

December 14, 2006

Port of San Diego

Subject: Seismic Reflection Survey on Public Tidelands
Port of San Diego Public Parking Lot
Northwest Corner of Harbor Drive and Pacific Highway
Downtown San Diego, California

Dear Port of San Diego:

I spoke regarding the lack of required fault investigations on tideland properties in downtown San Diego last week. The active Coronado fault of the Rose Canyon Fault Zone is trending toward port property. Government official do not seem to be concerned about the lack of required fault investigations. I am very concerned; therefore, I am going to pay for the required \$12,870 seismic reflection study myself.

I am asking permission to conduct the non-invasive seismic reflection survey on Port of San Diego property at the northwest corner of Harbor Drive and Pacific Highway, directly south of the Navy Broadway Complex. Photographs of the seismic reflection method and the proposal from Geovision are attached.

Work would be done at night and should be completed within 8 hours. I am asking the Port close the small, usually empty, public parking lot from @ 5 pm to 5 am. I do not have a specific date as of yet, but I am working on schedule the project ASAP.

The work consists of placing geophone on top of the asphalt parking lot and using a small portable vibrator to produce seismic waves. The asphalt will not be harm. After the survey, I will personally sweep the parking lot and leave it in better condition then at the start of the survey. This same survey was conducted on Coronado, with no problem.

Please allow me to conduct the non-invasive survey and tell me if a permit is required to due the scientific study. Your help will be appreciated. If you have any questions, please do not hesitate to contact me.

Regards,

Katheryn Rhodes
371 San Fernando Street
San Diego, California 92106
(619) 523-4350
rhodes@laplayaheritage.com

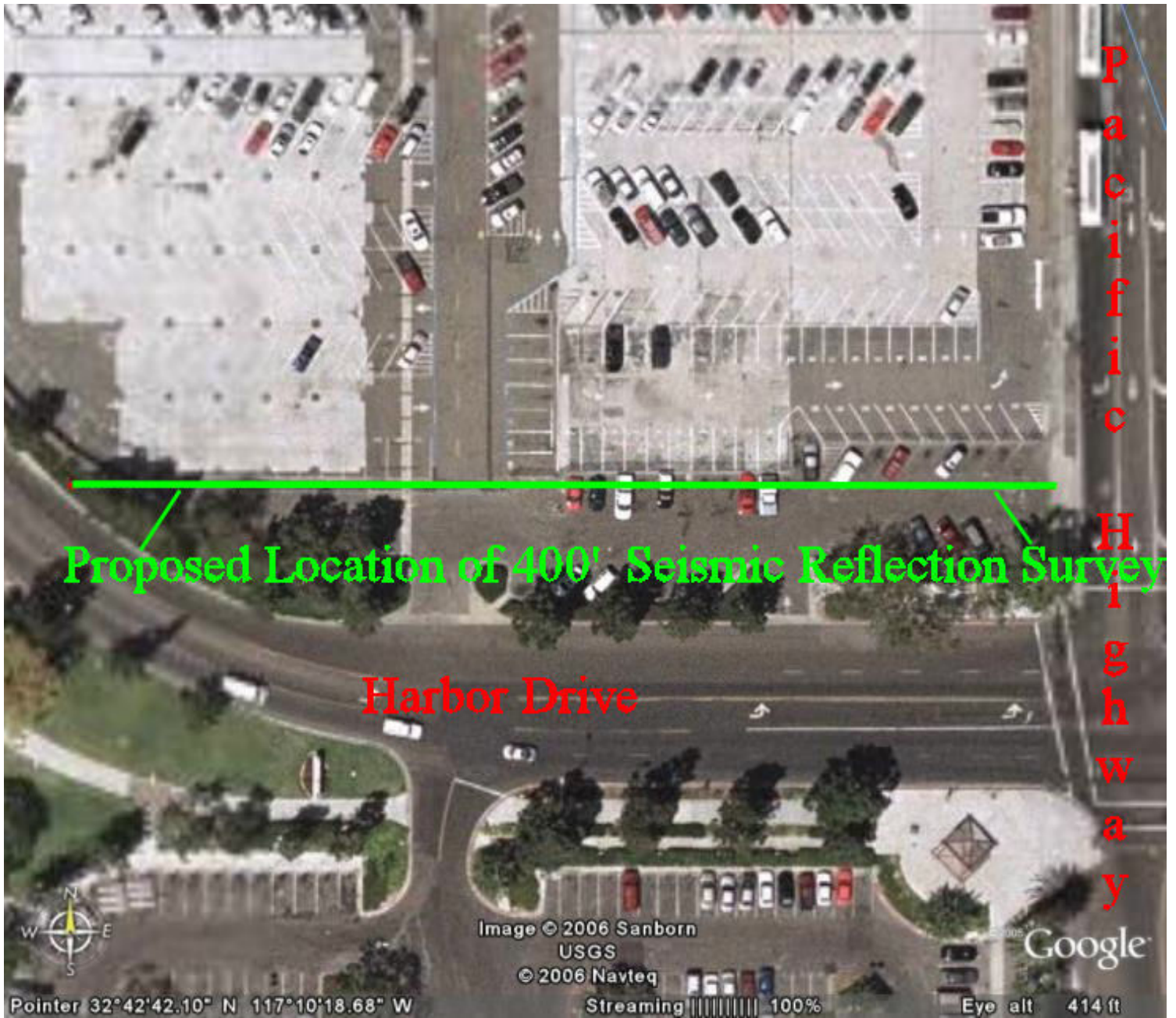


Figure 1 - Location of Proposed Non-Invasive, Seismic Reflection Survey on public tidelands.

Example of Seismic Reflection Survey & Vibrator.



Figure 4 Electromechanical Vibrator in S-Wave Mode and Land Streamer

3.2 Site Preparation

The S- wave seismic line was marked at 2 ft intervals using surveyors paint with every 10th station labeled for reference during data acquisition. The locations of the seismic lines were plotted on a site map provided by Kleinfelder and surveyed using a Sokkia engineers transit to obtain relative elevation data. S-wave reflection data was acquired using 96 Oyo SMC-70 40 Hz active horizontal geophones hot glued temporarily to the 4th Street sidewalk at 2-ft intervals and cabled into the seismograph. Seismic equipment was then set up for parameter testing and data acquisition as discussed in following sections.

3.3 Parameter Testing

Source parameter testing was carried out prior to data acquisition. The receiver interval and geophone array (single geophone) had been determined before the start of the survey. Sweeps of varying frequency bandwidths were recorded into a full (96 trace) split spread configuration in an effort to bracket the usable frequencies returning to the geophones from the subsurface. The initial testing, aided by frequency filtering in the recording instruments, determined that a sweep range of 20-300 Hz achieved the objectives of

SEISMIC REFRACTION AND REFLECTION METHODS



GEOVision geophysicists conduct high-resolution seismic refraction and seismic reflection surveys in support of a variety of engineering, environmental, and hydrogeologic investigations.

When conducting seismic surveys, acoustic energy is input to the subsurface by an energy source such as a sledgehammer impacting a metallic plate, weight drop, vibratory source, or explosive charge. The acoustic waves propagate into the subsurface at a velocity dependent upon the elastic properties of the material through which they travel. When the waves reach an interface where the density or velocity changes significantly, a portion of the energy is reflected back to the surface, and the remainder is transmitted into the lower layer. Where the velocity of the lower layer is higher than that of the upper layer, a portion of the energy is also critically refracted along the interface. Critically refracted waves travel along the interface at the velocity of the lower layer and continually refract energy back to surface. Receivers (geophones), laid out in linear array on the surface, record the incoming refracted and reflected waves. The seismic refraction method involves analysis of the travel times of the first energy to arrive at the geophones. These first arrivals are from either the direct wave (at geophones close to the source), or critically refracted waves (at geophones further from the source). The seismic reflection method involves the analysis of reflected waves, which occur later in the seismic record.

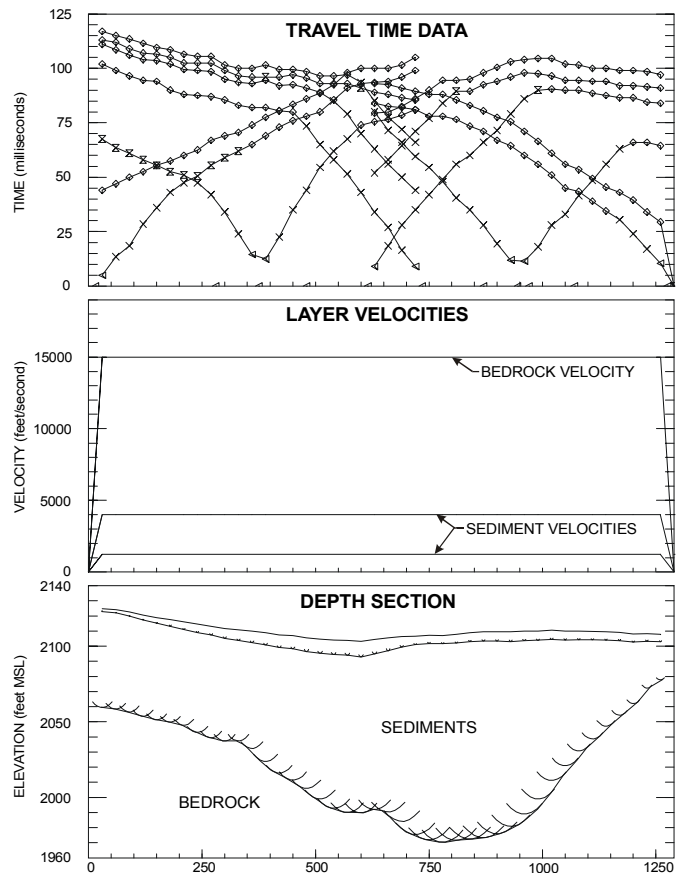
GEOVision typically uses the Oyo DAS-1 or Geometrics R24/60 seismograph for refraction and reflection investigations. Seismic energy sources used on past projects have included a sledgehammer, Betsy Seisgun™, EG&G Geometrics Dynasource (a vacuum-assisted weight drop), Bison Elastic Wave Generator (accelerated weight drop), IVI Minivib, and explosives.



Seismic Refraction Survey in the Borrego Valley

GEOVision geophysicists use the seismic refraction method to:

- Map bedrock topography
- Map faults in bedrock
- Estimate depth to groundwater
- Estimate bedrock rippability
- Evaluate rock properties



Seismic Refraction Survey to Map Bedrock Topography

“a bold new vision in geophysical services”

GEOVision geophysicists typically use the generalized reciprocal method (GRM) to analyze high-resolution seismic refraction data. Several computer programs are used in processing seismic refraction data including the program **FIRSTPIX™** by Interpex, Ltd., which allows manual or automatic picking of first breaks, the program **VIEWSEIS™** by Viewlog Systems, Ltd., which implements the GRM, and the program **SeisOpt** by Optim LLC for data modeling.

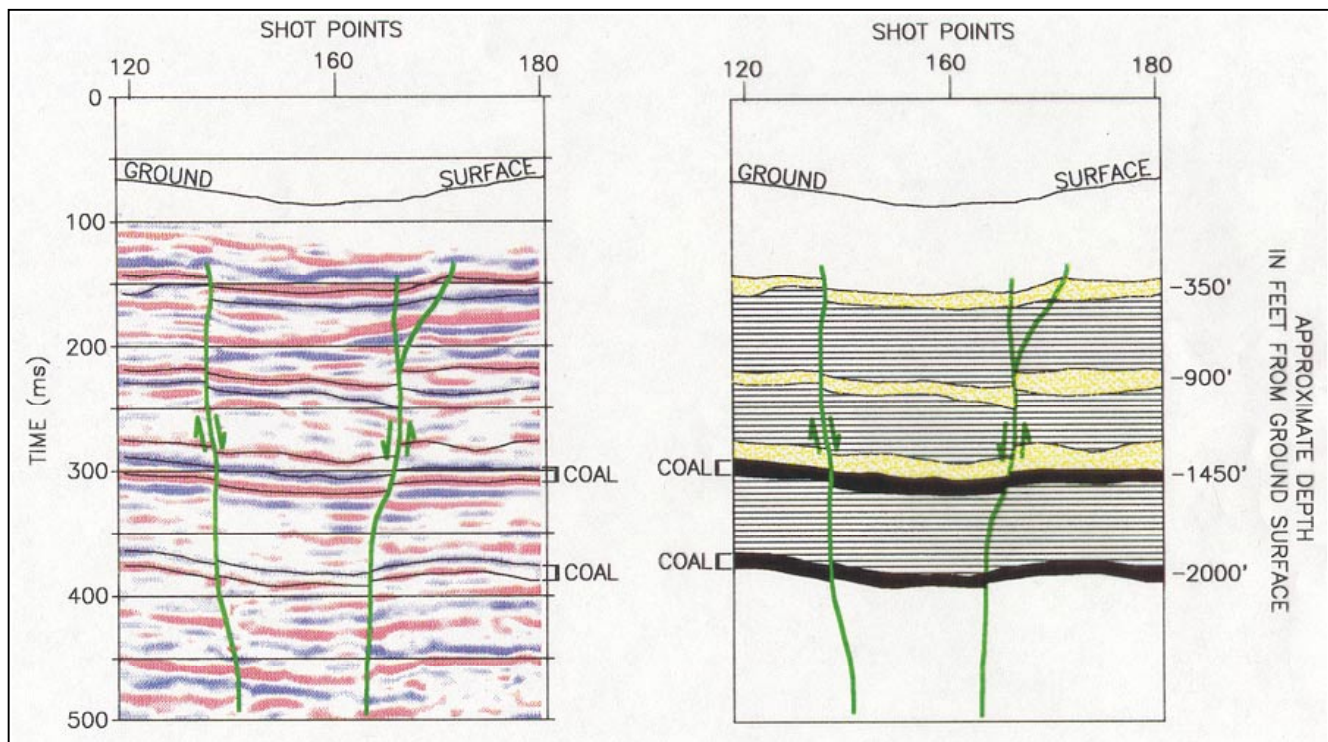
GEOVision geophysicists use the seismic reflection method to:

- Map subsurface stratigraphy
- Map lateral continuity of geologic layers
- Map buried paleo-channels
- Map faults in sedimentary layers
- Map basement topography



IVI Minivib Seismic Reflection Source

GEOVision geophysicists often use the program **SPW** by Parallel Geosciences to process seismic reflection data and the program **2Dpak** by Seismic Micro-Technology Inc. for seismic interpretation. Processing steps generally applied to reflection data include format conversion, trace editing, pre-processing (description of field geometry), spectral whitening or deconvolution, velocity analysis, surface consistent statics, velocity analysis, normal moveout corrections, prestack filtering, prestack gains, residual statics, and migration.



Seismic Reflection Survey to Map Coal Seams



December 6, 2006

Proposal No. P06-0965

Ms. Katherine Rhodes
371 San Fernando Street
San Diego, CA 92106

PROPOSAL
Seismic Reflection Survey
San Diego, California

Dear Ms. Rhodes:

GEOVision Geophysical Services is pleased to present this proposal to conduct a high-resolution S-wave seismic reflection survey in the parking lot of a facility in San Diego, California.

OBJECTIVE

The objective of the seismic reflection survey is to identify potential faulting along one 400-foot-long profile.

TECHNICAL APPROACH

We expect that the S-wave reflection method will be capable of imaging continuous geologic structures below a depth of about 20 feet providing there is sufficient contrast in velocity or density between the layers and the effects of subsurface infrastructure and noise can be overcome. We recommend S-wave methods because they can image geologic structure to shallower depth and have better resolution than P-wave methods. S-wave methods, however, cannot image to as great a depth. **The S-wave reflection survey proposed for this investigation is designed to image from 20 ft to about 150 ft.**

An Oyo DAS-1 48-channel signal-enhancement seismograph with one to two 48-channel expansion modules (96 to 144-channel system) and Input Output, Inc. RLS240 roll box will be used during this investigation. We recommend that a proprietary portable S-wave vibratory source (Microvib) be used during this investigation. Being a vibratory seismic source, the Microvib spreads its energy over time and is often successful in urban environments where signals generated from impulsive sources are overwhelmed by background noise (i.e. vehicle

traffic, construction noise). The microvib also generates much higher frequency signals than possible with impulsive sources such as a hammer or weight drop and in shear-wave mode can often map reflectors as shallow as 20 feet and map fault offsets as small as 1 to 2 feet (S-wave mode).

We will acquire S-wave reflection data at the site using a 2 ft geophone and source spacing. We expect to use 28 or 40 Hz horizontal geophones and to record 96 to 144 live channels. Seismic data will be stored on digital tape. Relative elevations of geophone locations will be surveyed with an engineer's transit and rod. It is assumed that the client will have the endpoints of each seismic line surveyed by a licensed surveyor to tie the survey to the State Plane Coordinate System, if necessary. **Otherwise we can plot the approximate locations of the seismic lines on maps provided by the client, or survey the lines using a submeter GPS.**

An outside seismic data processing specialist using sophisticated Unix workstation based software such as Promax will process the seismic reflection data. For each traverse the output of the data processing will be a time-section with distance along the horizontal axis and travel time along the vertical axis. **As the primary purpose of the investigation is to determine the approximate dip and dip direction and not to map depth to geologic strata, time-sections will be sufficient and depth conversion will not be necessary.** If it is necessary to correlate seismic reflections with specific geologic strata encountered in boreholes then it will be necessary to obtain **borehole velocity data.** Two methods are generally used to obtain this information: vertical seismic profiles (VSPs) and Oyo P-S Suspension logging. Costs will not be provided for this option, as it is our understanding that deep boreholes will not be available for velocity logging. If subsurface velocity data is provided by the client, it will be used to determine approximate depth on the seismic section.

A California professional geophysicist who will oversee field activities, data processing, and reporting will manage this project.

REPORT

The final report will include a discussion of field procedures, data processing, interpretation, and the results of the survey. A time-section with interpretation of potential faults will be included in the report. The report will be reviewed and approved by a California professional geophysicist.

SCHEDULE

One field day is anticipated to complete the field investigation. **Field work should be conducted at night and can typically be scheduled within 3 weeks of receiving notice to proceed. Results of the investigation will be available within 2 weeks of completing the field investigation.**

COST

This project will be conducted on a Unit Price basis as summarized in the following table.

High Resolution S and P-wave Reflection Survey with Vibratory Source

Item	Unit	Unit Price	Estimated Quantity	Estimated Price
Mob/Demob	Each	\$3,250	1	\$3,250
Field Investigation	Day	\$5,250	1	\$5,250
Data Processing	Shot	\$14.25	200	\$2,850
Report/Interpretation	Each	\$1,500	1	\$1,500
Total Cost				\$12,850

TERMS

We require written authorization (purchase order or letter) and a signed copy of the attached Standard Services Agreement prior to beginning work.

Please do not hesitate to contact me at (951) 549-1234 or by FAX at (951) 549-1236 should you have any questions regarding this proposal or require additional information.

We look forward to working with you on this project.

Yours truly,



Antony J. Martin, P.GP.
 Technical Director
 GEOVision Geophysical Services

Enclosures:
 Standard Services Agreement

**GEOVISION GEOPHYSICAL SERVICES
STANDARD SERVICES AGREEMENT
Reference GEOVision Proposal _____**

1. DEGREE OF CARE

In performing their professional services, GEOVISION Inc., herein after called GEOVISION, will use that degree of care and skill ordinarily exercised, under similar circumstances, by reputable members of their profession practicing in the same or similar locality. No warranty, express or implied, is made or intended by this proposal for GEOVISION's services or by furnishing oral or written reports of the findings made.

2. RISK ALLOCATION

(a) GEOVISION's liability and Client's exclusive remedy for any cause of action arising hereunder whether based in contract, negligence, or any other cause of action, shall be limited to the amount of \$25,000 or 1.5 times the total contract value, whichever is greater. All claims, including those for negligence or any other cause whatsoever shall be deemed waived unless made in writing and received by GEOVISION within one (1) year after GEOVISION's completion of the Services hereunder, or if such Services are furnished in connection with the construction or modification of any installation by client, within one(1) year from the date of substantial completion of such installation, but in no event more than three (3) years after GEOVISION's completion of each such Service performed hereunder.

(b) In the event the Client is unwilling or unable to limit liability to the amount set forth in Paragraph 2(a) hereinbefore, GEOVISION agrees to raise the limitation to \$1,000,000 and Client agrees to pay GEOVISION an additional fee equivalent to 5% of the total fee to be charged for the professional services, but never less than \$200. This charge will in no way be construed as being a charge for insurance of any type, but will be increased consideration for assuming a greater portion of the inherent risks connected with the work. If Client elects to have the limitation raised as set forth in this Paragraph 2(b) he is to so indicate by dating and initialing this paragraph in the space indicated hereafter.

3. CLAIMS BY CLIENT

In the event the Client makes a claim or brings an action against GEOVISION for any act arising out of the performance of GEOVISION's professional services, and the client fails to prove such claim or action, then the Client shall pay all legal and other costs incurred by GEOVISION in defense of such claim or action

4. WARRANTY OF AUTHORITY TO SIGN

The person signing this contract warrants he has authority to sign as, or on behalf of, the Client for whom or for whose benefit GEOVISION's services are rendered. If such person does not have such authority, he agrees that he is personally liable for all breaches of this contract, and that in any action against him for breach of such warranty a reasonable attorney's fee shall be included in any judgment rendered.

5. PAYMENT

Statements for services of GEOVISION will be submitted at GEOVISION's option either upon completion of work or on a monthly basis. Statements will be mailed to the Client at the address on the proposal or purchase document, and will be due immediately. Payments are to be made not later than 30 days following the date of the invoice. If payment is not so made, interest will be due on the amount of the statement at the rate of one (1) per cent per month from the date of the statement until the same is paid, and it is agreed that if suit is filed or informal proceedings are needed to obtain it to enforce payment of the statement, Client is to pay GEOVISION, in addition to the amount of the statement and interest thereon, all costs of collection including court costs, and such reasonable attorney's fees as the court may fix, or if collection is obtained without court action, then in the amount of fifteen (15) per cent of the total amount due, including interest.

6. INSURANCE

GEOVISION Inc. maintains for its own account General Liability Insurance for bodily injury and property damage with an aggregate limit of \$1,000,000 per occurrence and Workers Compensation Insurance as required by law and will furnish certificates of such insurance upon request. In the event the Client desires additional coverage, we will, upon the Client's written request, obtain additional insurance (if possible) at the Client's expense.

7. DEFICIENCIES

The Client shall promptly report to GEOVISION any defects or suspected defects in GEOVISION's services in order that GEOVISION may take such prompt, effective measures as will, in GEOVISION's opinion, correct or minimize the consequences of such defect.

8. DISPUTE RESOLUTION

In the event of any dispute, claim, question or disagreement (the "Controversy") arising from or relating to this Agreement or the breach thereof, the parties hereto shall use reasonable efforts to settle the Controversy. To this effect, upon notice from one party to the other of a Controversy, they shall consult and negotiate with each other in good faith and, recognizing their mutual interests, attempt to reach a just and equitable solution satisfactory to both parties.

8.1. Rules of Arbitration -- If the parties do not reach such solution within a period of sixty (60) days of the giving of notice of the existence of a Controversy by either party, then, upon notice by either party to the other, the Controversy shall be finally settled by arbitration administered by the American Arbitration Association in accordance with the provisions of its Commercial Arbitration Rules under the Emergency Interim Relief Procedures, which may be implemented even during the sixty (60) day negotiation period noted above.

8.2. Selection of Arbitrators the case shall be heard by a sole arbitrator, such arbitrator shall be an attorney with experience working with engineering contracts or disputes.

8.3. Governing Law for Arbitration -- This Agreement shall be governed by and interpreted in accordance with the internal laws of the State of California, excluding rules of conflict of laws. All arbitration proceedings shall be conducted in the County of Los Angeles, CA.

8.4. Authority of Arbitrators -- The arbitrators will have no authority to award punitive, special, consequential or incidental damages. The award shall be limited to actual direct damages suffered by the prevailing party. The arbitrators shall award to the prevailing party, if any, as determined by the arbitrator(s), all of its costs and fees. "Costs and fees" mean all reasonable pre-award expenses of the arbitration, including arbitrators' fees, administrative fees, travel expenses, out-of-pocket expenses such as copying and telephone, court costs, witness fees and attorneys' fees.

8.5. Confidentiality -- Except as may be required by law, neither a party nor an arbitrator may disclose the existence, content or results of any arbitration hereunder without the prior written consent of both parties.

9. HAZARDOUS MATERIALS/CONTAMINATED SOILS

GEOVISION's services do not include the performance of an environmental assessment. GEOVISION will make note of any evidence of contaminated soils or hazardous materials observed during site characterization or drilling but Client specifically waives any claim against GEOVISION as a result of GEOVISION's discovery of, or failure to discover, the presence of such conditions. In the event evidence of contaminated soils or hazardous materials is observed, Client agrees to make any disclosures required by law to the appropriate governing agencies and also authorizes GEOVISION to make such disclosures. Client acknowledges that the presence of contaminated soils or hazardous materials may result in disposal or other costs not currently contemplated and Client agrees to compensate GEOVISION for all such additional costs.

10. TERMINATION OF SERVICES

This agreement may be terminated by the Client or GEOVISION should the other fail to perform its obligations hereunder. In the event of termination, the Client shall pay GEOVISION for all reimbursable expenses and services rendered to the date of termination and any additional expenses necessarily incurred as a result of the termination.

The Terms and Conditions set forth herein as well those provisions described in the accompanying written proposal constitute the entire understanding of the Parties relating to the provision of services by GEOVISION to the Client. All previous proposals, offers, and other communications relative to the provisions of these Services by GEOVISION, oral or written, are hereby superseded, except to the extent that they have been properly incorporated. Any modifications or revision of any provisions hereof or any provisions contained in any Purchase Order, Acknowledgement or other form of the Client is hereby expressly objected to by GEOVISION and shall not operate or modify the Agreement. This agreement shall take effect upon acceptance and execution by GEOVISION.

Agreed to and accepted this _____ day of _____, 20 _____.

GEOVision Inc.
1151 Pomona Rd., Suite P, Corona, CA 92882

Client _____

By

By

Title

Title

Date

Date

Revised 5-1-05 J.G. Diehl