential of fire ignition and spread (sale activity level) is changing. This document has been adapted from timber sale fire plans; but applies to most Contract work in a forest setting. I've 'grayed' out some obviously inapplicable language. The fire plan could be adapted as I have a better understanding of what the operational/project plan is; where it will actually occur, etc. This is 18 pages long. (See attached file: fireplan rewrtitte.rtf)

This is the Occupancy Permit. Allow a minimum of 48 hours for District Ranger authorization. We will need to know the actual place that persons would be camping, a map is strongly advised. (See attached file: occupancy permit.doc)

I had been saying a road use permit was necessary; more correctly put a Haul Permit is necessary. We strongly suggest that more than 48 hours advance notice is given prior to move in. If the load is an overload, there is an additional permit that is not in an electronic form. It could be FAXed as requested. My understanding is that an overload requires presence of a Forest Service Engineer when crossing the Circle Bridge (access route to the work site). (See attached file: Master_haul_permit.rtf)

The District Ranger has determined that this project Will require a Special Use Permit and environmental documentation in order to authorize this use of National Forest land prior to the activity beginning. I need to know more about the project (location of drill holes to be specific) and to have a core IDT identify and document concerns, etc. Our wildlife biologist (a key individual) has been on family emergency leave and unavailable to ask even elementary questions. In addition I need to secure funding to do the SUP and NEPA.

Lynn -I could FAX you an estimate work plan so we can get a collection agreement - or better yet - an interagency transfer of funds in place so the balance of work can be completed.

Please contact me if you have any questions -
please share this with others that need to know

I would like to know who the lead Corp representatives are now.

Mo

-----Original Message-----
From: McCune, Richard L SPK [mailto:Richard.L.McCune@usace.army.mil]
Sent: Monday, June 07, 2004 7:21 AM
To: Pattermann, Kenneth R SPK
Cc: Jon Mattson
Subject: RE: Proposed 2004 Geologic Explorations for LL Anderson Dam Spillway

Included is a pdf file that describes the drill rig proposed to be used at LL Anderson Dam (French Meadows). This file was sent to me by Andy Taber of Taber Consultants, the Contractor that will be doing the drilling for us.

After coring is completed each drill hole will be backfilled with a cement grout that is mixed at the drill site and tremmied into the hole. Very little if any grout is spilled on the ground. Everything is pretty much self contained. As for concerns of grout seeping through cracks and into the reservoir, I do not foresee that happening. Grout will not be pumped under pressure into the formation like what might be accomplished if one was trying to grout all the fractures in the bedrock for, say a grout curtain. The drill hole will be grouted from the bottom up using the tremmie pipes.

Drill cuttings are very limited and virtually non-existent while rock coring. The small amount of drill cuttings are brought to the surface with the circulated drill water that is used to cool the drill bit inside the drill hole. All water is pumped into the drill hole on the inside of the drill rods and is circulated back to the surface and into the drill water tank and reused again and again. It is a pretty much self contained operation.

Any spills of hazardous material, such as diesel fuel, hydraulic oil etc is required by the Corps of Engineers to be cleaned up immediately. It is not beneficial to the environment nor to the drilling contractor to have spills as it is costly to both.

As for overnight accommodations, that can be worked out once we get a definitive date to begin the drilling. Whether it be at the Hell Hole Dorm, at the French Meadows Camp ground or the Foresthill-Auburn area.

Equipment storage will be minimal, as the drill rig will be a stand alone piece of equipment. A support truck will be used by the drilling contractor but that vehicle will also be used for transportation to and from the project site daily. The Government Geologist will have his own Government vehicle at the site. Cement bags will be on the drilling contractor's support truck. It is required that all litter and debris be picked up daily.

Water will be required and we need to find out if we will be able to utilize water from the reservoir. The water is used for drilling purposes. Also a fire suppression unit is required, which will basically be a water tank mounted on the support truck with a pump and hoses to be used in case a fire erupts, which is not likely. But, just to be on the safe side, it is required by the contract to have a fire unit available. This is not a fire truck.

-----Original Message-----
From: Pattermann, Kenneth R SPK
Sent: Friday, June 04, 2004 5:26 PM
To: McCune, Richard L SPK
Subject: FW: Proposed 2004 Geologic Explorations for LL Anderson Dam Spillway

Can you answer any of these questions and forward to Jon and me.

Thanks

-----Original Message-----
From: Jon Mattson [mailto:jmattson@pcwa.net]
Sent: Friday, June 04, 2004 12:37 PM
To: Pattermann, Kenneth R SPK
Cc: O'Leary, Lynn M SPK; Vincent, Robert J SPK; Steve Jones
Subject: RE: Proposed 2004 Geologic Explorations for LL Anderson Dam Spillway

Ken

Thanks for the drilling spec. It answers many questions I have. I have not been able to speak with Mo Tebbe of the USFS - she has been in the field, but hopefully Monday we can get together and find out what else they need, and give you and Bob Vincent a call. I did forward the spec and drilling locations to her via e-mail.

We need a few other things also. A list of all equipment being used will be required once your contractor is identified. If the cottage area is in use by the high school, and that area can't be used for equipment or material storage, would the laydown area across Mosquito Ridge Rd just west of the spillway channel suffice? Possibilities for overnight accommodations include our dorm at Hell Hole, French Meadows campground, motels in Auburn/Foresthill, etc. Since the drill holes are close to the reservoir, it is important that any grout used during the operation not be transmitted through cracks, etc. to any waterways. Due to the limited grout quantities, this may not be much of any issue, but it must be watched. Also, containment of cuttings or drill water in the immediate area of the drilling operation is important, and any spills of hazardous materials, hydraulic fluid, diesel fuel, etc. must be cleaned up immediately and removed in the proper containers to off-site waste facilities.

What would also be of interest to us would be a short memo including the sketch of the hole locations and the rationale for those locations, depths, etc., and particularly how the hole locations relate to the geologic conditions.

From Jon Mattson June 7, 2004 at 05:17 pm hours

All

This e-mail summarizes my notes on today's meeting (6/7/04) with Mo Tebbe of the Tahoe National Forest (TNF). The main topic was the upcoming exploratory drilling at the LL Anderson Dam spillway.

- We discussed the Corps plan for coring the 3 holes adjacent the spillway. This plan was sent in 4 e-mails to-date from Ken Patterman and Richard McCune, including a description of the holes and test methods, the drilling spec, and responses to questions by PCWA. Mo did not have some of the e-mails, so I forwarded them to her.

- Access to the drill sites is by the laketenders cottage access road, following an old construction road. Vegetation removal is not planned, other than a large downed tree, and possibly miscellaneous brush. The gate to the cottage should be double locked with USFS and contractor/PCWA locks. The USFS maintains helicopter landing pads near the cottage, and at the laydown area across Mosquito Ridge Rd., which are not to be obstructed. With the limited amount of drillers equipment, this shouldn't be a problem. The cottage is permitted to the Resource Conservation District (Rich Gresham), which may have high school students staying there (contact Harry Hickman). Camping will not be allowed near the cottage/spillway area.

Mo comment: If vegetation removal (trees) is necessary, the Forest Service must know as soon as possible, especially if they are green trees and over 10 inches in diameter.

When other locks are placed on the gate, the Forest Service shall be given a key to those locks.

To clarify the situation with the cottage – it is currently under a Special Use permit; the Forest Service will not be authorizing any other use of the cottage. Given the nature of the permit and who is permitted to be there; there must not be any overlap of uses or activities there, professional or otherwise.

Regarding camping, an occupancy permit would be issued from this office for any camping on National Forest lands. Typically we do not authorize camping in developed facilities such as French Meadows campground. Depending on the dates that camping may take place, it could be that camping in the developed facilities might be authorized (during 'public' (not contractor) low use periods). If there is authorization to camp in a developed facility the campers would pay for that use. There are good dispersed sites, and there is a Forest Service administrative site with a low fee, behind a locked gate, that might be authorized. – I need a proposal with as much information and advance notice as possible. There is a copy of the Occupancy permit attached so everyone knows what the typical terms and conditions are; additional terms and conditions may be added when the Forest Service has a better understanding of the project.

- The remnants of the coring operation may have a very small quantity of cuttings which is to be spread locally, and not near a watercourse or erodible area. Mo would like to OK this prior to any spreading.

Mo comment: I don't know yet if the water, that I understand would be recycled while drilling, can be surface spread. It depends on what the proposal is, the components of the water, etc. I understand that there would be rock based sediments in the water – anything else? Please understand this project is very unusual for the Forest Service and so there

is a need to learn. AT any rate a biologist would be consulted to determine if the cutting water could be surface spread. The Forest Service would have final determination.

- PCWA and USFS would like to attend any preconstruction site meetings.

- Question - Are the 3 core hole locations flagged on the ground right now?

Mo Comment – I'd like to know where the drill holes are planned to be – a description of designation would be most helpful for a preview and better understanding about surface uses. This will be necessary for our environmental documentation review.

- The Corps will be performing aerial surveys of at least the dam area, and possibly the reservoir also, depending on funding. Mo requested that the USFS be informed prior to their fly days.

- Contractor will be required to follow a Fire Plan provided by the Tahoe National Forest. This has a list of minimum fire prevention tool requirements, phone numbers, fire stage levels and work restrictions, etc. The Corps specification does identify a fire trailer, with a tank and hose.

- Mo will work on the following items, and will send an e-mail status report on her findings by tomorrow: Fire Plan requirements, blank copy of a Road Permit for equipment loads, any NEPA requirements, a blank camping permit, any biological concerns such as owls, any archaeological concerns, federal hazmat requirements, and whether a letter of authorization can be issued versus a Special Use Permit. Mo will coordinate with Lynn O'Leary on the collection agreement.

Mo Comment: In regards to hazardous materials:
It will be required that Contractor takes preventative measures to insure that any spill of oil or oil products doesn't enter streams or other waters. If the total oil or oil products storage exceeds 1320 gallons or if any single container exceeds a capacity of 660 gallons, purchaser shall prepare a spill prevention program.
If the amount of fuel exceeds 1320 gallons we'll require an engineered spill contingency plan.

Are there any other (besides petroleum products) hazardous materials or waste associated with this effort? There will be no explosives, right?

- The normal minimum reservoir storage for a normal year is 50,000 acre-feet, which equates to elevation 5186, or about 77 feet down from the maximum water level.
(Mo, if you have any corrections or additions to this, please note them in your status report)

Mo Comment:
There will be a requirement for weed seed free equipment – language something like this:

Contractor shall ensure equipment moved on to National Forest lands are free of soil, seeds, vegetative matter or other debris that could contain or hold seeds. The intent is to mitigate the importation of exotic or noxious weeds and seeds. Forest Service shall inspect equipment prior to use. Schedule in advance. There is a Certification to be completed by Contractor.
The cleaning shall take place off-forest or in a Forest approved area.