

PDR

WM-33

DAWN MINING COMPANY
CONTRACT NO. C1
EXCAVATION AND LINING
TAILINGS DISPOSAL PROJECT

Not to file



OCT. 1980



Subject: Dawn Mining Company
FORD, Washington

Re: Contract No. C1
Excavation and Lining
Tailings Disposal Project

You are hereby invited to submit your tender for the referenced construction work in accordance with all the instructions, terms and conditions contained in the subject tender documents.

Your attention is drawn to the closing date, appearing on Page 1 of the Information for Tenderers.

Particular attention is drawn to the need to complete the Tender Form in all respects including careful and full disclosures of the information called for in Statements A to E. To be considered, the Tender Form must be accompanied by the required Bid Bond and Agreement to Bond as stipulated in the General Conditions, Article 20, and Item 6 of the Information for Tenderers.

All tenders must be submitted in duplicate and completed in detail. To arrange a site visit prior to submitting your tender please contact Mr. J. E. Thompson at (509) 258-4511.

Yours very truly,
DAWN MINING COMPANY

J. E. Thompson,
Resident Manager

JET/jm

DAWN MINING COMPANY

FORD, WASHINGTON

CONTRACT NO. C1

EXCAVATION AND LINING

TAILINGS DISPOSAL PROJECT

OCTOBER, 1980

DAWN MINING COMPANY

FORD, WASHINGTON

CONTRACT NO. C1
EXCAVATION AND LINING
TAILINGS DISPOSAL PROJECT

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DAWN MINING COMPANY
FORD, WASHINGTON
CONTRACT NO. C1
EXCAVATION AND LINING
TAILINGS DISPOSAL PROJECT
INFORMATION FOR TENDERERS

1. SUBMISSION OF TENDERS

Tenders enclosed in a sealed envelope clearly marked "Tender for Contract No. C1 Excavation and Filling, Tailings Disposal Project" will be received by:

Dawn Mining Company
P. O. Box 25
FORD, Washington, 99013

Attention: Mr. J. E. Thompson,
Resident Manager

until P.S.T. on , 1980.

Tenders shall be submitted in duplicate on the Form of Tender supplied herewith, including the attached Statements. Fill in all blank spaces, state the total tendered price both in words and figures, sign and seal the Tender.

2. TENDER DOCUMENTS

The Tenderer shall verify that these Contract Documents include all the documents, parts and pages indicated by the Table of Contents and shall assume responsibility for the set of bound documents received by him being complete.

Report shortages to the Owner immediately.

J.T. P.1

3. WITHDRAWAL OR QUALIFYING OF TENDER

A Tenderer who has already submitted a tender may submit a further tender at any time up to the official closing time. The last tender received shall supersede and invalidate all tenders previously submitted. A tenderer may withdraw or qualify his tender at any time up to the official closing time, by delivery of a letter addressed as above and bearing his signature and seal as in his tender. The time and date received will be marked thereon. No other means of notification will be considered.

4. INFORMATION ON UNBALANCED TENDERS

Tenders which are incomplete, conditional, illegible or obscure or that contain additions not called for, reservations, erasures, alterations or irregularities of any kind, may be rejected as non-responsive. Tenders that contain prices which appear to be so unbalanced as likely to adversely affect the interest of the Owner may be rejected.

If the amount tendered for an item does not agree with the extension of the estimated quantity and the tendered unit price, the tendered unit price shall govern and the amount shall be corrected accordingly.

Tenders which are based on any unreasonable period of time for the completion of the works may be rejected.

The owner reserves the right to award the contract to the tenderer it considers most proper and qualified without regard to price and further reserves the right to waive irregularities or formalities at its own discretion.

5. DISQUALIFICATION OF TENDERS

Tenders will only be considered when:

- (a) they are received before the closing time on the stipulated date,
- (b) they are accompanied by a tender deposit as specified herein.

6. TENDER DEPOSIT

Each tender shall be accompanied by a 10% Bid Bond and an Agreement to Bond. The Bonds of the successful tenderer will be returned after the Agreement has been executed and a Contract Bond has been furnished in accordance with Article 9 of the Information for Tenderers and to the satisfaction of the Owner. The bonds of the unsuccessful tenderers will be returned within 60 days after opening of tenders.

If the tenderer withdraws his tender before or after he has been notified that his tender has been accepted by the Owner, or if he fails to execute the Agreement or to provide the Contract Bonds as required herein, when called upon to do so, he shall pay to the Owner the difference in cost between his price and the next lowest tender price.

7. ACCEPTANCE OF TENDER

Tenderers will be advised of the acceptance or otherwise of their tender by letter or telegram from the Owner as soon as the Contract has been awarded. The lowest of any tender will not necessarily be accepted.

8. INTERPRETATIONS AND ADDENDA

No oral interpretations shall be effective to modify the provisions of the Contract Documents. Every request for an interpretation shall be made in writing, addressed and forwarded to the Owner.

If a tenderer finds discrepancies in, or omissions from the drawings, specifications or other documents, or if he is in doubt as to their meaning, he should advise the Owner immediately in writing. A written addenda will be sent to all Tenderers if it is required in the opinion of the Owner.

9. AGREEMENT TO BOND

Within 10 days after notification of acceptance of his tender, the successful Tenderer shall execute the Agreement in quadruplicate, and shall furnish a 100% Performance Bond.

10. INSURANCE

Prior to the commencement of work under this Contract, the successful Tenderer shall furnish Certificates of Insurance from an approved company stating that the Tenderer is insured as required by Article 21 of the General Conditions of the Contract.

11. PROGRESS SCHEDULE

The Contractor shall provide a Progress Schedule in accordance with Section 1A.07 of this Contract, which will include the manpower requirements. This schedule shall be provided to meet the completion date stipulated on the Form of Tender.

12. PERMITS

The Contractor shall make application for and pay for the necessary building permit and other related permits, licenses, certificates etc. as specified in Article 23 of the General Conditions.

FORM OF AGREEMENT
BETWEEN CONTRACTOR AND OWNER

THIS AGREEMENT made in quadruplicate the _____ day of _____

19 _____ between:

hereinafter called the "Contractor"

and

DAWN MINING COMPANY

hereinafter called the "Owner"

WITNESSES:

that the Contractor and the Owner in consideration of the fulfillment of their respective promises and obligations herein set forth covenant and agree with each other as follows:

ARTICLE I

The Contractor will:

- (a) provide all the labour, trades, expendable materials, construction plant and equipment, all tools, supervision and management, services and facilities (except as specifically stipulated otherwise in the Contract Documents), and perform all the work and fulfill all obligations set out in the Contract Documents entitled:

Dawn Mining Company
Contract No. C1
Excavation and Lining
Tailings Disposal Project

and which have been prepared by Dawn Mining Company, and hereinafter called the "Owner"; and

- (b) diligently carry out the work of this Contract and as further directed by the Owner as work progresses, and substantially complete the entire work of the Contract, as certified by the Owner, on or before the dates shown thereon: _____

Time shall be deemed to be material and of the essence of this Contract.

ARTICLE II

In case of inconsistency or conflict between the provisions of any of the Contract Documents, then the provisions of such documents shall take precedence and govern in the following order:

- (1) this Agreement,
- (2) Addendum, (if any)
- (3) Information for Tenderers,
- (4) Supplementary General Conditions
- (5) General Conditions of the Contract,
- (6) the Specifications,
- (7) the Owner's Drawings,
- (8) the Owner's Instructions,
- (9) the Tender in detail.

The Contract Documents shall also include 100% Performance Bond.

The above Contract Documents are all to be read into and form part of this Agreement and the whole shall constitute the Contract between the parties and it shall ensure to the benefit of and be binding upon them and their successors, executors, administrators and assigns.

ARTICLE III

(a) The Owner will:

- (i) pay to the Contractor for and in respect of the works and the performance and observances by the Contractor of the provisions of this Contract, in lawful money of the United States.

_____ (\$ _____)
subject to such additions and deductions as may properly be made under the terms of this Contract.

- (ii) make interim progress payments upon the Owner's certificate in the amount of eighty-five (85%) of the value of the work completed up to, and including the last day of the month preceding the date of the certificate, less the aggregate of previous payments.

- (iii) on the completion of the entire work and ten days after all lien rights have expired, pay the balance due under the Contract.

(b) Provided that the Contractor complies with the conditions of the Contract, the Owner will issue the progress payment certificate within twenty-one days after the end of each monthly payment period and the Owner will pay the Contractor within 10 days of the date of the certificate.

- (c) If on account of climatic or other conditions reasonably beyond the Contractor's control, there are items of work that cannot readily be performed after all other work has been completed, then the payment on the Substantial Completion certificate shall not be delayed on account thereof, but the Owner shall stipulate in his certificate, the work that has been delayed and withhold from the certificate, a sufficient and reasonable sum until the delayed work is finished and such sum as will adequately protect the Owner against liens.

ARTICLE IV

Neither party to the Contract shall make any assignment of this Contract without the written consent of the other. The Contractor shall not assign any part or the whole of any monies due or to become due under the provisions of this Contract without the written consent of the Owner.

ARTICLE V

No implied obligation of any kind on or on behalf of, the Owner shall arise or be implied from anything contained in the Contract Documents, nor from any position or situation of the parties at any time. The express covenants and agreements contained herein made by the Owner, shall be the only covenants and agreements upon which any rights against the Owner may be founded.

ARTICLE VI

All communications in writing between the parties shall include reference to the Contract Number and shall be deemed to have been received by the addressee if delivered to the individual or to a member of the firm or to an officer of the Corporation from whom they are intended or if sent by post or by telegram addressed to:

The Owner

Dawn Mining Company
P. O. Box 25
FORD, Washington, 99013

Attention: Mr. J. E. Thompson,
Resident Manager

The Contractor

The General Conditions of the Contract hereto annexed, and all other aforesaid Contract Documents, are all to be read into and form part of this Agreement and the whole shall constitute the Contract between the parties and subject to law and the provisions of the Contract Documents shall ensure to the benefit of and be binding upon the parties hereto, their respective heirs, legal representatives, successors and assigns.

IN WITNESS WHEREOF the parties hereto have executed this Agreement under their respective corporate seals and by the hands of their proper officers thereunto duly authorized.

SIGNED, SEALED AND DELIVERED in the presence of:

OWNER

CONTRACTOR

DAWN MINING COMPANY

Name

Name

Signed

Signed

Name and Title

Name and Title

Signed

Signed

Name and Title

Name and Title

Date

Date

N.B. Where any legal jurisdiction, local practice or client requirement calls for proof of authority to execute this document, proof of such authority in the form of a certified copy of a resolution naming the person or persons in question as authorized to sign the Agreement for and on behalf of the Corporation or Partnership, should be attached.

THE GENERAL CONDITIONS OF THE CONTRACT

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1. DEFINITIONS

In all of the Contract Documents, the following definitions shall apply:

- "Contractor"
- means the party or parties named in the the Agreement to whom this Contract is awarded, or the Contractor's legally appointed representatives, assigns and executors, including Subcontractors by whom one or more of the various items of work included in the Contract are to be performed.
- "Owner"
- means the party or parties named in the Agreement on whose behalf the work included in this Contract is to be done, or the Owner's legally appointed representatives, assigns and executors.
- "Inspector"
- means the person, or persons duly appointed by the Owner for the purpose of ensuring that the works are carried out in accordance with the drawings and specifications.
- "Subcontractor"
- means a person, firm or corporation having a contract with the Contractor for the execution of a part or parts of the work included in the general contract, or to furnish material called for in the general contract and worked to a special design according to the plans or specifications, but does not include one who merely furnishes material not so worked.
- "Tenderer"
- means any party or parties tendering on one or more of the various items of work to be done under the Contract specifications.
- "Work" or "Works"
- means and includes all or any part of the work to be executed under the Contract, whether completed or uncompleted, whether temporary or permanent, and may be as originally set forth or as varied by the owner. The word "Work" shall also mean, where the text indicates, any or all of the equipment, materials and labour supplied or used by the Contractor.
- "Site"
- means the land and other property on, under, in or through which the works are to be constructed or carried out, and any other lands or property provided by the Owner for the purposes of the Contractor.

DEFINITIONS (continued)

- "Authorized",
"Reviewed",
"Acceptable",
"Satisfactory"
- and other words of like import, mean respectively "authorized by the Owner", "reviewed by the Owner", "acceptable to the Owner", "satisfactory to the Owner", etc.
- "Directed",
"Required",
"Ordered",
"Requested"
- and other words of like import mean respectively "directed by the Owner", "required by the Owner", "ordered by the Owner", "requested by the Owner", etc.
- "Equal to",
"or equal"
- means equal in all respects to the specified product and accepted for use in the work by the Owner, in writing
- "Substantial Completion"
- will be recognized and shall be interpreted to mean when the work of the Contract is essentially complete, sufficient to permit beneficial use by the Owner, and only items of work and cleanup which cannot be completed due to weather conditions or similar reasons outside the Contractor's control remain to be done.
- "Completion"
- will be recognized and shall be interpreted to mean when all work of the Contract has been satisfactorily completed and accepted, (except correction during the period of warranty).

2. DETAIL DRAWINGS AND INSTRUCTIONS

- 2.1 The Owner shall furnish, as may be necessary to supplement the Contract Documents, additional instructions by means of drawings or otherwise. All such additional instructions shall be consistent with the Contract Documents. In giving such additional instructions, the Owner shall have authority to make minor changes in the work which are consistent with the Contract.
- 2.2 Location of fixtures, outlets, conduit, piping and similar items, shown or specified but not dimensioned, shall be considered approximate. Except where the dimensions are provided by the Owner before work commences on each undimensioned item, the actual locations shall be as required to suit installation conditions.

- 2.3 This section shall not be interpreted as requiring the Owner to furnish shop drawings, or details normally shown by shop drawings or referenced standards or manufacturer's catalogues, or field measurements which the Contract Documents require the Contractor to make.

3. CONTRACT SCHEDULES

- 3.1 The construction schedule shall be based on general scheduling data forming part of the Contractor's tender as accepted in accordance with tender submission requirements. Within one week of commencing work, the Contractor shall prepare and submit to the Owner a construction schedule in a format provided by or authorized by the Owner which shall detail in weekly stages the proposed progress on the various items, structures, activities and subtrades comprising the Contract and show the manpower requirements associated with each such item. The plant and equipment to be employed shall also be indicated. Where applicable manufacturing of equipment and of materials to be fabricated specially for the work shall be scheduled and delivery dates of all material and equipment shall be indicated. The construction schedule shall be based on normal working hours and days unless specifically stated otherwise in the Contract.

When so stipulated in the Contract, particular portions of the work shall be scheduled and completed in accordance with any special requirements of the Owner.

- 3.2 The construction schedule after review by the Owner and incorporating revisions required by the Owner, shall form part of the Contract specifications. The Contractor shall submit contemplated revisions of the schedule to the Owner for review and shall adjust the schedule if required by the Owner in order to expedite the work to meet the completion date as provided for herein.
- 3.3 The Owner will require the Contractor to provide a suitable daily report showing actual manpower and construction equipment at work and a brief description of work performed and materials received on site. This report shall be submitted daily unless the Contractor is notified otherwise in writing, by the Owner.
- 3.4 If requested by the Contractor or the Owner, they shall jointly prepare a schedule establishing the dates at which the details drawings and instructions will be required from the Owner, and the dates for submission of shop drawings, bar lists, models and templates. The schedule will be subject to periodic review as progress on the work and any changing conditions require, and shall include due allowance for the time to check, correct and review drawings.

4. COMMENCEMENT AND COMPLETION OF CONTRACT

- 4.1 No work shall be done by the Contractor until official notification of the acceptance of his tender and instructions to commence work has been given by the Owner. The date of issue of such notice to commence work shall be considered as the date of commencement under the terms of the Contract, and in particular, relative to the required date of substantial completion of the work stipulated in the agreement. Such notice shall be given in writing or by telegram or telex addressed as listed in the pertinent article of the agreement.
- 4.2 The required date of substantial completion of the Contract written into the agreement shall be:
- (1) the date stipulated in the Contract specifications when such date has been predetermined by the Owner, or
 - (2) if no date has been predetermined and specified, the date determined from the "Time for Completion" of the work of the Contract stipulated in the tender as accepted by the Owner (commencing from the date of the notice to commence work).

unless another date or "Time for Completion" is mutually agreed upon by the parties hereto prior to execution of the Contract.

The required substantial completion date may be adjusted by extensions of time allowed under the terms of the Contract.

- 4.3 The Contractor shall start actual work within the period specified in the Contract Documents and shall continuously and expeditiously carry out the work in accordance with the construction schedule and to ensure completion by the required substantial completion date. Actual substantial completion of the Contract shall be the date that the work is accepted by the Owner as shown on the Substantial Completion Certificate.

5. TIME AND ORDER OF CONSTRUCTION

- 5.1 It is the intent and meaning of the Contract that the Contractor shall be allowed to prosecute his work at such times and seasons, in such order of procedure and in such manner as shall be most conducive to economy of construction, provided that:

- the work is constructed in accordance with the specifications and drawings,
- the work progresses efficiently, safely and in general conformity with the construction schedule referred to in Article 3,
- work during nights, weekends and holidays is in accordance with Article 6,
- the work is completed by the required date of substantial completion with authorized extensions thereto, if any.

- 5.2 Provided also that when the Owner is having other work done under separate contract or by his own forces, the Owner may direct the time and manner of constructing the work to be done under this Contract, to the extent that conflict will be minimized, the various works harmonized and the overall project or affected contracts are expeditiously brought to completion.
- 5.3 If, in the opinion of the Owner, there is undue delay in commencing work, or in carrying out the various phases of the work in accordance with the construction schedule, or the Contract completion dates are jeopardized in any other way, then the Owner may order the Contractor to employ additional labour force and construction plant or to work additional hours or by other means speed up the work, as the Owner deems necessary, without additional compensation to the Contractor. The provisions of this paragraph shall in no way relieve the Contractor of his responsibility for completing the work in accordance with construction schedules and by the required substantial completion date.

6. NIGHTS, WEEKENDS, HOLIDAYS

- 6.1 No work except in emergencies shall be performed during weekends, at nights, or on days which are legal holidays in the state in which the work is being performed, without the prior written consent of the Owner. The Contractor shall notify the Owner in writing at least four days in advance of a night, weekend or holiday during which the Contractor proposes to work, but only one notification shall be required for proposed regular night shift or Saturday work. Failure to give the required notice shall be considered as evidence that no work will be performed.
- 6.2 In emergencies endangering life, the structure, equipment, or property, the Contractor shall proceed immediately to fulfill his relevant contractual obligations and shall inform the Owner as soon as possible.
- 6.3 The Owner may order work to be performed at night, on holidays, or on weekends if in his opinion, the Contractor's progress is not adequate to meet the construction schedule. The Contractor shall not be entitled to extra compensation in respect of such an order.

7. COPIES OF CONTRACT DOCUMENTS

The Contractor shall receive one complete set of the signed Contract Documents following execution of the Contract. In addition, the Owner shall supply to the Contractor without charge, two copies of all the drawings and specifications as are reasonably necessary for the proper execution of the work.

The Contractor shall keep one copy of all Contract drawings and specifications, including additional instructions, change orders and final shop drawings, complete and in good condition, at his field office on the site. These documents shall be available to the Owner at the Contractor's field office.

8. OWNERSHIP OF CONTRACT DOCUMENTS AND MODELS

All Contract Documents and copies thereof and all models supplied by the Owner are and shall remain his property. They shall not be used on other work. They shall not be reproduced or revised in any manner without the written authorization of the Owner. Models supplied by the Contractor or by the Owner, are the property of the Owner.

9. SAMPLES AND TESTING

Before materials are used or incorporated in the work, the Contractor shall submit samples for the Owner's review, as called for in the specifications and as the Owner may reasonably require. Samples shall be labelled as to origin and intended use in the work and all samples shall be supplied free of charge and in addition, the Contractor shall provide, without cost, such labour and assistance as the Owner may reasonably require in obtaining samples and carrying out field testing. The samples furnished shall be subjected to such tests and inspection as may be required to establish that the materials, articles or parts represented meet the provisions of the specifications. The costs of all such tests shall be at the Owner's expense except for the above labour and assistance.

Such tests and the Owner's review of data provided shall not relieve the Contractor from his responsibility for ensuring that the materials and work conform to the specifications.

10. MATERIALS, EQUIPMENT, PLANT AND SERVICES

Unless otherwise stipulated, the Contractor shall provide, maintain and pay for all materials, equipment, plant, tools, parts and articles, and all services and facilities such as, but not limited to, water, light, power, heat, telephone and temporary buildings, necessary for the proper performance of the work under the Contract. All materials, articles and parts supplied shall conform to the samples which are accepted as meeting Contract requirements, and both workmanship and materials shall be of the quality specified, and true to the spirit and intent of the Contract. Unless otherwise specified, all items to be incorporated into the permanent work shall be new.

The Contractor shall not remove any equipment, plant, materials or temporary facilities from the site without consent in writing from the Owner. Such consent shall not be unreasonably withheld.

11. EMPLOYEES

- 11.1 The Contractor shall employ workmen who are careful, skilled and experienced in their particular trades and the class of work required. The Owner shall have the right to object to and require the Contractor to remove from the work any person employed by the Contractor, including persons employed by Subcontractors who, by misconduct or negligence in the proper performance of his duties, is considered by the Owner to be unfit for employment on the work.

If the Contractor fails or refuses to remove from the work any employee as requested by the Owner in accordance with this paragraph, the Owner may refuse to accept subsequent work on which the employee was involved and may refuse to approve payment for such subsequent work.

- 11.2 All workmen who perform labour in connection with the Contract, shall be paid such wages as are generally accepted as current from time to time during the continuance of the work for qualified workmen in the district in which the work is being performed, for the type or class of work in which they are respectively engaged, provided that wages shall in all cases be such as are fair and reasonable. The hours of work shall be such as are customary in the trade of the district where the work is carried on. In any event, wages and hours of work shall conform to applicable legislation governing in the place where the work is performed.

- 11.3 If so required, payrolls, books and records of the Contractor and subcontractors shall be open for inspection by the Owner for the purposes of this Contract. The Contractor shall submit to the Owner, if required, copies of payrolls to confirm or establish wage rates paid in connection with any work of the Contract.

- 11.4 Neither party shall employ or hire any employee or agent of the other party without the other party's consent.

12. CONTRACTOR'S UNDERSTANDING

- 12.1 It is understood and agreed that the Contractor has, by careful examination of the site and the Contract Documents before tendering on and executing this Contract, satisfied himself as to the nature and location of the work, the conformation of the ground, the character, quality and quantity of the materials to be encountered, the character of equipment and facilities needed preliminary to and during the execution of the work, the general and local condition, and all other matters which can in any way affect the work under this Contract.

- 12.2 If during the execution of the work, the Contractor encounters physical conditions or artificial obstructions which he considers constitute extra work for which he intends to claim additional payment and/or an extension of time, he shall immediately notify the Owner, in writing. The notification shall, where possible, include the Contractor's estimate of the additional payment and time required. The Contractor shall not proceed with the work in question until the Owner has inspected the work and made such measurements and tests as he deems necessary. The Owner shall decide the validity or otherwise of such claims but, without otherwise limiting the Owner's authority, he shall not consider as valid any such claims arising from weather conditions or conditions resulting from weather conditions, or from conditions or obstructions which would reasonably have been foreseen by an experienced Contractor. Failure of the Contractor to notify the Owner or to wait for the Owner's inspection shall be cause to reject any claim. It is expressly understood that any additional payment authorized by the Owner for such claims shall be based on quantity only and that no adjustments will be made to any unit prices set forth in the Contract for the category of work involved.

If there are no Contract unit prices for the category of work involved, then the value of the authorized additional work shall be determined in accordance with the provisions for valuation of changes of these General Conditions.

13. OWNER AND CONTRACTOR

- 13.1 The Owner is in the first instance the interpreter of the Contract and the judge of its performance; he shall use his powers under the Contract to enforce its faithful performance by both parties hereto. Subject to the specific provisions otherwise in the Contract Documents, the Contractor shall have complete control of his organization and shall exercise his control to ensure compliance with the Contract.

13.2 The Owner shall decide on questions arising under the Contract Documents, whether as to the performance of the work or the interpretation of the Contract Documents. If the Contractor considers any such decisions are at variance with the Contract Documents or involve changes in work already built, fixed, ordered or on hand in excess of the Contract, or are given in error, he shall so notify the Owner before proceeding to carry them out. In the event of the Owner and the Contractor failing to agree as to such excess or error and the Owner deciding to carry out such disputed work, the Contractor shall act according to such decision. Any question of excess cost due to the aforesaid cause shall be decided by arbitration in accordance with the provisions of these General Conditions. The Owner and the Contractor shall keep accurate records of time and materials expended on such disputed work, and the records shall be reported and checked daily in accordance with the provisions for valuation of changes of these General Conditions.

14. SUPERVISION BY CONTRACTOR

The Contractor shall provide on the work, at all times during its progress, a competent and reliable superintendent together, as necessary, with competent and reliable foremen in charge of individual shifts or sections of the work, all satisfactory to the Owner. The provisions of Article 11 shall apply to the superintendent and foremen as well as workmen. The superintendent shall not be changed except with the consent of the Owner unless the superintendent ceases to be employed by the Contractor. The superintendent shall be authorized to act for or on behalf of the Contractor, and all notices, communications, orders or instructions given or sent to or served upon the superintendent shall be considered as served upon the Contractor. Important directions shall be confirmed in writing to the Contractor. Other directions shall be so confirmed on written request from the Contractor in each instance. The Contractor shall give efficient supervision to the work using his best skill and attention.

If, in the course of the work, the Contractor finds any discrepancy, omission, error or departure from building codes in the Contract Documents or in the Owner's instructions, it shall be his duty to immediately inform the Owner in writing, and cease work on the part affected until he is instructed to proceed. Any work done after such discovery, until authorized, will be done at the Contractor's risk.

15. INSPECTION OF WORK

- 15.1 The Owner and their representatives shall at all times have access to the site and to the work and to all workshops, warehouses and other places where work is in preparation or temporary storage. The Contractor shall provide proper facilities and assistance for access to and for inspection of the work.
- 15.2 The Owner may appoint an Inspector to represent him at the site of the works, who shall have the authority to ensure that the work is being carried out in accordance with the Contract. If, for any reason, the Inspector or the Owner is not satisfied with the workmanship and materials entering in the work, they shall each have the authority to stop such work until proper action is taken by the Contractor to rectify the complaint, or to order the Contractor to reconstruct any completed part of the work which is not satisfactory, all to the satisfaction of the Owner and at no expense to the Owner.
- 15.3 If the specifications, Owner's instructions, laws, ordinances or regulations of any public authority or applicable codes or standards, require any work to be specially tested or inspected, the Contractor shall give the Owner timely notice of his readiness for inspection and if the inspection is by an authority other than the Owner, of the date and time fixed for such inspection.
- 15.4 Inspection by the Owner shall be promptly made. Work covered up prior to inspection or without the authorization of the Owner shall, if required by the Owner, be uncovered for examination and made good at the Contractor's expense. Work requiring continued inspection shall not be done without such inspection being available. The Contractor shall give the Owner reasonable notice when such work is to be started. Such work done without provision for inspection will be subject to special testing and inspection which may, in the opinion of the Owner, be required to verify compliance with the specifications and drawings, entirely at the Contractor's expense.
- 15.5 Re-examination of questioned work may be ordered by the Owner. If work which has been examined and found satisfactory initially is later questioned and uncovered and re-examined, then in the event that such work is found to be in accordance with the Contract, the Owner shall pay the cost of re-examination and replacement; otherwise the Contractor shall pay all costs of re-examination, replacement and making good the work.
- 15.6 Inspection, testing, review or any acceptance other than final acceptance shall be for the information of the Owner only and shall not be in any way binding or limiting or hinder the Owner in inspecting and testing the work. No interim or final inspection or acceptance shall in any way serve to relieve the Contractor from his obligations under the Contract.

16. CORRECTION AS WORK PROGRESSES

- 16.1 The Contractor shall promptly remove from the site all defective work and all materials condemned by the Owner as failing to conform to the Contract, whether incorporated in the work or not, and shall replace and re-execute his own work in accordance with the Contract and without additional expense to the Owner. The Contractor shall also bear the expense of making good all work of other contractors or the Owner, destroyed or damaged by such removal or replacement.
- 16.2 If the Contractor does not remove such condemned materials or work within the time fixed by written notice, the Owner may remove them and may store such materials at the expense of the Contractor, or sell such materials at auction or at private sale or otherwise dispose of such materials as may be convenient or proper. The Owner shall account for the proceeds of sale of such materials, if any, and for the net amount to the Contractor or expenses due to the Owner after deducting all costs and expenses of removal, storage and sale or other disposal of the materials that should have been borne by the Contractor. All net expenses due the Owner shall be paid by the Contractor on demand or the same may be deducted from payment due to the Contractor. The Owner shall be under no obligation to release any monies for the Contractor on the sale of these materials.
- 16.3 If the Contractor fails to re-execute the work within such time as may be fixed by the said or any subsequent notice then the Owner may cause such work to be re-executed by any means which he considers advisable and the cost of re-execution shall be paid by the Contractor on demand or the same may be deducted from payments due to the Contractor.

17. WARRANTY

- 17.1 All workmanship, materials and equipment supplied by the Contractor under this Contract shall be warranted for a period of one year from the date of acceptance of the work or for such longer periods as may be specially stipulated in the specifications. Such workmanship, materials, and equipment are to be in good quality, free from defects and in conformance with the Contract and related documents. Nothing in this article shall be deemed to restrict any more extended liability of the Contractor arising out of any law in force of the state in which the work is performed. The applicable period, as above, shall be known as the Period of Warranty.
- 17.2 The Owner shall give notice of observed defects promptly to the Contractor. Imperfections beyond ordinary wear and tear which may develop in workmanship, materials or equipment during the Period of Warranty are to be made good without cost to the Owner. Other work removed or damaged due to such imperfections or in making good such imperfections shall also be made good. The decision of the Owner shall be final as to the nature and cause of the imperfections, and for the necessity of remedying the same. All remedial work required and materials and parts to be provided shall be at least equal to the standards set forth in the specifications.

17.3 If the Contractor, after having been given seven days written notice to remedy the said imperfections, fails or neglects to comply then the Owner may perform the necessary work and deduct the cost of same from any monies owing to the Contractor, or the Contractor shall pay to the Owner on demand all expenses incurred in connection therewith. Provided that in the event of an emergency imminently endangering life, the structure, dependent equipment, or neighbouring property, arising from the said imperfections, the Owner may make such immediate arrangements for emergency repairs as he deems fit and will inform the Contractor of his actions in that respect and the Contractor shall pay to the Owner all expenses incurred in connection therewith, without cost to the Owner.

18. DEDUCTIONS FOR INCORRECT WORK

If in the opinion of the Owner it is not expedient to correct defective work or work not done in accordance with the Contract Documents, the Owner may deduct from the Contract Price the difference in value between the work as done and that called for by the Contract. The difference in value shall be determined by the Owner and such determination may be on the basis of the Owner's estimate of the cost to replace the work as done with that called for by the Contract.

19. EMERGENCIES

The Owner has authority in an emergency to stop the progress of the work wherever in his opinion such stoppage may be necessary to ensure the safety of life, or of the structure, or neighbouring property. This includes authority to make such changes and to order, assess and award the cost of such work extra to the Contract or otherwise as may in his opinion be necessary.

The authority vested in the Owner by this Article shall not place any obligation on him to exercise such authority and shall not relieve the Contractor of his obligations under the Contract.

20. CONTRACT BONDS

20.1 The Owner shall have the right to require the Contractor to provide and maintain in good standing order until the fulfilment of the Contract, bonds guaranteeing due performance of this contract and covering also the period of warranty as stipulated in Article 17, and the payment of all obligations arising under the Contract. Such bonds shall be obtained with a duly incorporated surety company acceptable to the Owner and authorized by law to transact business in the state where the work is to be carried out. The bonds shall be in the standard forms approved by the Owner.

- 20.2 If a bond or bonds is/are stipulated in the tender documents the costs attributable to providing such bonds shall be included in the tender price. If no such instruction is included in the tender documents and the Owner requires the provision of a bond or bonds by the Contractor after the receipt of tenders for the Works, the Contract Price shall be increased by the costs attributable to providing such bonds.
- 20.3 The Contractor shall report to and obtain the written consent of the Surety for all amendments to and increases in the Contract where the increase in value of the Contract is greater than ten (10) percent (%) as soon as an increase is indicated. The Contractor shall provide the Owner with a copy of the Surety's consent, and shall ensure continued bonding of the Contract.

21. INSURANCE TO BE OBTAINED BY CONTRACTOR

Prior to commencement of Work under the Contract, the Contractor shall obtain the following insurance:

- (1) Workmens' Compensation Board insurance covering employees of the Contractor as required by laws of the State of Washington.
- (2) Comprehensive bodily injury liability insurance including motor vehicle bodily injury liability insurance:
Each person \$1,000,000.00
- (3) Comprehensive property damage insurance including motor vehicle property damage insurance:
Each occurrence \$100,000.00
- (4) Each Contractor shall at its own expense, obtain and maintain during the contract period, all risks insurance covering all construction equipment owned or rented or for which such Contractor may be responsible. In the event of loss, or damage to the said equipment, or any part thereof, such Contractor shall if so requested by the Owner in writing, forthwith replace such damaged or destroyed equipment.

Any policy or policies of insurance that the Contractor carries as insurance against loss or damage to his construction equipment and tools shall include a provision therein providing for a waiver of the insurer's right of subrogation against the Owner.

- 21.1 Prior to commencing the Work and prior to receiving payment on substantial completion and final payments on completion of the work, the Contractor shall provide evidence of compliance with all requirements with respect to workmens' compensation, including payments due thereunder.

At any time during the term of Contract, when requested by the Owner, the Contractor shall provide such evidence of compliance by himself and any or all of his Subcontractors.

- 21.2 In addition to the requirements for Workmens' Compensation Board Insurance set forth above, prior to commencement of any work hereunder, the Contractor shall provide the Owner with a full and completed copy of each such Policy of Insurance, as provided above, establishing that the above requirements have been complied with, and further establishing that the Insurance Company or Companies which have issued the required policies have all agreed in writing to give the Owner fifteen (15) days written notice by prepaid registered mail prior to cancellation or material change of said policies. In the event that the Contractor does not carry Workmens' Compensation Board insurance but is subject to the provisions of the Workmens' Compensation Act of the State in which the work is to be performed, the Contractor shall furnish the Owner, prior to commencement of any work hereunder, with satisfactory evidence that he has complied with the provisions of the said Act.

- 21.3 The Contractor shall place the insurance which he is required to provide with insurance companies satisfactory to the Owner and shall insure continued coverage under the policies. Payments of insurance premiums shall be promptly made. Upon failure of the Contractor to make such payments, the Owner may pay the amounts due and collect such expenses from, or deduct them from payments due to, the Contractor.

- 21.4 Nothing contained herein shall limit the Contractor in obtaining and maintaining at his own expense, such additional or other insurance as he may consider necessary.

22. INDEMNITY

The Contractor shall indemnify and save harmless the Owner, his agents and employees, from and against all losses and all claims, demands, payments, suits, actions, recoveries, and judgements of every nature and description brought or recovered against the Owner or the Contractor by reason of an act or omission of the said Contractor, his agents or employees in the execution of the work or in the guarding of it, or any inventions, copy rights, trademarks or patents, and rights thereto, used in doing the work. The liability assumed hereby by the Contractor is restricted to the performance of this Contract and specifically excludes any liability for the permanent use or occupancy of the lands by the Owner and the rights of the Owner to construct the works, and for any patent or invention the plan or design of which was supplied to the Contractor by the Owner from which liability the Owner shall indemnify and save harmless the Contractor.

23. PERMITS, LAWS AND REGULATIONS

- 23.1 The work shall be performed in accordance with the laws, by-laws, rules and regulations of municipal, state and federal departments and regulating bodies, and other authorities having jurisdiction over the work included in this Contract, and shall be inspected and accepted as required by such authorities prior to the final inspection and acceptance of the work by the Owner.
- 23.2 The Contractor shall obtain all permits, licenses and certificates required in the performance of the work, and pay all fees in connection therewith, excepting only: easements and rights of servitude for the permanent works, approvals of Departments or Ministries of Government in connection with the use and occupancy of the permanent works, and such approvals as may be required in connection with the Owner's financing of the project.

24. PROTECTION OF PERSONS, PROPERTY AND WORK

- 24.1 The Contractor shall carry out the work by means and in a manner which will safeguard all personnel, the works, the Owner's property, adjoining property and work by others and to ensure that no rights are infringed. He shall provide adequate protection against accidents, injuries and/or damages to any person, property or equipment. He shall be responsible for making good such damage to the work and/or Owner's property as may arise out of his operations and personnel including also his Subcontractors, at his own expense.
- 24.2 The Contractor shall provide all barriers, barricades, fencing, warning signs, lights and other protection for the personnel on the site and the general public; shall ensure that all personnel directly or indirectly in his employ are provided with and wear hard hats and other safety accessories required in the performance of their work while on the site, and provide all other safety measures necessary in conformity with the requirement of this article and laws, by-laws, rules and regulations of industrial and labour departments of government, unions and construction safety organizations having jurisdiction.

25. USE OF PREMISES

- 25.1 The Contractor shall limit his operations on site to the lands made available by the Owner as shown on the drawings, specified or directed by the Owner.

- 25.2 Where other work being performed or to be performed on the project in accordance with Article 33 is dependent for its execution on the lands made available as in Article 25.1 above or on the work of this Contract, the Contractor shall co-operate to facilitate access to and provide working area for, the other work. Conflict of interests regarding such access and working area shall be referred to the Owner (See Article 5 of these General Conditions).
- 25.3 The use or occupancy of the works or any part thereof in accordance with Article 25.2 above shall not in any way relieve the Contractor from the provisions of this Contract except that the repair of damage deemed by the Owner, to be due to the operations of the party performing the other work, shall be the responsibility of that party.
- 25.4 The Owner may use or occupy a portion or portions of the work as the portion or portions is or are completed, and may use or occupy the entire works on or after the date stipulated in the agreement for substantial completion and any authorized extensions thereto whether the works are completed or not, without in any way relieving the Contractor or his surety from the provisions of the Contract except that the repair of damage caused during such use or occupancy and deemed by the Owner, to be due to negligence by the Owner, shall be the responsibility of the Owner.
- 25.5 The Contractor shall not load, or permit to be loaded, any structure or part of any structure in a manner which will endanger its safety.

26. CHANGES IN THE WORK

The Owner, without invalidating the Contract, may make changes by altering, adding to, or deducting from the work, the Contract sum being adjusted accordingly. All such work shall be executed under the conditions of the Contract except that any claim for extension or reduction of time caused thereby shall be adjusted at the time of ordering such change. Except as provided in Article 19, no change shall be made unless in pursuance of a written order from the Owner, and no claim for an addition to or reduction from the Contract sum shall be valid unless so ordered and at the same time valued or agreed to be valued as provided in Article 27. However, an order in writing is not required for an increase or decrease in the quantity of work which is the result of a variation from an estimated or provisional quantity set out in the Contract Documents and not a change in the extent of the work. The Contractor shall not claim for loss of profits or anticipated profits or damages at any time due to any decision to reduce or delete any part of the work, provided that the Contractor will be compensated for any materials brought to the site and work partially completed prior to the order requesting the deletion or reduction.

27. VALUATION OF CHANGES

27.1 At any time during the progress of the work, the Owner, by written order in accordance with Article 26, may direct the Contractor to perform work which, in the opinion of the Owner is in addition to the scope of the work required in the Contract and as defined in Contract Documents. Such work is referred to herein as "Extra Work" and may include the provision of labour, equipment, and materials or any combination thereof. The Owner shall order Extra Work only when it is, in his opinion, necessary for the proper completion of the work or to assist the work of the forces of the Owner or others at the site. The Contractor shall perform the Extra Work as and when directed by the Owner.

27.2 The value of any Extra Work shall be determined in one or more of the following ways, provided that the Schedule of Wage Rates (Statement "C") and Prices in the Form of Tender, together with any additional unit prices subsequently agreed upon, shall govern where applicable:

- (1) by unit price agreed upon
- (2) by estimate and acceptance in a lump sum
- (3) by cost plus percentage
- (4) by cost plus a fixed fee

27.3 When Extra Work is performed on a cost plus percentage or a cost plus a fixed fee basis; the Contractor shall submit to the Owner for acceptance, at the end of each day, a detailed report in duplicate showing the names, occupation and times of all personnel employed on such work, a complete Bill of Materials as supplied and installed in the work, and the description and time of equipment employed on the work during that day. The value of this Extra Work shall consist of the actual and necessary net cost incurred by the Contractor plus an agreed upon fixed fee or a percentage fee of ten (10) percent applied to certain portions of such net cost as hereinafter more particularly set forth.

The actual and necessary net cost shall consist of:

- (1) the direct wages, paid to labour actually and directly employed on the Extra Work plus payroll burden consisting of all statutory assessment and fringe benefits as stipulated in Statement "C" of the Tender Form;
- (2) the actual net cost to the Contractor of construction materials incorporated in the work supplied by the Contractor, directly. If used materials are employed in the Extra Work, the fair market value of same shall be deemed to be the actual net cost;
- (3) the rental charges for construction plant and equipment, not including small tools, used directly in the performance of the Extra Work; as stipulated in Statement "D" of the Tender Form;
- (4) payments to sub-contractors as per rates stipulated under 27.3 (1), (2), and (3) above.

The actual necessary net cost shall not include:

- (a) any allowance for overhead charges, or any wages and salaries of supervisory personnel, engineers, draftsmen, timekeepers, clerks, first aid men, safety men, warehousemen, storekeepers, and any similar personnel;
- (b) home and field office expense such as furnishings, office equipment, stationery, supplies, postage, telegrams and telephones;
- (c) home office and field superintendence;
- (d) general expenses and bonuses;
- (e) any charges for the maintenance, repair, depreciation of and wear and tear upon all plant and equipment. These charges are included in the rental charges and operating costs referred to in Article 27.3 (3) of the above.

27.4 The percentage fee shall only be applied to the amount indicated in Article 27.3 (1) and (2).

27.5 Compensation to the Contractor for materials no longer required due to any decision to reduce or delete any part of the work shall be limited to the actual costs to the Contractor of returning the materials to the supplier, as evidenced by billings or notes of materials to the supplier, unless the Owner, at his own discretion elects to accept and pay the costs of these materials.

27.6 Before commencing any item of additional work, the Contractor shall obtain the authorization of the Owner for all labour, plant and materials the Contractor proposes to use in the items of Extra Work.

27.7 The Contractor shall give adequate notice to the Owner of his intentions to commence or re-commence work on any item of Extra Work together with a description of the location of the work and the scheduled time of commencement. It is the intention of this provision that the Owner be afforded the opportunity of being present, if he so desires, at the time during the execution of the items of Extra Work.

28. PROGRESS ESTIMATES AND PAYMENTS

28.1 Before the first application for payment, the Contractor shall submit to the Owner a schedule of values of the various parts of the work, aggregating the total sum of the Contract, divided so as to facilitate checking, made out in such form and supported by such evidence as to its correctness as the Owner may direct. This schedule when accepted by the Owner shall be used as a basis for applications for payment, unless it be found to be in error.

- 28.2 At the end of each month the Contractor shall submit to the Owner, a progress estimate based on the above schedule and itemized in such form and supported by such evidence as the Owner may direct, showing the Contractor's right to the payment claimed. Inclusion in the progress estimate of materials delivered to the site but yet to be incorporated in the work, shall be at the Owner's discretion.

When submitting the second and succeeding progress estimates, the Contractor shall submit to the Owner, a Statutory Declaration showing evidence of payment to subcontractors, suppliers and others for all items included in the preceding progress estimate.

- 28.3 Following receipt of an application for payment, the Owner shall certify the account for payment within the period stipulated in the Agreement or advise the Contractor promptly in writing why the account is amended or disapproved. Such certification may provide for amounts to be withheld in accordance with Article 31.
- 28.4 If the Contract is based on or includes unit price items of payment, then payment will be based on the actual measured quantities of work performed in accordance with the Contract. The final total Contract amount shall be adjusted in accordance with the final actual measured quantities. It is expressly understood that where quantities are set out in the Form of Tender, or elsewhere in the Contract Documents, the quantities are approximate only and are given to serve only as a basis for comparing tenders.
- 28.5 All progress measurements, quantities and valuations shall be understood to be approximate only, and progress estimates and payments shall not bind the Owner in any way in the final measurement and valuation of the Contract on completion of the work. Any progress estimate may correct or modify any previous estimate.

29. ACCEPTANCE AND FINAL PAYMENTS

- 29.1 After Substantial Completion of the work, the Contractor shall send a written declaration to the Owner stating that he has completed the work and executed all duties and obligations under this Contract, except maintenance and delayed work if any. Work which has been delayed shall be set out in the declaration. Upon receipt of the above declaration, the Owner shall determine, by inspection, whether or not the work is in fact complete. If on such inspection, the Owner finds the work to be incomplete, he shall so notify the Contractor who shall promptly take such action as the Owner may require to ensure that the work is in fact complete, except as provided, before re-inspection by the Owner is requested.

- 29.2 When the requirements of Article 29.1 have been met, the Owner shall issue a Substantial Completion Certificate, dated the day of last inspection by the Owner.
- 29.3 When the delayed work is subsequently completed and inspected, the Owner shall issue a Completion Certificate, all in accordance with the procedures of Article 29.1.
- 29.4 No payment made to the Contractor and no partial or entire use of occupancy of the work by the Owner shall be construed as an acceptance of the work or any part of the work.
- 29.5 The Owner shall issue a Final Progress Payment Certificate within twenty-one (21) days of the date of the Completion Certificate. The Final Progress Payment Certificate shall show the final measured quantities and the total value of the complete work excluding any unsettled claims, less amounts to be retained by the Owner under terms of the Contract.

The issuance of the Final Progress Payment Certificate shall constitute an offer to waive all claims by the Owner otherwise than under Article 17 and the acceptance of such final certificate by the Contractor shall constitute an acceptance of the Owner's offer to waive and a waiver by the Contractor of all claims, except in both instances those claims previously made and still unsettled, if any.

- 29.6 Before any payment of retainage is made under the Contract, the Contractor shall submit evidence satisfactory to the Owner that all labour, material, equipment rental, assessments, and other indebtedness incurred in the prosecution of the work has been paid and that he is in good standing with the Workmen's Compensation Board and Government Departments having jurisdiction for Sales Taxes, Duties, Excise Taxes and labor. The Contractor, prior to requesting release of any retainage monies, must submit notarized evidence that no liens or claims have been placed against the premises, and if so, all liens or claims must be removed, submitting proof of the action.
- 29.7 If the terms of the Agreement provide for an amount to be retained by the Owner until the expiration of the warranty period, then upon the Certificate of the Owner that all obligations of warranty have been met, the Final Payment shall be made promptly to the Contractor, by the Owner.

30. TAXES AND DUTIES

Unless otherwise stated in the Contract Documents, the Contractor shall pay all government sales taxes, customs duties and excise taxes with respect to the Contract. Increase or decrease in costs to the Contractor due to changes in such taxes and duties after the date of the Agreement, shall increase or decrease the Contract price accordingly.

Where an exemption of government sales taxes, customs duties or excise taxes is applicable to the work of the Contract, the Contractor shall co-operate fully with the Owner and the proper authorities in seeking to obtain such refunds in accordance with the procedures established by the Owner.

31. PAYMENTS WITHHELD

The Owner shall have the right to withhold the whole or a part of any payment, otherwise due, on account of:

- (1) defective work not remedied;
- (2) liens or claims filed or reasonable evidence indicating probable filing of liens or claims;
- (3) failure of the Contractor to make proper payments to Sub-contractors or for materials, labour, equipment rentals, or insurance;
- (4) a reasonable doubt that the Contract can be completed for the balance then unpaid;
- (5) damage to the Owner or others.

When the above grounds are removed, payment shall be made for the amounts withheld because of them. The above list shall not limit the Owner's right to withhold payment or deduct from payments where such right is specifically provided for as in Articles 11, 14 or elsewhere in the Contract Documents.

32. SUBCONTRACTS

- 32.1 The Contractor agrees that the list of names of Subcontractors supplied prior to the signing of the Contract is the list of Subcontractors proposed to be used to carry out those parts of the work noted thereon and he shall not employ any to whom the Owner may reasonably object.
- 32.2 The Owner may require the Contractor to replace any Subcontractor, without additional cost to the Owner, by reason of any of the following:
- (1) where the Subcontractor has failed to commence work, or to diligently execute the work or any portion thereof, in accordance with the schedule and the Owner has given notice in writing to the Contractor requiring the subcontracted work to be expedited and the work is not so expedited within seven days;
 - (2) where the Subcontractor neglects or refuses to perform the work in accordance with the Contract;
 - (3) if the Subcontractor is adjudged a bankrupt or has become insolvent;
 - (4) if the Subcontractor has abandoned the work;
 - (5) if the Subcontractor is incompetent.
- 32.3 If the Owner required the Contractor to replace a Subcontractor for any reason other than as listed in 32.2, the Contract price shall be adjusted by the difference between the Subcontractors' tenders for subcontracted work as substantiated by the signed tenders of such Subcontractors, adjusted if necessary on the basis of the percentage of the particular subcontract work still to be completed.
- 32.4 The Contractor shall bind each Subcontractor to the conditions and requirements of the Contract Documents as applicable to the sub-contracted work.
- 32.5 The Contractor shall receive all notices, instructions, orders and other communications in respect to all subcontracted work and shall be held as fully responsible for the performance of such work and for the acts and omissions of all Subcontractors, and their employees as if the work were performed by the Contractor. In view of these responsibilities, the Contractor will not be required to employ a Subcontractor to whom he reasonably objects.
- 32.6 No contractual relation shall exist between the Owner and any Subcontractor, nor shall any provision of the Contract Documents be interpreted as creating any such relation.

33. WORK DONE BY OTHERS

- 33.1 The Owner reserves the right to have other work which is related or connected to the work of this Contract, of forming part of the overall project of which the work of this Contract is part, done by other contractors, by utilities, or by his own forces. The Contractor shall co-operate with the Owner, and with other contractors and with utilities working for the Owner, and the Contractor shall co-ordinate his work with that of others.
- 33.2 The Contractor shall inspect all work performed by others on which his own work depends for its proper execution and shall promptly report to the Owner, in writing, any defective or incomplete work performed by others. If no defects are so reported, or the Contractor fails to make the required inspection, commencement by the Contractor on the parts affected shall constitute acceptance of the work by others except as to latent defects not apparent at the time of the said commencement of work by the Contractor and shall further constitute a waiver of claim against the Owner for defective or incomplete work done by others except as to the said latent defects.
- 33.3 The Contractor shall do all fitting of his work required to make its several parts come together properly and to receive or be received by the work of others which is shown upon or reasonably implied by the Contract Documents. The Contractor shall not endanger any existing work by cutting, digging, or otherwise and shall not cut or alter the work of others without the consent of the Owner. Any cost caused by ill-timed work shall be borne by the party responsible therefor.

34. CLEAN-UP

The Contractor shall at all times, keep the work and his work areas free from accumulations of waste material or rubbish caused by his employees or work, and at the completion of the work he shall remove all his rubbish and all his plant, tools, equipment, temporary structures and facilities, and surplus materials from and about the work and shall leave the work clean and suitable for occupancy by the Owner unless otherwise specified.

In case of dispute, the Owner may remove the rubbish and charge the cost as the Owner shall determine to be just.

35. DELAYS

- 35.1 The Contractor shall not have or make any claim against the Owner for damages sustained due to delays in the progress of the work from any cause.
- 35.2 The date or time for substantial completion stipulated in the Agreement shall be extended by such reasonable period as the Owner may determine, if the Contractor is delayed in the performance of the work by:
- (1) an act or neglect of the Owner or his agents or employees, or of another contractor employed by the Owner,
 - (2) additional work ordered by the Owner when an extension of time is specifically granted in accordance with Article 26,
 - (3) causes or events beyond the control of the Contractor, such as strikes, lockouts, unusual delays by common carriers, and acts of mobs or vandalism, also fire and accidents whether or not such events are considered to have been beyond the Contractor's control.
- 35.3 In order to be valid, any request for an extension of time shall be submitted to the Owner in writing within three (3) days of the occurrence causing the delay. Only one request shall be necessary for a continuing cause of delay. A request for an extension due to delays in providing detailed drawings and instructions will not be allowed unless a schedule has been set out in accordance with Article 3, or until two weeks after a request for such information is made and then only if the request is reasonable.
- 35.4 The Owner shall have the right to suspend work wholly or in part by written notice to the Contractor if it becomes necessary or expedient so to do. Provided the suspension is not due to any fault of the Contractor, the Owner shall extend the time for completion if the Contractor's progress is affected by the suspension. Such suspension shall in no way void any conditions of the Contract. An extension of time for any reason shall not be deemed a waiver by the Owner of any rights under the Contract.

36. NON-FULFILMENT OF THE CONTRACT-

- 36.1 The Owner shall have the right, upon written notice to the Contractor and without process or action at law, and without prejudice to any other right or remedy the Owner may have, to take all or any part or parts of the work out of the hands of the Contractor and complete the work by whatever methods he considers expedient by reason of any of the following, namely;

- (1) if the Contractor has failed to commence work within the time stipulated in the Contract or to diligently execute the work or any portion thereof to the satisfaction of the Owner, and the Owner has given notice to the Contractor requiring the Contractor to employ additional labour and equipment or otherwise expedite the work and the Contractor fails within seven (7) days to follow such instructions;
- (2) if the Contractor fails to complete the work by the required date of Substantial Completion stipulated in the Agreement or such extended period as may be allowed under the terms of the Contract;
- (3) if the Contractor neglects or refuses to perform the work in accordance with the requirements of the Contract Documents or the instructions of the Owner, or to remove unsatisfactory materials or work, or disregards laws, by-laws, regulations and requirements governing the work of this Contract;
- (4) if the Contractor is adjudged bankrupt or has become insolvent;
- (5) if the Contractor has abandoned the work;
- (6) if the Contractor has made an assignment of the Contract without the required consent;
- (7) if the Contractor has, to the detriment of good workmanship or in defiance of the Owner's instructions to the contrary, sublet any part of the Contract.

36.2 When the work or any portion thereof has been taken out of the Contractor's hands, the Owner may take possession of the premises and of all materials, plant, equipment, tools and supplies which the Contractor and Subcontractor(s) have on site and complete the work to the satisfaction of the Owner, and the Contractor and his surety shall be liable for all loss, damage and expenses incurred by the Owner in completing the work. Further, the Contractor shall not in any way prevent or restrict the Owner, or others acting on behalf of the Owner, from completing the work. The Contractor shall not be entitled to any further payment or payments then due but not paid for by the Owner, until the work is completed and then only to the extent provided in Article 36.3.

36.3 When the work is completed by the Owner in accordance with the requirements of the Contract, the Owner shall determine the difference, if any, between:

- (1) the total of the loss, damage and expenses incurred by the Owner in completing the work together with all progress payments, if any, actually paid by the Owner to the Contractor and additional compensation, if any, paid by the Owner representative for his additional services, and
- (2) the total which would have been payable by the Owner to the Contractor under this Contract if the same had been completed by the Contractor.

If the above total (1) for the work as actually completed is less than the above total (2) which would have been payable, the Owner shall pay the difference to the Contractor. If the above total (1) for the work as actually completed is greater than the above total (2) which would have been payable, the Contractor or his surety shall pay the difference to the Owner.

Such action on the part of the Owner taken in pursuance of this Article shall not relieve or discharge the Contractor from any obligation under the Contract or imposed upon him by law.

37. TERMINATION OF THE CONTRACT

- 37.1 The Owner may, by written notice to the Contractor to that effect, terminate the Contract if such action becomes necessary or is in the interests of the Owner. Upon receipt of such notice the Contractor shall cease all operations except as may be directed by the Owner to complete any unfinished portion, and in the interests of safety to the work and the public. No action other than that as provided in this paragraph on the part of the Owner, nor the deletion of any part of the work or reduction of the quantities of any items shall be considered or interpreted in any way as evidence of the intent to terminate or termination of the Contract.
- 37.2 If the work is stopped by court order, or by order or ruling of other public authority or by order of the Owner, through no act, fault or neglect of the Contractor, his employees, Subcontractors or in the performance of his work, and no notice or decision to require the Contractor to start work again is issued within thirty (30) days of such stoppage, then upon ten (10) days notice to the Owner, the Contractor may terminate the Contract. If the Owner fails to pay to the Contractor the amount of a progress payment certified by the owner by the time the subsequent payment falls due, the Contractor may stop work and by written notice demand payment, and if the Owner fails or neglects to make such payment within seven (7) days of demand, then the Contractor may terminate the Contract, excepting always where payments are withheld for good and sufficient cause as provided under the terms of the Contract.
- 37.3 If the Contract is terminated, the terms and conditions of payment and of warranty under the Contract applicable at the time of completion and acceptance, shall apply as of the date of notice to terminate the Contract. The amount payable to the Contractor shall be determined as follows:
- (1) in the case of a unit price Contract, the sum of completed work measured and valued in accordance with the terms of the Contract plus the value of partially completed work determined in accordance with Article 27 but not to exceed the amount which would have been paid if such work had been fully completed;
 - (2) in the case of a stipulated sum Contract, in accordance with the schedule prepared under Article 28.1 and with Article 27 but not to exceed the amount which would have been paid for any uncompleted portion if it had been completed;

- (3) if the work is less than seventy percent (70%) complete, an allowance shall be added to (1) and (2) above for the cost of moving off the site, but the total value in any event shall not exceed the amount which would have been payable to the Contractor had he completed the work;
- (4) the total amounts determined as above shall be subject to deductions for amounts which the Contractor is liable to pay to the Owner in accordance with the Contract.

38. ARBITRATION

If a dispute arises between the Owner and the Contractor concerning a question of time, payment or damages, during the execution of the work or upon termination or a breach of the Contract, then either party to the Contract shall be entitled to give notice of such dispute to the other party and to request arbitration of the dispute; and then parties may agree to submit the particular matters which are in dispute to arbitration in accordance with the applicable laws of the place of building.

Arbitration shall not proceed until the work has been completed except in a case where it is necessary to proceed immediately while evidence is available in order to properly assess the dispute.

39. EMPLOYEE AND LABOUR RELATIONS

39.1 The Contractor shall co-operate with the Owner to maintain stable employee relations with respect to work being performed by him and/or his Subcontractors at the project site. In the event that unionized employees are engaged in the work, the Contractor will co-operate with the Owner and other Contractors and Subcontractors to avoid work stoppages and other labour disputes including union "jurisdictional" disputes.

39.2 For his part, the Contractor shall:

- (1) provide all labour forces required for the efficient execution of his work; and
- (2) deal with and be responsible for all employees and labour relations matters within the limits of his organization; and
- (3) comply with all statutes, regulations and orders relating to the protection and welfare of persons working for or employed by him and/or his Subcontractors at the project site; and
- (4) comply with collective agreements, if any, including any other arrangement, agreement or understanding between himself and any union which may be relevant to work at the project site; and

- (5) keep himself and the Owner's Representative fully informed with respect to all claims, contentions and the status of any Union(s) which may represent his own employees or the employees of other contractors and/or Subcontractors; and
- (6) supply the Owner's Representative with a copy of each of the agreements, arrangements or understandings referred to in (4) above; and
- (7) send an authorized representative to any and all job conferences and/or regular or emergency meetings called for the purpose of discussing employee and labour matters when so notified and requested to do so by the Owner's Representative; and
- (8) promptly forward a complete copy of the minutes of the conferences and/or meetings, referred to in (7) above, to the Owner's Representative; and
- (9) keep the Owner's Representative promptly and fully advised at all times with respect to all employee and/or labour relations matters relevant to his work at the project site; and
- (10) designate an authorized representative at the project site who will perform the functions set out in (2), (7), (8), and (9) above.

39.3 For his part, the Owner shall designate a Representative to co-ordinate employee and labour relations matters at the project site.

39.4 The designation of an Owner's Representative shall in no way relieve the Contractor of his responsibility for employee and/or labour relations matters relevant to his work at the project site; and the settlement of any and all work stoppages and other labour disputes, including Union "jurisdictional" disputes, shall in no way alter the terms, conditions and prices of the Contract.

40. GOVERNING LAW

The laws of the State of Washington shall govern the interpretation, validity and enforcement of this Contract.

41. SPECIAL PROVISIONS

41.1 The Contractor agrees to comply with all applicable rules and regulations pertaining to Equal Employment Opportunity as set forth in Title 41 C.F.R. Chapter 60 and amendments thereto, including the following provisions contained therein:

- (1) The Contractor will not discriminate against any employee or applicant for employment because of race, creed, color, or national origin. The Contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, creed, color or national origin. Such action shall include, but not be limited to, the following: Employment, upgrading, demotion, or transfer, recruitment or recruitment advertising; layoff or the rules, regulations and relevant orders of the Secretary of Labor.
- (2) The Contractor will furnish all information and reports required by Executive Order 11246 of September 24, 1965, and by the rules, regulations and orders of the Secretary of Labor or pursuant thereto, and will permit access to its books, records and accounts by the contracting agency (as defined in the Regulations published under Title 41, Chapter 60 of the Code of Federal Regulations) and by the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations and orders.
- (3) In the event of the Contractor's noncompliance with the nondiscrimination clauses of this contract or with any of such rules, regulations or orders, this Contract may be canceled, terminated or suspended, in whole or in part, and the Contractor may be declared ineligible for further Government contracts in accordance with procedures authorized in Executive Order 11246 of September 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order 11246 of September 24, 1965, or by rule, regulations or order of the Secretary of Labor or as otherwise provided by law.
- (4) The Contractor will include the provisions of paragraphs (1) through (4) in every subcontract or purchase order unless exempted by rules, regulations or orders of the Secretary of Labor issued pursuant to Section 204 of Executive Order 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. The Contractor will take action with respect to any subcontractor or purchase order as the contracting agency may direct as a means of enforcing such provisions including sanction for noncompliance; provided, however, that in the event the Contractor becomes involved in or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the contracting agency, the Contractor may request the United States to enter into such litigation to protect the interests of the United States."

- 41.2 The Contractor acknowledges that it may be required to make such filings and take such affirmative action as required by the Rules and Regulations approved by the Secretary of Labor under authority of Executive Order 11246 and agrees to furnish Owner with evidence thereof if requested.
- 41.3 The work to be performed by the contractor shall comply with all applicable rules and regulations in effect and as may be promulgated during the term of this Agreement pursuant to the Mine Safety and Health Act of 1977. Further information as to specific requirements may be secured by contacting:

MSHA
Education & Training Office
205 N 4th Street
Coeur d'Alene, ID 83814
Phone No. 1 (208) 667-2561 ext. 372

The Owner requires that the contractor obtain an "independent contractors" identification number as per the Act.

- 41.4 The Civil Rights Act of 1964, Title 7 Section 7031 provides for preferential hiring of indians by employers on or near an indian reservation. Dawn Mining Company is a subscriber to the preferential hiring philosophy and the successful contractor will be expected to operate under the provisions of the Tribal Employment Rights Ordinance adopted by the Spokane Tribe of Indians. A copy of the T.E.R.O. regulations included as Appendix D of the bid document.

DAWN MINING COMPANY

FORD, WASHINGTON

CONTRACT NO. C1

EXCAVATION AND LINING

TAILINGS DISPOSAL PROJECT

SPECIFICATIONS

1. GENERAL PROJECT DESCRIPTION

In the near future Dawn Mining Company's present tailing disposal facility will be filled. Therefore, the Company has made plans to construct a new tailing disposal facility. As shown on Figure 1, Plot Plan and Layout of Subdrain System, the new tailing disposal facility will be constructed immediately south of the present tailing disposal area. The tailing disposal facility will consist of a 70-foot deep pit with a surface area of approximately 28 acres. The side slopes of the pit will be three horizontal to one vertical (3h:1v) and they will be lined with 30 mil reinforced Hypalon to prevent seepage. Along the side of the pit adjacent to the existing tailing disposal facility, a 50-foot wide bench will be left to improve the overall stability. The other sides of the pit will be bounded by a 5-foot high and 30-foot wide dike constructed with materials removed from the excavation. The excess materials removed from the excavation will be stockpiled adjacent to the 5-foot high dike and other existing dikes for future use during reclamation. An internal subdrain system is planned on the bottom of the pit to accelerate the removal of water from the tailings once the tailing disposal facility has been filled.

The Contract is for the supply of all supervision, labor, tools and equipment to complete the work of excavating, filling and compaction of the dyke as shown on the drawing and/or outlined on the specifications and for the supply of all supervision, labor, tools, equipment, etc. to complete the work of installing sand bedding to the excavation, liner sheet, cover bedding sand, perforated drains and riser piping as shown on the drawings and/or outlined in the specifications. Unless otherwise specified, the Contractor shall be responsible for supplying everything necessary for the completion of the work described herein. The intent of this Specification is to provide the Contractor with an outline of the extent of the work involved. The Contractor shall satisfy himself as to the extent of work, quality of materials to be excavated and placed, and limits of the Owner's property.

The following is a brief description of the scope of the work and is not necessarily complete:

- relocate existing fence and provide additional materials as required to complete the installation
- stockpile coarse gravel around perimeter of existing tailings area
- stockpile fine sand and basalt from excavation in designated areas
- compact coarse gravel for dyke area around new tailing disposal area

- excavate for the drains, liner deying and riser piping
- install sand bedding from the stockpile to the excavated tailing disposal area.
- install liner sheet which will be supplied by the owner
- supply and install perforated drainage tile and pipe risers
- install drain rock and bedding sand cover to liner sheet
- install and/or supply and install rip-rap to the perimeter of the tailings disposal area and pipe discharge areas

1A.01 Contract Drawings

The drawings listed in Appendix A outline the work of this Contract and form part of the Contract Documents.

1A.02 SUB-CONTRACT

Provide with the Tender the names of all firms or companies who are to participate in the work. After award of the Contract, no change may be made to the list without written authorization of the Owner.

1A.03 CO-OPERATION

Co-operation and co-ordination with the Owner, and others is required by Articles 5 and 33 of the General Conditions. If conflicts arise, refer the matter to the Owner for his decision.

Assume full responsibility of co-operation, co-relation and co-ordination with Subcontractors and between Sub-contractors.

1A.04 WORK SITE

1. The Owner will provide the following work site area and facilities:
 - 1) Within the general limits of the working area, the Owner will allocate temporary storage space during specific periods of this contract.
 - 2) Area or areas for access to the above area or areas, but such access area or areas will not necessarily be for the exclusive use of the Contractor. See Article 1A.03 above.
2. Confine construction operations and facilities to the area or areas allocated for the work. Avoid unduly obstructing access routes. Erect barricades, markers, fences and post signs, as required, and ensure that personnel and equipment do not trespass on or damage property outside the allocated areas.
3. Maintain the work site, the building and disposal areas in neat, orderly conditions during the work of this Contract.

1A.05 SCHEDULES AND COMPLETION

Within ten (10) days after award of the Contract, the Contractor must submit his construction schedule and manpower requirements for review with the Owner. At various stages during construction, revised schedules shall be prepared to outline if he is within the schedule for completing the work.

The Contractor shall be solely responsible for scheduling and expediting the deliveries of materials, components and equipment that he is supplying to meet the schedule.

1A.06 INSPECTION

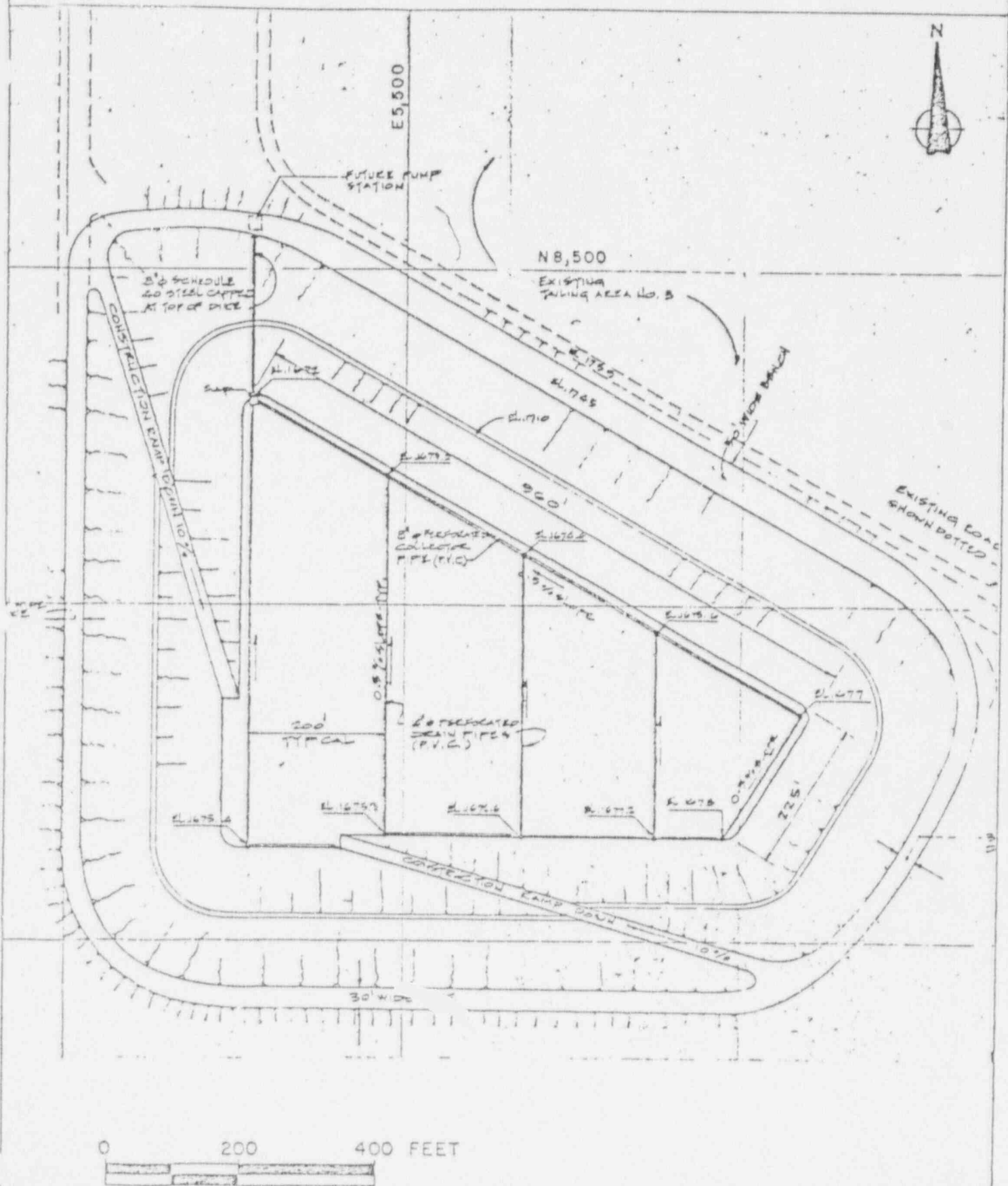
The Owner will arrange at his own expense, unless noted otherwise, for field inspection of all phases of the work. The Owner or his representative inspection staff shall have access during working hours, to all parts and areas of the work.

1A.07 EQUIPMENT

1. No Owner's supplied equipment will be available for installation of the materials supplied under this Contract.
2. The Contractor shall be responsible for his own maintenance as these also will not be available from the Owner's forces.
3. The Contractor shall provide all his own fuel as these are not available from the Owner's supply at the site.

PLOT PLAN & LAYOUT OF SUB-DRAIN SYSTEM

Figure 1



0 200 400 FEET

REFERENCE: KILBORN/NUS INC
NO. 7419-13-004
DATE: 14 SEPT. 79

Golder Associates

2. SITE CONDITIONS

Surface

The surface of the site is relatively level and averages approximately 1,740 feet in elevation. Most of the vegetation and topsoil have been removed and a small (approximately twenty-foot deep) pit was excavated along the northeast side of the site for borrow materials for previous dike construction.

The site is on a terrace formed by glacio-fluvial materials. About one-half mile away on the north and west sides of the site flows Chamokane Creek. The creek has cut through the terrace and formed a relatively steep scarp which is approximately 100-feet high.

Subsurface

The subsurface conditions were explored by drilling 17 borings. The locations of the borings are shown in Figures 2.1 and 2.2. The drill hole logs for each of the borings follow this section. The near surface materials at the site consist of loose-to-compact, brown, fine-to-coarse gravel and cobbles with some fine to coarse sand and a trace silt. Generally the cobbles are 6 inches or less in diameter. However, occasional boulder-size fragments up to 12 inches in diameter are present. The thickness of the coarse granular surface soils range from approximately 0 feet at GW 10, to approximately 35 feet at H2.

Generally the coarse granular surface soils are underlain by dense, brown, fine to coarse sand and gravel with a trace of silt. Occasional thin layers of compact brown clay are also encountered. Between the surface coarse granular materials and the underlying sand and gravel material. The dense sand and gravel generally grades finer (less gravel) with depth and contains occasional thin clayey or silty layers. The depth to which the dense sand and gravel extended ranges from 32 feet at BH2, to 70 feet at H1.

In the project area the dense sand and gravel is underlain by a clean, compact-to-dense, brown fine-to-medium sand with a trace of silt. This sand is poorly graded and contains occasional clayey or silty layers. The clean sand was encountered in most holes in the project area. The depth to which this fine-to-medium sand extends ranges from 75 feet at H1, to 164 feet at GW9 .

Based on limited drill hole information and reflection seismic work the possibility exists that basalt underlies a portion of the eastern half of the tailing disposal area. The depth of the basalt is uncertain but it is possible that some of it may be encountered during the excavation for the tailing disposal pit. Details concerning the location and extent of the basalt should be obtained directly from Dawn Mining Company personnel in Ford, Washington. Underneath the rest of the site, the fine sand is underlain by a stiff clay. This clay is generally found at depths greater than 100 feet below the surface and the surface of the clay dips moderately towards the nearby Chamokane Creek.

Subsurface cont.

Table 2.1 summarizes the information available from the hole logs.

Groundwater

The groundwater table (Figure 2.3) is well documented and it is not expected to be encountered during excavation. The possibility exists of minor flows of water associated with discontinuous thin clay layers found in the sands at the site.

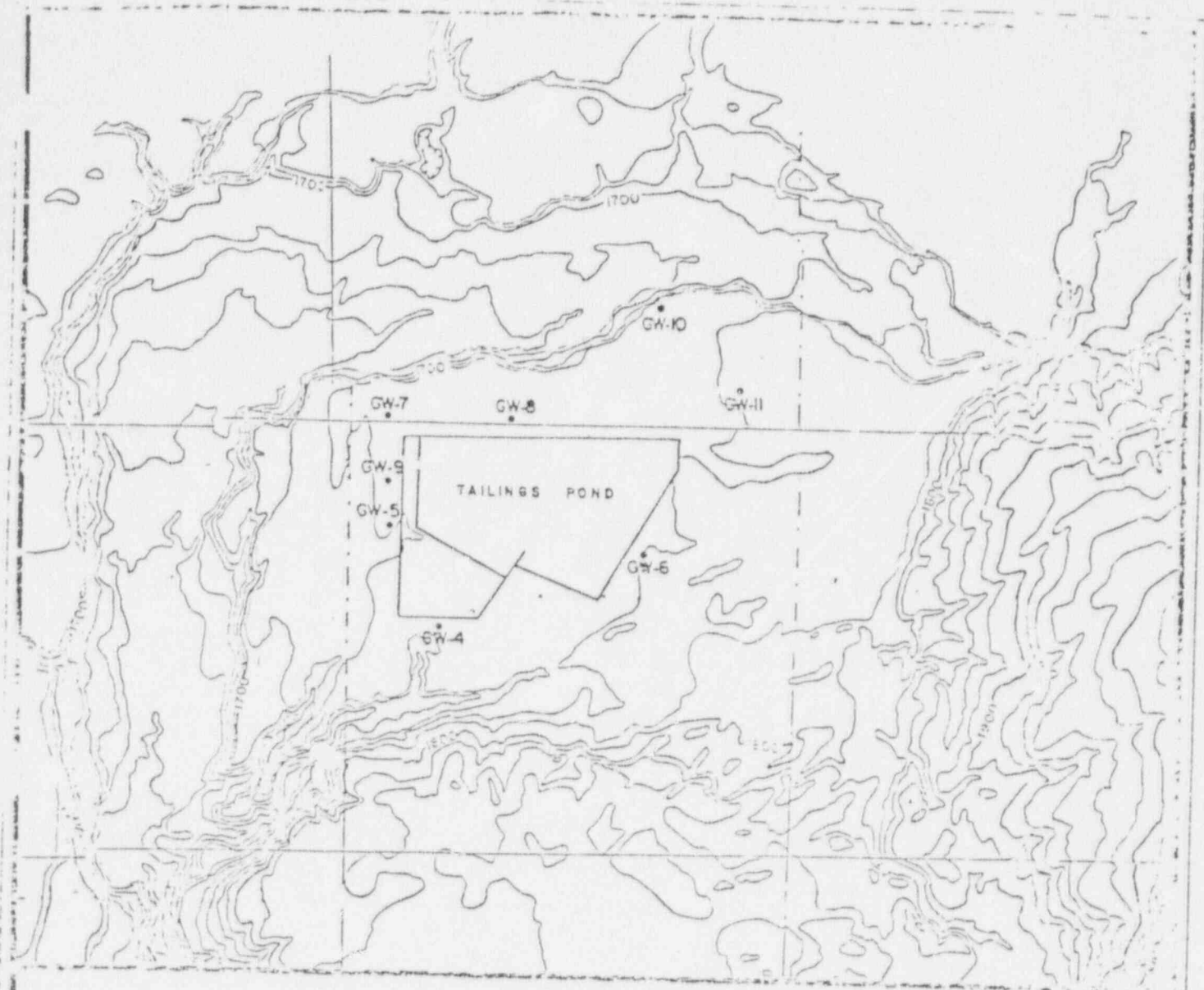


Figure 2.1
SAMPLING LOCATION

DAWN DRILL WELLS

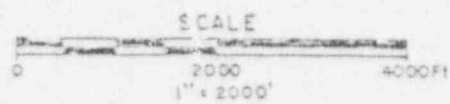
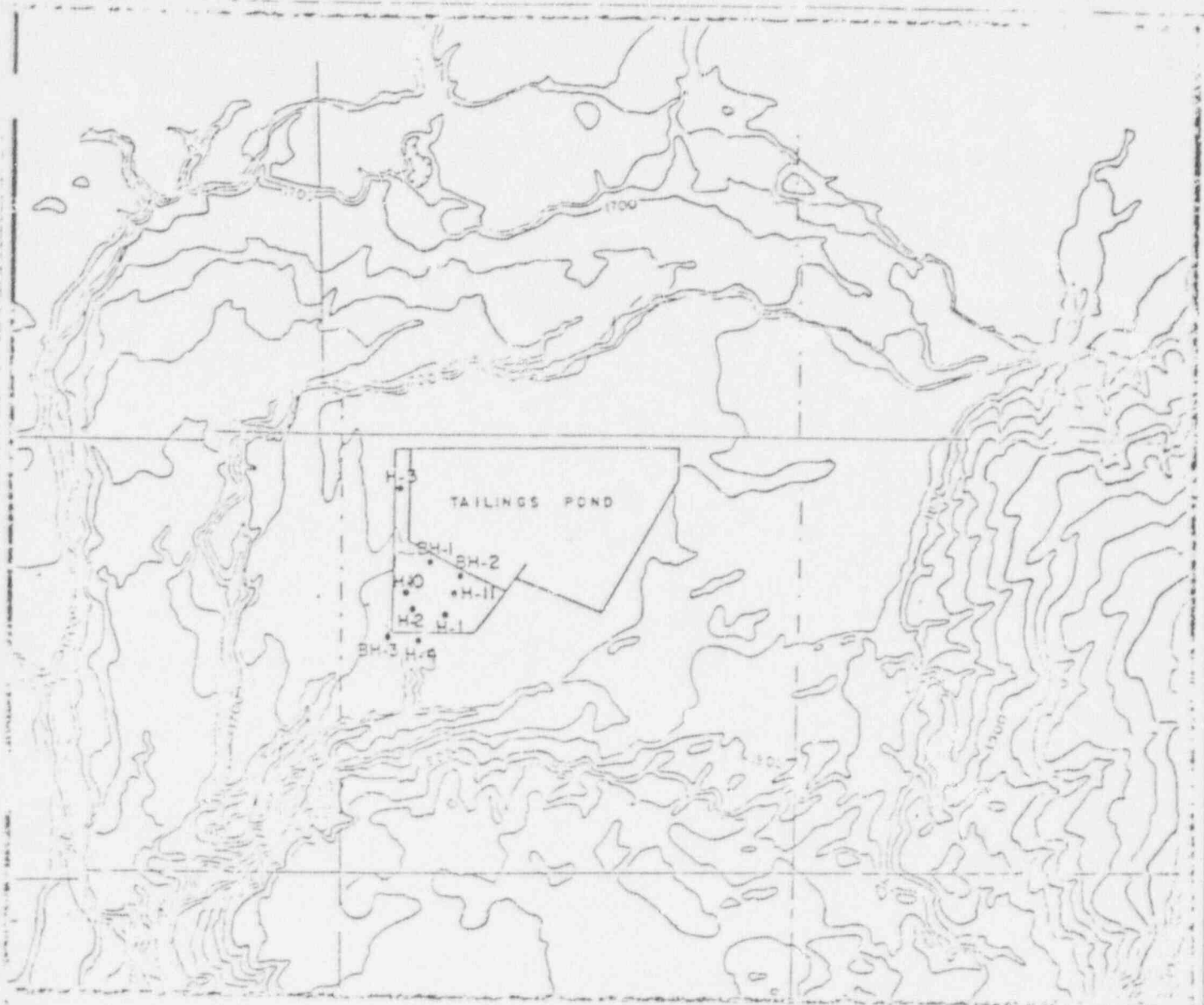


FIGURE 2.2
BOREHOLES

DAWN DRILL WELLS



TABLE 2.1

BOREHOLE INFORMATION

Hole	Bottom of Coarse gravel Layer	Bottom of Mixed Sand & Gravel	Fine or Bottom Sand of Hole
GW 4	10 feet	45 feet	83 feet
GW 5	14	55	136
GW 6	21.5	21.5	62
GW 7	20	62	101
GW 8	29	46	103
GW 9	21.5	37	164
GW 10	0	20	114
GW 11	13	39	75
H 1	34	70	75
H 2	35	55	70
H 3	18	45	105
H 4	18	45	100
H 10	12	62	104
H 11	16.5	36	143
BH 1	5	42	99
BH 2	18	32	82
BH 3	32	52	101

Dawn Mining Company
17 October 1980

DRILL HOLE LOG				HOLE TYPE & SIZE: 6" Rotary				HOLE NUMBER: GU-4			
DEPTH: 120'				TOT. FT. - 400'				DATE COMPLETED: 1/19/80			
COORDINATES: N 7359 ; E 5532								DATE STARTED: 1/11/80			
FORMATION	INTERVAL	EMISSION	SAMPLE NUMBER	GEOLOGY							
	0			0' - 10' Sandy coarse gravel							
	10			10' - 15' Very fine well sorted "blow sand"							
	15			15' - 17' Brown clay interbed.							
	20			17' - 20' Moulding clay consistency							
	25			20' - 25' Medium sand w/ fine gravel							
	30			25' - 30' medium sand w/ subord. fine gravel							
	35			30' - 40' Same as above							
	40			40' - 45' Well sorted medium sand, few pebbles,							
	45			45' - 50' Clean well sorted fine sand							
	50										
	55										
	60										
	65										
	70										
	75										
	80										
	85			80' - 87' Dense Peaty clay							
	90			87' - 95' Basalt boulders in sand matrix medium to coarse sand							
	95			95' - 100' granitic sand w/ small pebbles							

DALYN MINING COMPANY - DRILL HOLE LOG HOLE TYPE & SIZE: 6" Rotary HOLE NUMBER: SW 4
 LOCATION: S.W. 1/4 SE 1/4 T20N R3E S3E DEPTH: 120 TOT. FLUID LOSS: DATE COMPLETED: 1/14/80
 COLLAR ELEV: 1741 COORDINATES: N 7359 E 5832 DATE STARTED: 1/11/80

LOCATION	INTERVAL	EMISSION	SAMPLE NUMBER	TESTING	TESTING	TESTING	TESTING	GEOLOGY
	5							
	10							
	15							
	20							109' - 120' Basalt Bedrock
	25							
	30							
	35							
	40							
	45							
	50							
	55							
	60							
	65							
	70							
	75							
	80							
	85							
	90							
	95							
	100							
	105							
	110							
	115							
	120							Total depth 120'

BRAIN MINE COMPANY - DRILL HOLE LOG		HOLE TYPE & SIZE: 6" R. Long		HOLE NUMBER: GW-5	
LOCATION: S. 22 W. 2 N. 2 E. 2 S. 2		DEPTH: 295'		DATE COMPLETED: 4/28/68	
COLLAR ELEV.: 1739		COORDINATES: N 20 19 ; E 49 23		DATE STARTED: 4/20/68	

DEPTH	INTERVAL	EMISSION	SAMPLE NUMBER	TESTS	REMARKS	GEOLOGY
0						0' - 14' medium sand w/ gravels < 1/2" and cobble fragments.
10						
15						14' - 23' medium sand w/ gravel - all rounded cobble fragments.
20						
25						23' - 33' fine gravel w/ mixture of coarse & fine sand.
30						
35						33' - 35' medium sand - clean well sorted.
40						35' - 55' medium to fine sand interbedded w/ gravel & sandy clay & sand.
45						
50						
55						55' - 136' clean well sorted fine sand.
60						
65						
70						
75						
80						
85						
90						
95						
100						

Dawn Mining Company - Drill Hole Log		Hole Type & Size: <i>6" R-Long</i>		Hole Number: <i>GU-S</i>	
Location: <i>2522</i>		Depth: <i>295</i>	Tot. H-2 H ₂ O:		Date Completed: <i>4/26/60</i>
Collar Elev: <i>1739</i>		Coordinates: <i>N 8649</i> <i>E 4923</i>		Date Started: <i>4/10/60</i>	

Interval	Interval	Emission	Sample Number	Geology	
105					
110					
115					
120					
125					
130					
135					
140					
145					
150					
155					
160					
165					
170					
175					
180					
185					
190					
195					
200					
205					
210					
215					
220					
225					
230					
235					
240					
245					
250					
255					
260					
265					
270					
275					
280					
285					
290					
295					

36° 295° grey clay sandy material

@ 140-155 - interbed 2-3 ft

4/26/60
GU-S

COUNTY: ANY DRILL HOLE LOG HOLE TYPE & SIZE: 6" Rotary HOLE NUMBER: GW-5
 DATE: 1/24/60 DEPTH: 205 TOT. FL. - 2" H₂O: DATE COMPLETED: 1/24/60
 LOCATION: 1735 COORDINATES: N 049 E 4.922 DATE STARTED: 1/24/60

SECTION	ELEVATION FEET	INTERVAL	EMISSION	SAMPLING TO DEPTH	SAMPLE NUMBER	GEOLOGY	
	205					205-210	H ₂ O - indicated @ this interval
	210						
	215						
	220					220"-295"	Gr. Clay-sand mixture - Gray appearance that resembles wet soupy cement
	225						
	230						
	235						
	240						
	245						
	250						
	255						
	260						
	265						
	270						
	275						
	280						
	285						
	290						
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	960						
	965						
	970						
	975						
	980						
	985						
	990						
	995						
	1000						

TD 205"

P. L. Jones
 G. W. S. 18

DAWN MINING COMPANY - DRILL HOLE LOG		HOLE TYPE & SIZE: 6" P-4		HOLE NUMBER: G.W.-6	
LOCATION: TIDAL RIVER		DEPTH: 176	TOT. FT. - 430	DATE COMPLETED: 12/22/78	
COLLAR ELEV.: 1761		COORDINATES: N 8379 E 8297		DATE STARTED: 12/18/78	

ELEVATION	GRAPHIC INTERVAL LOG	INTERVAL	EMISSION	CHEMICAL ANALYSIS % H ₂ O	SAMPLE NUMBER	TEMPERATURE DEPT. F. 100 F. 200 F.	LITHOLOG ATTITUDES	GEOLOGY
0								0-21' Coarse sands & gravels
5								
10								
15								
20								
25								25-37 Coarse to medium sands interbedded "fine" size gravel @ 29' thin clay (1/2" thick, Brown clay)
30								
35								
40								37-62' Medium sized sands, well sorted
45								@ 37, 54, 64 - thin clay layers - 2 to 1/2" thick
50								
55								
60								
65								62'-73' Very clean well sorted sands (Blue sands) grading to medium sized sand the last 1/2 ft. of the interval
70								@ 71' Thin brown clay seam
75								73-91' Sandy Brown clay grading to grey Brown silty clay
80								
85								60' ground water
90								
95								
100								91-102' Brown medium sized sand 10 to 20 ft. in thickness

DAWN MINING COMPANY - DRILL HOLE LOG		HOLE TYPE & SIZE:		HOLE NUMBER: <i>GW-6</i>	
LOCATION: <i>S-25 T-20 R-34 E</i>		DEPTH: <i>176'</i>	TOT. FT. - % <i>4,08'</i>	DATE COMPLETED: <i>12/20/78</i>	
COLLAR ELEV.: <i>1761</i>		COORDINATES: <i>N 83° 7' E 8297</i>		DATE STARTED: <i>12/19/78</i>	

VELOCITY	GRAPHIC REDUCTION LOG	INTERVAL	EMISSION	CHEMICAL ANALYSIS To H_2O	SAMPLE NUMBER	FRAC. TIME PERCENTAGE	LOG. TIME PERCENTAGE	LOG. TIME PERCENTAGE	LOG. TIME PERCENTAGE	GEOLOGY
		105								103-123 - Lt. Reddish Brown clay w/ minor interbedded granitic sand.
		110								@ 107" 5 gal/min water
		115								@ 118" 20 gal/min H_2O
		120								
		125								123-176 Basalt & chips & granitic sand w/ occasional Lt. Reddish Brown clay
		130								@ 132 tan colored clay layer
		135								
		140								@ 140 - 20-30 gal/min H_2O
		145								@ 145 Hard clay layer
		150								146-176 - 60/70 gal/min H_2O
		155								
		160								
		165								
		170								
		175								T.D. 176 ft
		180								
		5								
		0								
		5								

DAWN MINING COMPANY - DRILL HOLE LOG		HOLE TYPE & SIZE: 6" Rotary		HOLE NUMBER: CW-7	
LOCATION: <i>Salinas Bend</i>		DEPTH: 400'		DATE COMPLETED: 11/18/79	
CORRECTION ELEV.: 1750		COORDINATES: N 9991		DATE STARTED: 12/21/78	
				E 5154	

ELEVATION	GRAPHIC WATER LEVEL LOG	INTERVAL	EMISSION	CHEMICAL ANALYSIS % U ₃ O ₈	SAMPLE NUMBER	FRACTURE DENSITY PER FOOT		LEAKAGE ATTITUDES	GEOLOGY
						1-5	5-10		
0									0-20 Coarse Sand w/ fragments and rounded gravels
5									
10									
15									
20									20-30 Coarse to medium sand w/ minor interbeds of fine gravel
25									@ 25', 28', 30' thin clay seams
30									
35									35-62 Well sorted coarse sand grading to medium sand
40									
45									
50									
55									
60									
65									62-101 Very fine sorted sand
70									@ 68, 69, 73' thin brown, silty clay thickness (2" to 3" inches)
75									@ 93', 97' Very fine sandy clay lens, thickness 2" to 3"
80									
85									
90									
95									

[Signature]
17

DOW MINING COMPANY - DRILL HOLE LOG		HOLE TYPE & SIZE: 6" Rotary		HOLE NUMBER: EW-7	
LOCATION: Tailings pond		DEPTH: 400		DATE COMPLETED: 1/2/79	
SURFACE ELEV.: 1750		COORDINATES: N 9991 ; E 5154		DATE STARTED: 12/21/78	

ELEVATION	GRAPHIC VELOCITY LOG	INTERVAL	EMISSION	CHEMICAL ANALYSIS To U ₃ O ₈	SAMPLE NUMBER	TEMPERATURE TEMP. IN HOLE 6.3 7.25 8.0 8.75 9.5 10.25 11.0 11.75 12.5 13.25 14.0 14.75 15.5 16.25 17.0 17.75 18.5 19.25 20.0 20.75 21.5 22.25 23.0 23.75 24.5 25.25 26.0 26.75 27.5 28.25 29.0 29.75 30.5 31.25 32.0 32.75 33.5 34.25 35.0 35.75 36.5 37.25 38.0 38.75 39.5 40.0	TEMPERATURE TEMP. IN HOLE 6.3 7.25 8.0 8.75 9.5 10.25 11.0 11.75 12.5 13.25 14.0 14.75 15.5 16.25 17.0 17.75 18.5 19.25 20.0 20.75 21.5 22.25 23.0 23.75 24.5 25.25 26.0 26.75 27.5 28.25 29.0 29.75 30.5 31.25 32.0 32.75 33.5 34.25 35.0 35.75 36.5 37.25 38.0 38.75 39.5 40.0	TEMPERATURE TEMP. IN HOLE 6.3 7.25 8.0 8.75 9.5 10.25 11.0 11.75 12.5 13.25 14.0 14.75 15.5 16.25 17.0 17.75 18.5 19.25 20.0 20.75 21.5 22.25 23.0 23.75 24.5 25.25 26.0 26.75 27.5 28.25 29.0 29.75 30.5 31.25 32.0 32.75 33.5 34.25 35.0 35.75 36.5 37.25 38.0 38.75 39.5 40.0	TEMPERATURE TEMP. IN HOLE 6.3 7.25 8.0 8.75 9.5 10.25 11.0 11.75 12.5 13.25 14.0 14.75 15.5 16.25 17.0 17.75 18.5 19.25 20.0 20.75 21.5 22.25 23.0 23.75 24.5 25.25 26.0 26.75 27.5 28.25 29.0 29.75 30.5 31.25 32.0 32.75 33.5 34.25 35.0 35.75 36.5 37.25 38.0 38.75 39.5 40.0	TEMPERATURE TEMP. IN HOLE 6.3 7.25 8.0 8.75 9.5 10.25 11.0 11.75 12.5 13.25 14.0 14.75 15.5 16.25 17.0 17.75 18.5 19.25 20.0 20.75 21.5 22.25 23.0 23.75 24.5 25.25 26.0 26.75 27.5 28.25 29.0 29.75 30.5 31.25 32.0 32.75 33.5 34.25 35.0 35.75 36.5 37.25 38.0 38.75 39.5 40.0	TEMPERATURE TEMP. IN HOLE 6.3 7.25 8.0 8.75 9.5 10.25 11.0 11.75 12.5 13.25 14.0 14.75 15.5 16.25 17.0 17.75 18.5 19.25 20.0 20.75 21.5 22.25 23.0 23.75 24.5 25.25 26.0 26.75 27.5 28.25 29.0 29.75 30.5 31.25 32.0 32.75 33.5 34.25 35.0 35.75 36.5 37.25 38.0 38.75 39.5 40.0	TEMPERATURE TEMP. IN HOLE 6.3 7.25 8.0 8.75 9.5 10.25 11.0 11.75 12.5 13.25 14.0 14.75 15.5 16.25 17.0 17.75 18.5 19.25 20.0 20.75 21.5 22.25 23.0 23.75 24.5 25.25 26.0 26.75 27.5 28.25 29.0 29.75 30.5 31.25 32.0 32.75 33.5 34.25 35.0 35.75 36.5 37.25 38.0 38.75 39.5 40.0	TEMPERATURE TEMP. IN HOLE 6.3 7.25 8.0 8.75 9.5 10.25 11.0 11.75 12.5 13.25 14.0 14.75 15.5 16.25 17.0 17.75 18.5 19.25 20.0 20.75 21.5 22.25 23.0 23.75 24.5 25.25 26.0 26.75 27.5 28.25 29.0 29.75 30.5 31.25 32.0 32.75 33.5 34.25 35.0 35.75 36.5 37.25 38.0 38.75 39.5 40.0	TEMPERATURE TEMP. IN HOLE 6.3 7.25 8.0 8.75 9.5 10.25 11.0 11.75 12.5 13.25 14.0 14.75 15.5 16.25 17.0 17.75 18.5 19.25 20.0 20.75 21.5 22.25 23.0 23.75 24.5 25.25 26.0 26.75 27.5 28.25 29.0 29.75 30.5 31.25 32.0 32.75 33.5 34.25 35.0 35.75 36.5 37.25 38.0 38.75 39.5 40.0	TEMPERATURE TEMP. IN HOLE 6.3 7.25 8.0 8.75 9.5 10.25 11.0 11.75 12.5 13.25 14.0 14.75 15.5 16.25 17.0 17.75 18.5 19.25 20.0 20.75 21.5 22.25 23.0 23.75 24.5 25.25 26.0 26.75 27.5 28.25 29.0 29.75 30.5 31.25 32.0 32.75 33.5 34.25 35.0 35.75 36.5 37.25 38.0 38.75 39.5 40.0	TEMPERATURE TEMP. IN HOLE 6.3 7.25 8.0 8.75 9.5 10.25 11.0 11.75 12.5 13.25 14.0 14.75 15.5 16.25 17.0 17.75 18.5 19.25 20.0 20.75 21.5 22.25 23.0 23.75 24.5 25.25 26.0 26.75 27.5 28.25 29.0 29.75 30.5 31.25 32.0 32.75 33.5 34.25 35.0 35.75 36.5 37.25 38.0 38.75 39.5 40.0	TEMPERATURE TEMP. IN HOLE 6.3 7.25 8.0 8.75 9.5 10.25 11.0 11.75 12.5 13.25 14.0 14.75 15.5 16.25 17.0 17.75 18.5 19.25 20.0 20.75 21.5 22.25 23.0 23.75 24.5 25.25 26.0 26.75 27.5 28.25 29.0 29.75 30.5 31.25 32.0 32.75 33.5 34.25 35.0 35.75 36.5 37.25 38.0 38.75 39.5 40.0	TEMPERATURE TEMP. IN HOLE 6.3 7.25 8.0 8.75 9.5 10.25 11.0 11.75 12.5 13.25 14.0 14.75 15.5 16.25 17.0 17.75 18.5 19.25 20.0 20.75 21.5 22.25 23.0 23.75 24.5 25.25 26.0 26.75 27.5 28.25 29.0 29.75 30.5 31.25 32.0 32.75 33.5 34.25 35.0 35.75 36.5 37.25 38.0 38.75 39.5 40.0	TEMPERATURE TEMP. IN HOLE 6.3 7.25 8.0 8.75 9.5 10.25 11.0 11.75 12.5 13.25 14.0 14.75 15.5 16.25 17.0 17.75 18.5 19.25 20.0 20.75 21.5 22.25 23.0 23.75 24.5 25.25 26.0 26.75 27.5 28.25 29.0 29.75 30.5 31.25 32.0 32.75 33.5 34.25 35.0 35.75 36.5 37.25 38.0 38.75 39.5 40.0	TEMPERATURE TEMP. IN HOLE 6.3 7.25 8.0 8.75 9.5 10.25 11.0 11.75 12.5 13.25 14.0 14.75 15.5 16.25 17.0 17.75 18.5 19.25 20.0 20.75 21.5 22.25 23.0 23.75 24.5 25.25 26.0 26.75 27.5 28.25 29.0 29.75 30.5 31.25 32.0 32.75 33.5 34.25 35.0 35.75 36.5 37.25 38.0 38.75 39.5 40.0	TEMPERATURE TEMP. IN HOLE 6.3 7.25 8.0 8.75 9.5 10.25 11.0 11.75 12.5 13.25 14.0 14.75 15.5 16.25 17.0 17.75 18.5 19.25 20.0 20.75 21.5 22.25 23.0 23.75 24.5 25.25 26.0 26.75 27.5 28.25 29.0 29.75 30.5 31.25 32.0 32.75 33.5 34.25 35.0 35.75 36.5 37.25 38.0 38.75 39.5 40.0	TEMPERATURE TEMP. IN HOLE 6.3 7.25 8.0 8.75 9.5 10.25 11.0 11.75 12.5 13.25 14.0 14.75 15.5 16.25 17.0 17.75 18.5 19.25 20.0 20.75 21.5 22.25 23.0 23.75 24.5 25.25 26.0 26.75 27.5 28.25 29.0 29.75 30.5 31.25 32.0 32.75 33.5 34.25 35.0 35.75 36.5 37.25 38.0 38.75 39.5 40.0	TEMPERATURE TEMP. IN HOLE 6.3 7.25 8.0 8.75 9.5 10.25 11.0 11.75 12.5 13.25 14.0 14.75 15.5 16.25 17.0 17.75 18.5 19.25 20.0 20.75 21.5 22.25 23.0 23.75 24.5 25.25 26.0 26.75 27.5 28.25 29.0 29.75 30.5 31.25 32.0 32.75 33.5 34.25 35.0 35.75 36.5 37.25 38.0 38.75 39.5 40.0	TEMPERATURE TEMP. IN HOLE 6.3 7.25 8.0 8.75 9.5 10.25 11.0 11.75 12.5 13.25 14.0 14.75 15.5 16.25 17.0 17.75 18.5 19.25 20.0 20.75 21.5 22.25 23.0 23.75 24.5 25.25 26.0 26.75 27.5 28.25 29.0 29.75 30.5 31.25 32.0 32.75 33.5 34.25 35.0 35.75 36.5 37.25 38.0 38.75 39.5 40.0	TEMPERATURE TEMP. IN HOLE 6.3 7.25 8.0 8.75 9.5 10.25 11.0 11.75 12.5 13.25 14.0 14.75 15.5 16.25 17.0 17.75 18.5 19.25 20.0 20.75 21.5 22.25 23.0 23.75 24.5 25.25 26.0 26.75 27.5 28.25 29.0 29.75 30.5 31.25 32.0 32.75 33.5 34.25 35.0 35.75 36.5 37.25 38.0 38.75 39.5 40.0	TEMPERATURE TEMP. IN HOLE 6.3 7.25 8.0 8.75 9.5 10.25 11.0 11.75 12.5 13.25 14.0 14.75 15.5 16.25 17.0 17.75 18.5 19.25 20.0 20.75 21.5 22.25 23.0 23.75 24.5 25.25 26.0 26.75 27.5 28.25 29.0 29.75 30.5 31.25 32.0 32.75 33.5 34.25 35.0 35.75 36.5 37.25 38.0 38.75 39.5 40.0	TEMPERATURE TEMP. IN HOLE 6.3 7.25 8.0 8.75 9.5 10.25 11.0 11.75 12.5 13.25 14.0 14.75 15.5 16.25 17.0 17.75 18.5 19.25 20.0 20.75 21.5 22.25 23.0 23.75 24.5 25.25 26.0 26.75 27.5 28.25 29.0 29.75 30.5 31.25 32.0 32.75 33.5 34.25 35.0 35.75 36.5 37.25 38.0 38.75 39.5 40.0	TEMPERATURE TEMP. IN HOLE 6.3 7.25 8.0 8.75 9.5 10.25 11.0 11.75 12.5 13.25 14.0 14.75 15.5 16.25 17.0 17.75 18.5 19.25 20.0 20.75 21.5 22.25 23.0 23.75 24.5 25.25 26.0 26.75 27.5 28.25 29.0 29.75 30.5 31.25 32.0 32.75 33.5 34.25 35.0 35.75 36.5 37.25 38.0 38.75 39.5 40.0	TEMPERATURE TEMP. IN HOLE 6.3 7.25 8.0 8.75 9.5 10.25 11.0 11.75 12.5 13.25 14.0 14.75 15.5 16.25 17.0 17.75 18.5 19.25 20.0 20.75 21.5 22.25 23.0 23.75 24.5 25.25 26.0 26.75 27.5 28.25 29.0 29.75 30.5 31.25 32.0 32.75 33.5 34.25 35.0 35.75 36.5 37.25 38.0 38.75 39.5 40.0	TEMPERATURE TEMP. IN HOLE 6.3 7.25 8.0 8.75 9.5 10.25 11.0 11.75 12.5 13.25 14.0 14.75 15.5 16.25 17.0 17.75 18.5 19.25 20.0 20.75 21.5 22.25 23.0 23.75 24.5 25.25 26.0 26.75 27.5 28.25 29.0 29.75 30.5 31.25 32.0 32.75 33.5 34.25 35.0 35.75 36.5 37.25 38.0 38.75 39.5 40.0	TEMPERATURE TEMP. IN HOLE 6.3 7.25 8.0 8.75 9.5 10.25 11.0 11.75 12.5 13.25 14.0 14.75 15.5 16.25 17.0 17.75 18.5 19.25 20.0 20.75 21.5 22.25 23.0 23.75 24.5 25.25 26.0 26.75 27.5 28.25 29.0 29.75 30.5 31.25 32.0 32.75 33.5 34.25 35.0 35.75 36.5 37.25 38.0 38.75 39.5 40.0	TEMPERATURE TEMP. IN HOLE 6.3 7.25 8.0 8.75 9.5 10.25 11.0 11.75 12.5 13.25 14.0 14.75 15.5 16.25 17.0 17.75 18.5 19.25 20.0 20.75 21.5 22.25 23.0 23.75 24.5 25.25 26.0 26.75 27.5 28.25 29.0 29.75 30.5 31.25 32.0 32.75 33.5 34.25 35.0 35.75 36.5 37.25 38.0 38.75 39.5 40.0	TEMPERATURE TEMP. IN HOLE 6.3 7.25 8.0 8.75 9.5 10.25 11.0 11.75 12.5 13.25 14.0 14.75 15.5 16.25 17.0 17.75 18.5 19.25 20.0 20.75 21.5 22.25 23.0 23.75 24.5 25.25 26.0 26.75 27.5 28.25 29.0 29.75 30.5 31.25 32.0 32.75 33.5 34.25 35.0 35.75 36.5 37.25 38.0 38.75 39.5 40.0	TEMPERATURE TEMP. IN HOLE 6.3 7.25 8.0 8.75 9.5 10.25 11.0 11.75 12.5 13.25 14.0 14.75 15.5 16.25 17.0 17.75 18.5 19.25 20.0 20.75 21.5 22.25 23.0 23.75 24.5 25.25 26.0 26.75 27.5 28.25 29.0 29.75 30.5 31.25 32.0 32.75 33.5 34.25 35.0 35.75 36.5 37.25 38.0 38.75 39.5 40.0	TEMPERATURE TEMP. IN HOLE 6.3 7.25 8.0 8.75 9.5 10.25 11.0 11.75 12.5 13.25 14.0 14.75 15.5 16.25 17.0 17.75 18.5 19.25 20.0 20.75 21.5 22.25 23.0 23.75 24.5 25.25 26.0 26.75 27.5 28.25 29.0 29.75 30.5 31.25 32.0 32.75 33.5 34.25 35.0 35.75 36.5 37.25 38.0 38.75 39.5 40.0	TEMPERATURE TEMP. IN HOLE 6.3 7.25 8.0 8.75 9.5 10.25 11.0 11.75 12.5 13.25 14.0 14.75 15.5 16.25 17.0 17.75 18.5 19.25 20.0 20.75 21.5 22.25 23.0 23.75 24.5 25.25 26.0 26.75 27.5 28.25 29.0 29.75 30.5 31.25 32.0 32.75 33.5 34.25 35.0 35.75 36.5 37.25 38.0 38.75 39.5 40.0	TEMPERATURE TEMP. IN HOLE 6.3 7.25 8.0 8.75 9.5 10.25 11.0 11.75 12.5 13.25 14.0 14.75 15.5 16.25 17.0 17.75 18.5 19.25 20.0 20.75 21.5 22.25 23.0 23.75 24.5 25.25 26.0 26.75 27.5 28.25 29.0 29.75 30.5 31.25 32.0 32.75 33.5 34.25 35.0 35.75 36.5 37.25 38.0 38.75 39.5 40.0	TEMPERATURE TEMP. IN HOLE 6.3 7.25 8.0 8.75 9.5 10.25 11.0 11.75 12.5 13.25 14.0 14.75 15.5 16.25 17.0 17.75 18.5 19.25 20.0 20.75 21.5 22.25 23.0 23.75 24.5 25.25 26.0 26.75 27.5 28.25 29.0 29.75 30.5 31.25 32.0 32.75 33.5 34.25 35.0 35.75 36.5 37.25 38.0 38.75 39.5 40.0	TEMPERATURE TEMP. IN HOLE 6.3 7.25 8.0 8.75 9.5 10.25 11.0 11.75 12.5 13.25 14.0 14.75 15.5 16.25 17.0 17.75 18.5 19.25 20.0 20.75 21.5 22.25 23.0 23.75 24.5 25.25 26.0 26.75 27.5 28.25 29.0 29.75 30.5 31.25 32.0 32.75 33.5 34.25 35.0 35.75 36.5 37.25 38.0 38.75 39.5 40.0	TEMPERATURE TEMP. IN HOLE 6.3 7.25 8.0 8.75 9.5 10.25 11.0 11.75 12.5 13.25 14.0 14.75 15.5 16.25 17.0 17.75 18.5 19.25 20.0 20.75 21.5 22.25 23.0 23.75 24.5 25.25 26.0 26.75 27.5 28.25 29.0 29.75 30.5 31.25 32.0 32.75 33.5 34.25 35.0 35.75 36.5 37.25 38.0 38.75 39.5 40.0	TEMPERATURE TEMP. IN HOLE 6.3 7.25 8.0 8.75 9.5 10.25 11.0 11.75 12.5 13.25 14.0 14.75 15.5 16.25 17.0 17.75 18.5 19.25 20.0 20.75 21.5 22.25 23.0 23.75 24.5 25.25 26.0 26.75 27.5 28.25 29.0 29.75 30.5 31.25 32.0 32.75 33.5 34.25 35.0 35.75 36.5 37.25 38.0 38.75 39.5 40.0	TEMPERATURE TEMP. IN HOLE 6.3 7.25 8.0 8.75 9.5 10.25 11.0 11.75 12.5 13.25 14.0 14.75 15.5 16.25 17.0 17.75 18.5 19.25 20.0 20.75 21.5 22.25 23.0 23.75 24.5 25.25 26.0 26.75 27.5 28.25 29.0 29.75 30.5 31.25 32.0 32.75 33.5 34.25 35.0 35.75 36.5 37.25 38.0 38.75 39.5 40.0	TEMPERATURE TEMP. IN HOLE 6.3 7.25 8.0 8.75 9.5 10.25 11.0 11.75 12.5 13.25 14.0 14.75 15.5 16.25 17.0 17.75 18.5 19.25 20.0 20.75 21.5 22.25 23.0 23.75 24.5 25.25 26.0 26.75 27.5 28.25 29.0 29.75 30.5 31.25 32.0 32.75 33.5 34.25 35.0 35.75 36.5 37.25 38.0 38.75 39.5 40.0	TEMPERATURE TEMP. IN HOLE 6.3 7.25 8.0 8.75 9.5 10.25 11.0 11.75 12.5 13.25 14.0 14.75 15.5 16.25 17.0 17.75 18.5 19.25 20.0 20.75 21.5 22.25 23.0 23.75 24.5 25.25 26.0 26.75 27.5 28.25 29.0 29.75 30.5 31.25 32.0 32.75 33.5 34.25 35.0 35.75 36.5 37.25 38.0 38.75 39.5 40.0	TEMPERATURE TEMP. IN HOLE 6.3 7.25 8.0 8.75 9.5 10.25 11.0 11.75 12.5 13.25 14.0 14.75 15.5 16.25 17.0 17.75 18.5 19.25 20.0 20.75 21.5 22.25 23.0 23.75 24.5 25.25 26.0 26.75 27.5 28.25 29.0 29.75 30.5 31.25 32.0 32.75 33.5 34.25 35.0 35.75 36.5 37.25 38.0 38.75 39.5 40.0	TEMPERATURE TEMP. IN HOLE 6.3 7.25 8.0 8.75 9.5 10.25 11.0 11.75 12.5 13.25 14.0 14.75 15.5 16.25 17.0 17.75 18.5 19.25 20.0 20.75 21.5 22.25 23.0 23.75 24.5 25.25 26.0 26.75 27.5 28.25 29.0 29.75 30.5 31.25 32.0 32.75 33.5 34.25 35.0 35.75 36.5 37.25 38.0 38.75 39.5 40.0	TEMPERATURE TEMP. IN HOLE 6.3 7.25 8.0 8.75 9.5 10.25 11.0 11.75 12.5 13.25 14.0 14.75 15.5 16.25 17.0 17.75 18.5 19.25 20.0 20.75 21.5 22.25 23.0 23.75 24.5 25.25 26.0 26.75 27.5 28.25 29.0 29.75 30.5 31.25 32.0 32.75 33.5 34.25 35.0 35.75 36.5 37.25 38.0 38.75 39.5 40.0	TEMPERATURE TEMP. IN HOLE 6.3 7.25 8.0 8.75 9.5 10.25 11.0 11.75 12.5 13.25 14.0 14.75 15.5 16.25 17.0 17.75 18.5 19.25 20.0 20.75 21.5 22.25 23.0 23.75 24.5 25.25 26.0 26.75 27.5 28.25 29.0 29.75 30.5 31.25 32.0 32.75 33.5 34.25 35.0 35.75 36.5 37.25 38.0 38.75 39.5 40.0	TEMPERATURE TEMP. IN HOLE 6.3 7.25 8.0 8.75 9.5 10.25 11.0 11.75 12.5 13.25 14.0 14.75 15.5 16.25 17.0 17.75 18.5 19.25 20.0 20.75 21.5 22.25 23.0 23.75 24.5 25.25 26.0 26.75 27.5 28.25 29.0 29.75 30.5 31.25 32.0 32.75 33.5 34.25 35.0 35.75 36.5 37.25 38.0 38.75 39.5 40.0	TEMPERATURE TEMP. IN HOLE 6.3 7.25 8.0 8.75 9.5 10.25 11.0 11.75 12.5 13.25 14.0 14.75 15.5 16.25 17.0 17.75 18.5 19.25 20.0 20.75 21.5 22.25 23.0 23.75 24.5 25.25 26.0 26.75 27.5 28.25 29.0 29.75 30.5 31.25 32.0 32.75 33.5 34.25 35.0 35.75 36.5 37.25 38.0 38.75 39.5 40.0	TEMPERATURE TEMP. IN HOLE 6.3 7.25 8.0 8.75 9.5 10.25 11.0 11.75 12.5 13.25 14.0 14.75 15.5 16.25 17.0 17.75 18.5 19.25 20.0 20.75 21.5 22.25 23.0 23.75 24.5 25.25 26.0 26.75 27.5 28.25 29.0 29.75 30.5 31.25 32.0 32.75 33.5 34.25 35.0 35.75 36.5 37.25 38.0 38.75 39.5 40.0	TEMPERATURE TEMP. IN HOLE 6.3 7.25 8.0 8.75 9.5 10.25 11.0 11.75 12.5 13.25 14.0 14.75 15.5 16.25 17.0 17.75 18.5 19.25 20.0 20.75 21.5 22.25 23.0 23.75 24.5 25.25 26.0 26.75 27.5 28.25 29.0 29.75 30.5 31.25 32.0 32.75 3
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DOWN MINING COMPANY - DRILL HOLE 100		HOLE TYPE & SIZE: 4" Rotary		HOLE NUMBER: 62-7
LOCATION: <i>tailings pond</i>		DEPTH: 400 ft	TOT. FT - % U_2O_8 :	DATE COMPLETED: 1/18/78
SURFACE ELEV.: 1750		COORDINATES: N 559 / ; E 5154		DATE STARTED: 12/21/78

ELEVATION	GRAPHIC NEGRADATION LOG	INTERVAL	EMISSION	CHEMICAL ANALYSIS TO U_2O_8	SAMPLE NUMBER	FRACTURE DENSITY AND FLOW		LITHOLOG ATTITUDES FROM VERT. AXIS	GEOLOGY
						1	2		
305									
310									
315									
320									
325									
330									
335									
340									
345									@ 343 thin semi gravel $\approx 1\frac{1}{2}$ ft thick
350									
355									@ 353 - 358 5-10 gal/min H_2O @ 357 coarse sand layer approx 2' to 3" thick
360									
365									
370									
375									
380									
385									
390									
395									
400									393-400 grey silty or mic sandy clays w/ thin bedded gravel layers
405									
410									
415									
420									
425									
430									
435									
440									
445									
450									
455									
460									
465									
470									
475									
480									
485									
490									
495									
500									
505									
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555									
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565									
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605									
610									
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860									
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960									
965									
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975									
980									
985									
990									
995									
1000									

34 ft boulders top
S. P. 27

HOLE TYPE & SIZE: 4" P3-4" HOLE LOG
 HOLE NUMBER: 6418
 DEPTH: 150' TOT. FT. - 24.00
 DATE COMPLETED: 1/27/79
 OIL RISE ELEV.: 1755' COORDINATES: N 9952 ; E 6592
 DATE STARTED: 1/24/79

V	INTERVAL	EMISSION	SAMPLE NUMBER	TEMPERATURE	WATER	WATER	GEOLOGY
	0-25						Coarse sand & gravel
	10						
	15						
	20						@ 16-17 coarse to medium well sorted sand
	25						@ thin brown dense silty clay thickness 2"
	30						
	35						25-40 coarse to medium sized sand w/interbedded lens of fine gravel
	40						
	45						@ 44 thin brown layer of clay
	50						40-62 sand, medium-fine, well sorted @ 47-3204 clay layer
	55						
	60						@ 58 122" clay seam
	65						62-103 very fine sand, well sorted (blow sand)
	70						
	75						@ 72, 74 thin, brown clay seams.
	80						
	85						
	90						
	95						@ 92 - H2O
	100						@ 94, 96 clay seams, brown

DAWN MINING COMPANY - DRILL HOLE LOG		HOLE TYPE & SIZE: 6" R24		HOLE NUMBER: B-48
LOCATION: Yachia Pond		DEPTH: 150	TOT. FT. - $\frac{1}{2}$ U ₂ O ₈ :	DATE COMPLETED: 1/27/79
COLLAR ELEV.: 1755		COORDINATES: N 9952 E 6592		DATE STARTED: 1/24/79

ELEVATION	GRAPHIC NEEDLE LOG	INTERVAL	EMISSION	CHEMICAL ANALYSIS To U ₂ O ₈	SAMPLE NUMBER	FRACTURE DENSITY PER FOOT		LITHOLOGICAL ATTITUDES	GEOLOGY
						6.5	11.25		
105									103-150 slightly grey colored, silty clays - increasing in grey colored at Depth.
110									
115									
120									
125									
130									
135									
140									
145									
150									
155									T.D. 150 ft
0									
5									
0									
5									
0									
5									
0									
5									
0									

HOLE TYPE & SIZE: 4" R-10
 LOCATION: 26025
 DEPTH: 115
 TOT. FT. - U_3O_8 :
 COORDINATES: N 9228 E 4958
 HOLE NUMBER: 64-9
 DATE COMPLETED: 2/13/79
 DATE STARTED: 2/11/79

DEPTH	GRAPHIC NEEDLE LOG	INTERVAL	EMISSION	CHEMICAL ANALYSIS TO U_3O_8	SAMPLE NUMBER	TEMPERATURE PERCENT PER CENT CS 12 PERCENT PER CENT	LAMINAE ATTITUDES FROM VIEW AT S	GEOLOGY
5								0-21" coarse sand & gravels. (few gravel and fragments)
10								
15								
20								
25								25-37 coarse to medium sized sand w/ interbedded lens of few gravel
30								@25.5 thin brown clay seam start here
35								@27 " " " "
40								37-42 well sorted medium sand
45								
50								
55								
60								
65								@65 thin tan brown silty clay
70								@67 " " " "
75								@72 " " " "
80								
85								
90								
95								
100								
105								
110								
115								

37-42 well sorted medium sand

DATE: 2/11/79	WELL NAME: LOG	WELL ID: 175 ft	HOLE NUMBER: 175-9
DEPTH: 175'	TOT. FL. - 24.00	DATE COMPLETED: 2/12/79	
COORDINATES: N 9238 E 4559		DATE STARTED: 2/11/79	

INTERVAL	EMISSION	SAMPLE NUMBER	TEMPERATURE	DEPTH	GEOLGY
105					@ 107 thin tan brown clay seam
110					
115					
120					@ 118 " " " "
125					@ 121 " " " "
130					@ 123 - H ₂ O 1 gal/min H ₂ O
135					
140					@ 141 Thin brown clay layer 2" or less thick
145					
150					
155					
160					@ 161 sand become slightly grey and increasingly darker at depth.
165					
170					
175					ID. 175 ft
180					
185					
190					
195					
200					
205					
210					
215					
220					
225					
230					
235					
240					
245					
250					
255					
260					
265					
270					
275					
280					
285					
290					
295					
300					

DATE: APR 1961

TIME: 10:00

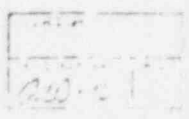
COORDINATES: N 1 E

WELL NUMBER: GW-10

DATE COMPLETED: 7/10/56

DATE STARTED: 6/13/56

STATION	ELEVATION LG	INTERVAL	EMISSION	SAMPLE NUMBER	TEMPERATURE			WIND DIRECTION & VELOCITY			GEOLOGY
					DB	W	AIR	DB	W	AIR	
	5										0°-20° fine sand, gravel, rubble, very little white
	10										
	15										
	20										
	25										
	30										20°-114° heavy blue clay. Practically impervious. Thin streaks of sand (Rare)
	35										
	40										
	45										
	50										
	55										
	60										
	65										
	70										
	75										
	80										
	85										
	90										
	95										
	100										



MINY DRILL HOLE LOG		HOLE TYPE & SIZE: 1/2" Rotary		HOLE NUMBER: RW-10	
DEPTH: 255'		TOT FT - 240'		DATE COMPLETED: 7/10/56	
COORDINATES: N		E		DATE STARTED: 6/13/56	
ELEV: 1600					

STATION	INTERVAL	EMISSION	SAMPLE NUMBER	TEMPERATURE	WIND DIRECTION	WIND SPEED	WAVE HEIGHT	WAVE PERIOD	GEOLOGY
105									
110									
115									
120									114° - 180° shll blue to blue grey clay. Occasional thin strata of fine sand
125									
130									
135									
140									
145									
150									
155									
160									
165									
170									
175									
180									
185									180° - 224° yellow clay. Thin beds of cemented sand
190									
195									

CROWN MIN. OF STONY - DRILL HOLE LOG		HOLE TYPE & SIZE: 1/2" x 2 1/2" long	HOLE NUMBER: G.W. 10
LOCATION: 1/2 mi. S. of 2nd St. & 1st St.	DEPTH: 255'	TOT. FT. - 2 1/2" Dia:	DATE COMPLETED: 6/12/50
COLLAR ELEV: 31680	COORDINATES: N	E	DATE STARTED: 6/13/50

ELEVATION	INTERVAL	EMISSION	SAMPLE NUMBER	GEOLOGY	
				TESTING	REMARKS
20.5					
21.0					
21.5					
22.0					
22.5					224" - 235" Fairly coarse sand, E. mesh.
23.0					
23.5					
24.0					235" - 255" mixture of clay and sand. Gravelled.
24.5					
25.0					
25.5					Total Depth 255'
0					
5					
0					
5					
0					
5					
0					
5					

255' 10"

WELL NAME: <u>W-1</u>	DATE: <u>9-24</u>	DEPTH: <u>75'</u>	TOT. FT. - 2 W. 0.1:	HOLE TYPE & SIZE: <u>2" Boring</u>	HOLE NUMBER: <u>SD-11</u>
COAT: <u>NSV</u>	DATE: <u>9-24</u>	COORDINATES: <u>N</u>	<u>E</u>	DATE COMPLETED: <u>11/1/80</u>	DATE STARTED: <u>1/1/80</u>
OLLAP ELEV: <u>1000</u>					

LOCATION	INTERVAL	EMISSION	SAMPLE NUMBER	TEMPERATURE	WATER TABLE	GEOLOGY
	5					0' - 13' Coarse Sandy flood gravel
	10					
	15					13' - 39' water bedded medium sand & pea gravel
	20					
	25					
	30					
	35					
	40					39' - 53' Well sorted medium to fine sand
	45					
	50					Note: Water table @ 53 to 57 ft.
	55					53' - 75' Sandy silt & clay - clay increasing towards base.
	60					
	65					
	70					
	75					Total Depth
	80					
	85					
	90					
	95					
	100					

DAWN MINING COMPANY - DRILL HOLE LOG		HOLE TYPE & SIZE: 6" 13' long		HOLE NUMBER: H-1
LOCATION: ^{Section 35} 22-24	DEPTH: 75'	TOT. FT. - 2 U.S.A.		DATE COMPLETED: 4/15/70
COLLAR ELEV. = 1742	COORDINATES: N 7636		E 5700	DATE STARTED: 4/13/70

ELEVATION	INTERVAL	EMISSION	SAMPLE NUMBER	GEOLOGY	
				LOG	DESCRIPTION
5					0° - 34° gravel mostly under 1" diameter decrease in size to pea gravel @ 12 feet.
10					
15					
20					
25					
30					
35					34' - thin 0.5" clay seam.
40					34' - 44' - fairly well sorted medium sand w/ a few thin pebbly interbeds.
45					
50					
55					55' - 65' - 0.5" clay seam
60					65' - 70' moist pebbly sand.
65					
70					70-75 pure well sorted fine sands
75					T.D. 75'
80					
85					
90					
95					
100					

J. K. Kohnen
4-15-70

LAWSON COMPANY - DRILL HOLE LOG		HOLE TYPE & SIZE: 6" Rotary		HOLE NUMBER: H-2	
LOCATION: <i>1/2 mile S of 25</i>		DEPTH: 70'	TOT FT - 210.0	DATE COMPLETED: 4/12/78	
COLLAR ELEV: 21740		COORDINATES: N 75 7710 ; E 5780		DATE STARTED: 4/12/78	

ELEVATION	INTERVAL	EMISSION	SAMPLE NUMBER	GEOLGY
21740	0-5			0-35 Gravel Coarse thru 18 ft, then pebbly w/ some sand, interbeds - Trace of clay @ 31'
21735	5-10			
21730	10-15			
21725	15-20			
21720	20-25			
21715	25-30			
21710	30-35			
21705	35-40			@ 35 2-3" clay crin.
21700	40-45			35-55 Interbedded medium sands and clay 7" layers. Sands predominant
21695	45-50			
21690	50-55			
21685	55-60			55-56 Claystone - likely about 3" thick
21680	60-65			55-70 Fine well sorted fine sand. Slightly pebbly at top just beneath to clay becomes mudst @ 60 ft.
21675	65-70			
21670	70-75			
21665	75-80			
21660	80-85			
21655	85-90			
21650	90-95			
21645	95-100			
21640	100-105			
21635	105-110			
21630	110-115			
21625	115-120			
21620	120-125			
21615	125-130			
21610	130-135			
21605	135-140			
21600	140-145			
21595	145-150			
21590	150-155			
21585	155-160			
21580	160-165			
21575	165-170			
21570	170-175			
21565	175-180			
21560	180-185			
21555	185-190			
21550	190-195			
21545	195-200			
21540	200-205			
21535	205-210			
21530	210-215			
21525	215-220			
21520	220-225			
21515	225-230			
21510	230-235			
21505	235-240			
21500	240-245			
21495	245-250			
21490	250-255			
21485	255-260			
21480	260-265			
21475	265-270			
21470	270-275			
21465	275-280			
21460	280-285			
21455	285-290			
21450	290-295			
21445	295-300			
21440	300-305			
21435	305-310			
21430	310-315			
21425	315-320			
21420	320-325			
21415	325-330			
21410	330-335			
21405	335-340			
21400	340-345			
21395	345-350			
21390	350-355			
21385	355-360			
21380	360-365			
21375	365-370			
21370	370-375			
21365	375-380			
21360	380-385			
21355	385-390			
21350	390-395			
21345	395-400			
21340	400-405			
21335	405-410			
21330	410-415			
21325	415-420			
21320	420-425			
21315	425-430			
21310	430-435			
21305	435-440			
21300	440-445			
21295	445-450			
21290	450-455			
21285	455-460			
21280	460-465			
21275	465-470			
21270	470-475			
21265	475-480			
21260	480-485			
21255	485-490			
21250	490-495			
21245	495-500			
21240	500-505			
21235	505-510			
21230	510-515			
21225	515-520			
21220	520-525			
21215	525-530			
21210	530-535			
21205	535-540			
21200	540-545			
21195	545-550			
21190	550-555			
21185	555-560			
21180	560-565			
21175	565-570			
21170	570-575			
21165	575-580			
21160	580-585			
21155	585-590			
21150	590-595			
21145	595-600			
21140	600-605			
21135	605-610			
21130	610-615			
21125	615-620			
21120	620-625			
21115	625-630			
21110	630-635			
21105	635-640			
21100	640-645			
21095	645-650			
21090	650-655			
21085	655-660			
21080	660-665			
21075	665-670			
21070	670-675			
21065	675-680			
21060	680-685			
21055	685-690			
21050	690-695			
21045	695-700			
21040	700-705			
21035	705-710			
21030	710-715			
21025	715-720			
21020	720-725			
21015	725-730			
21010	730-735			
21005	735-740			
21000	740-745			
20995	745-750			
20990	750-755			
20985	755-760			
20980	760-765			
20975	765-770			
20970	770-775			
20965	775-780			
20960	780-785			
20955	785-790			
20950	790-795			
20945	795-800			
20940	800-805			
20935	805-810			
20930	810-815			
20925	815-820			
20920	820-825			
20915	825-830			
20910	830-835			
20905	835-840			
20900	840-845			
20895	845-850			
20890	850-855			
20885	855-860			
20880	860-865			
20875	865-870			
20870	870-875			
20865	875-880			
20860	880-885			
20855	885-890			
20850	890-895			
20845	895-900			
20840	900-905			
20835	905-910			
20830	910-915			
20825	915-920			
20820	920-925			
20815	925-930			
20810	930-935			
20805	935-940			
20800	940-945			
20795	945-950			
20790	950-955			
20785	955-960			
20780	960-965			
20775	965-970			
20770	970-975			
20765	975-980			
20760	980-985			
20755	985-990			
20750	990-995			
20745	995-1000			
20740	1000-1005			
20735	1005-1010			
20730	1010-1015			
20725	1015-1020			
20720	1020-1025			
20715	1025-1030			
20710	1030-1035			
20705	1035-1040			
20700	1040-1045			
20695	1045-1050			
20690	1050-1055			
20685	1055-1060			
20680	1060-1065			
20675	1065-1070			
20670	1070-1075			
20665	1075-1080			
20660	1080-1085			
20655	1085-1090			
20650	1090-1095			
20645	1095-1100			
20640	1100-1105			
20635	1105-1110			
20630	1110-1115			
20625	1115-1120			
20620	1120-1125			
20615	1125-1130			
20610	1130-1135			
20605	1135-1140			
20600	1140-1145			
20595	1145-1150			
20590	1150-1155			
20585	1155-1160			
20580	1160-1165			
20575	1165-1170			
20570	1170-1175			
20565	1175-1180			
20560	1180-1185			
20555	1185-1190			
20550	1190-1195			
20545	1195-1200			
20540	1200-1205			
20535	1205-1210			
20530	1210-1215			
20525	1215-1220			
20520	1220-1225			
20515	1225-1230			
20510	1230-1235			
20505	1235-1240			
20500	1240-1245			
20495	1245-1250			
20490	1250-1255			
20485	1255-1260			
20480	1260-1265			
20475	1265-1270			
20470	1270-1275			
20465	1275-1280			
20460	1280-1285			
20455	1285-1290			
20450	1290-1295			
20445	1295-1300			
20440	1300-1305			
20435	1305-1310			
20430	1310-1315			
20425	1315-1320			
20420	1320-1325			
20415	1325-1330			
20410	1330-1335			
20405	1335-1340			
20400	1340-1345			
20395	1345-1350			
20390	1350-1355			
20385	1355-1360			
20380	1360-1365			
20375	1365-1370			
20370	1370-1375			
20365	1375-1380			
20360	1380-1385			
20355	1385-1390			
20350	1390-1395			
20345	1395-1400			
20340	1400-1405			
20335	1405-1410			
20330	1410-1415			
20325	1415-1420			
20320	1420-1425			
20315	1425-1430			
20310	1430-1435			
20305	1435-1440			
20300	1440-1445			
20295	1445-1450			
20290	1450-1455			
20285	1455-1460			
20280	1460-1465			
20275	1465-1470			
20270	1470-1475			

HOLE TYPE & SIZE:		HOLE NUMBER: H-3
LOCATION: 200	DEPTH: 105 ft	TOT FT - 105.00
COLLAR ELEV: 1740	COORDINATES: N 9,180 ; E 5100	
		DATE COMPLETED: 4/2/78
		DATE STARTED: 5/6/78

LOCATION	INTERVAL	EMISSION	SAMPLE NUMBER	GEOLOGY	
5				0'-18'	Coarse gravels
10					
15					
20				18-30	Medium Sands w/ Pebbly Interbeds
25					
30				30'	thin clay associated with Pebbly layer
35				32	Thin clay seam; about 2"
40				32-45	Medium to fine Sands with a few Pebbly Interbeds
45					
50				45-74	Pure well sorted fine Sands
55					
60					
65					
70					
75				75-75	clay layer (small inches thick)
80				75-105	Pure well sorted very fine sands
85					Increasingly moist with depth.
90					
95					
100					

CROWN PUMP	WELL TYPE: <u>DRILL</u>	LOG	HOLE TYPE & SIZE: <u>Polony</u>	HOLE NUMBER: <u>H-4</u>
LOCATION: <u>1741</u>	DEPTH: <u>100'</u>	TOT. FT. - <u>100'</u>	DATE COMPLETED: <u>9/13/80</u>	
COLLAR ELEV: <u>1741</u>	COORDINATES: <u>N 73.59</u>	<u>E 53.12</u>	DATE STARTED: <u>9/13/80</u>	

VATION	INTERVAL	EMISSION	SAMPLE NUMBER	GEOLOGY	
0				0° - 18°	coarse gravel
5					
10					
15					
20				18° - 30°	Sandy "fine" gravel medium grade sand
25					
30				30° - 34°	Same as above w/ trace of clay
35				34° - 45°	well sorted medium sands w/ few pebbles & fines
40					
45				45° - 73°	well sorted fine fine sands.
50					
55					
60					
65					
70					
75				73° - 76°	Lower clay, in most fine sands
80				76° - 100°	Very fine pure sand.
85					
90					
95					
100					

1741
 H-4
 1

Total Depth 100' S. - P. - 33

STATION: 1735	DEPTH: 150	TOT. FI. - 2 U ₂ O ₈ :	HOLE NUMBER: H-10
COORDINATES: N 79 40 E 51 28	DATE COMPLETED: 2/14/79	DATE STARTED: 2/12/79	

STATION	INTERVAL	EMISSION	SAMPLE NUMBER	GEOLGY
5				0-12 coarse sands & gravel frags.
10				
15				12-50 coarse to medium sized sands w/ interbedded fine gravel and occasional pebble fragments.
20				
25				
30				
35				@32 small clay layer
40				@41 clay layer
45				@44 clay layer
50				@47 clay layer
55				50-62 medium to medium fine sands well sorted.
60				
65				62-109 very fine well sorted sands. (blow sand)
70				<div style="display: flex; align-items: center;"> <div style="margin-right: 10px;"> @69 @74 @82 @87 @94 </div> <div style="border-left: 1px solid black; padding-left: 10px;"> fine brown silty clays </div> </div>
75				
80				
85				
90				
95				
100				

P. L. R. G. R.
 H-10 1

NY - DRILL HOLE LOG | HOLE TYPE & SIZE: 6" Rotary | HOLE NUMBER: 4-10
 LOCATION: 7047 | DEPTH: 100 | TOT. FEET U.C.B.: | DATE COMPLETED: 2/14/79
 COLLAR: 1735 | COORDINATES: N 7040 ; E E/58 | DATE STARTED: 2/12/79

LOCATION	ELEVATION	INTERVAL	EMISSION	SAMPLE NUMBER	GEOLOGY	
					102 Thin brown clay layer 102 grey appearing fine sand.	
	105				104 - 150 Grey silty/clays w/ slightly sandy Texture, tough, Dense, Plastic, slightly wireable mixture is moist but not overly saturated.	
	110					
	115					
	120					
	125					
	130					
	135					
	140					
	145					
	150				T.D. 150 ft.	
	155					
	0					
	5					
	0					
	5					
	0					
	5					
	0					
	5					
	0					

P. 10
 1-10

LAWY - DRILL HOLE LOG		HOLE TYPE & SIZE: 6" Rotary		HOLE NUMBER: H-11	
LOCATION: 25° 25' N 12° 0' E		DEPTH: 175'		DATE COMPLETED: 3/5/79	
COLLAR ELEV: 1739		COORDINATES: N 7918 E 5895		DATE STARTED: 2/28/79	

VARIATION	INTERVAL	EMISSION	SAMPLE NUMBER	GEOLOGY	
	0-16'			Coarse Sands & Gravel 'pea' sized Fragments	
	16-36'			Coarse to medium sized sands w/ interbedded 'pea' sized gravel @ 16' thin clay layer (tan color)	
	36-44'			Medium to medium fine sands Well sorted.	
	44-48'			@ 42' thin clay layer 3' thick	
	48-143'			Basalt Fragments & coarse granitic lands.	

P. H. H. H.
H-11

DANIEL M. & SONS COMPANY - DRILL HOLE LOG		HOLE TYPE & SIZE 6" Rotary		HOLE NUMBER: H-11	
LOCATION: <i>East of road 1/2 mi S of 175°</i>		DEPTH: 175°		DATE COMPLETED: 3/5/72	
COLLAR ELEV.: 1739		COORDINATES: N 79°18' E 5895		DATE STARTED: 2/24/72	

VARIATION	INTERVAL	EMISSION	SAMPLE NUMBER	GEOLOGY	
	105				
	110				
	115				
	120				
	125				
	130				
	135				
	140				
	145				
	150				
	155				
	160				
	165				
	170				
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	990				
	995				
	1000				

43-175 Small fragments - possible
basement break (bedrock)

T.D. 175°

P. L. L. L.
2-11-72

RECORD OF BOREHOLE 1

Figure A-2A

LOCATION See Figure A-1

DATUM D.M.

DATE 9/18 to 9/19-79

SAMPLER HAMMER WEIGHT 140 LB., DROP 30 IN.

BORING METHOD Hollow Auger

SOIL PROFILE			SAMPLES			ELEVATION	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	FIELD PERM. (CM/SEC)	PERM. D ₁₀ ² (CM/SEC)	WATER LEVEL
DEPTH	DESCRIPTION	STRAT. PLOT	NUMBER	TYPE	BLOWS/FT.						
0	Loose brown fine to coarse gravel and cobbles with fine to coarse sand and trace silt (GP)					1741					
5	Stiff brown clay (CL)		☒	SPT 12							
	Compact brown clayey fine sand and silt (SC)										
10			☐	SS 24			3.9	82			
15	Dense brown fine to coarse sand and gravel with some silt (SP/GP)		☒	SPT 34			3.0				
20			☒	SS 39			5.9			.010	
25			☒	SPT 34			3.2				
30	Grading thin clay/silt layers from 30 ft. to 40 ft.		☐	SS 97			2.7	116			

REMARKS: SPT = Standard Penetration Test and Jar Sample

SS = 3" Split Spoon with Brass Sleeves

☐ = No Recovery

☒ = Disturbed Sample

☐ = Relatively Undisturbed Sample

VERTICAL SCALE

1 IN. = 10 FT.

Golder Associates

DRAWN

CHECKED BY

S. P. 38

RECORD OF BOREHOLE 1

Figure A-2B

LOCATION See Figure A-1

DATUM DMC

DATE 9/18 to 9/19 -79

SAMPLER HAMMER WEIGHT 140 LB., DROP 30 IN.

BORING METHOD Hollow Auger

SOIL PROFILE			SAMPLES			ELEVATION	MOISTURE CONTENT (%)	DRY DENSITY (PGF)	FIELD PERM. (CM/SEC)	PERM. D_{10}^2 (CM/SEC)	WATER LEVEL
DEPTH	DESCRIPTION	STRAT. PLOT	NUMBER	TYPE	BLOWS/FT.						
35	Compact to dense brown fine to medium sand with trace silt (SP)		<input checked="" type="checkbox"/> SPT47			1706	2.0				
40			<input type="checkbox"/> SS		93				RAPID		
45			<input checked="" type="checkbox"/> SPT34				7.8				
50			<input type="checkbox"/> SS		41						
55			<input checked="" type="checkbox"/> SPT21				7.6				
60	Grading with clayey silty layers at 65 ft.		<input type="checkbox"/> SS43				7.9	84	.0004		
65			<input checked="" type="checkbox"/> SPT10				2.4		.0004		

REMARKS: SPT = Standard Penetration Test and Jar Sample

SS = 3" Split Spoon with Brass Sleeves

☐ = No Recovery

☒ = Disturbed Sample

☐ = Relatively Undisturbed Sample

VERTICAL SCALE

1 IN. TO 5 FT.

Golden Associates

DRAWN

REV

39

RECORD OF BOREHOLE 1

Figure A-2C

LOCATION: Figure A-1

DATUM DMC

DATE 9/18 to 9/19-79

SAMPLER HAMMER WEIGHT 140 LB., DROP 30 IN.

BORING METHOD Hollow Auger

SOIL PROFILE			SAMPLES			ELEVATION	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	FIELD PERM. (CM/SEC)	PERM. D_{10}^2 (CM/SEC)	WATER LEVEL
DEPTH	DESCRIPTION	STRAT. PLOT	NUMBER	TYPE	BLOWS/FT.						
-70	Grading clean fine sand		<input type="checkbox"/> SS 60		1671						
-75			<input checked="" type="checkbox"/> SPT23				8.9				
-80			<input type="checkbox"/> SS 72				8.2	89			
-85			<input checked="" type="checkbox"/> SPT35				8.4				
-90			<input checked="" type="checkbox"/> SS 34				7.8	89			
-95			<input checked="" type="checkbox"/> SPT19				24.2				93'4" 10-17
-100	Boring completed 98'8" 9-19-78							.0004			

REMARKS: SPT = Standard Penetration Test and Jar Sample

SS = 3" Split Spoon with Brass Sleeves

☐ = No Recovery

☒ = Disturbed Sample

☐ = Relatively Undisturbed Sample

VERTICAL SCALE

NOT TO SCALE

Golder Associates

DRAWN

CHECKED

S. P. 40

RECORD OF BOREHOLE 2

Figure A-2D

LOCATION 3 - Figure A-1

DATUM DMC

DATE 9-21-79

TAMPLER HAMMER WEIGHT 140 LB., DROP 30 IN.

BORING METHOD Hollow Auger

SOIL PROFILE			SAMPLES			ELEVATION	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	FIELD PERM. (CM/SEC)	PERM. D_{10}^2 (CM/SEC)	WATER LEVEL
DEPTH	DESCRIPTION	STRAT. PLOT	NUMBER	TYPE	BLOWS/FT.						
0	Loose brown fine to coarse gravel and cobbles with some fine to medium sand, trace silt (GP)					1745					
5											
10											
15											
20	Dense brown fine to coarse sand and gravel with trace silt. (SP/GP)		<input checked="" type="checkbox"/>	SS	33		2.4			.02	
25			<input type="checkbox"/>	SPT	12						
30			<input type="checkbox"/>	SS	28		4.3	100			
	Compact to dense brown fine to medium sand (SP)										

REMARKS: SPT = Standard Penetration Test and Jar Sample

SS = 3" Split Spoon with Brass Sleeve

☐ = No Recovery

☒ = Disturbed Sample

☐ = Relatively Undisturbed Sample

VERTICAL SCALE

Golden Associates

DRAWN

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S. P. 4T

RECORD OF BOREHOLE 2

Figure A-2E

LOCATION: See Figure A-1

DATUM DMC

DATE 9-21-79

AMPLER HAMMER WEIGHT 140 LB., DROP 30 IN.

BORING METHOD Hollow Auger

SOIL PROFILE		SAMPLES			ELEVATION	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	FIELD PERM. (CM/SEC)	PERM. D_{10}^2 (CM/SEC)	WATER LEVEL
DEPTH	DESCRIPTION	STRAT. PLOT	NUMBER	TYPE						
35	(Cont'd)		<input checked="" type="checkbox"/>	SPT 18		4.8			.032	
	Compact to dense brown fine to medium sand (SP)									
40			<input type="checkbox"/>	SS 38		4.9	101		.009	
45			<input checked="" type="checkbox"/>	SPT 9		7.1			.017	
50			<input type="checkbox"/>	SS 15						
55			<input checked="" type="checkbox"/>	SPT 12		8.5				
60			<input type="checkbox"/>	SS 20		6.1	93		.003	
65			<input checked="" type="checkbox"/>	SPT 14		7.7				

REMARKS: SPT = Standard Penetration Test and Jar Sample

SS = 3" Split Spoon with Brass Sleeves

= No Recovery

= Disturbed Sample

= Relatively Undisturbed Sample

VERTICAL SCALE

1 IN. = 10 FT.

Golder Associates

DRAWN

CHECKED

S. P. 42

Sheet 3 of 3

RECORD OF BOREHOLE 2

Figure A-2F

LOCATION See Figure A-1

DATUM DMC

DATE 9-21-79

AMPLER HAMMER WEIGHT 140 LB., DROP 30 IN.

BORING METHOD Hollow Auger

SOIL PROFILE			SAMPLES			ELEVATION	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	FIELD PERM. (CM/SEC)	PERM. D_{10}^2 (CM/SEC)	WATER LEVEL
DEPTH	DESCRIPTION	STRAT. PLOT	NUMBER	TYPE	BLOWS/FT.						
70			<input type="checkbox"/> SS 23			1675	13.6				
75	Grading with thin layers of clay/silt from 75'		<input checked="" type="checkbox"/> SPT11								
80			<input type="checkbox"/> SS 35								
	Talus Material, large boulders (Basalt?)								.0004		
85	Boring completed 84 ft. 9-21-79										
	Groundwater not encountered.										

REMARKS: SPT = Standard Penetration Test and Jar Sample

SS = 3" Split Spoon with Brass Sleeves

☐ = No Recovery☒ = Disturbed Sample☐ = Relatively Undisturbed Sample

VERTICAL SCALE

1 IN. = 10 SFT.

Golder Associates

DRAWN

CHECKED

LOCATION See Figure A-1

DATUM DMC

DATE 9-24-79/9-25-79

HAMMER HAMMER WEIGHT 140 LB., DROP 30 IN.

BORING METHOD Hollow Auger

DEPTH	DESCRIPTION	SOIL PROFILE			ELEVATION	SAMPLES					WATER LEVEL
		STRAT. PLOT	NUMBER	TYPE	BLOWS/FT.	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	FIELD PERM. (CM/SEC)	PERM. D_{10}^2 (CM/SEC)		
0	Loose brown cobbles, fine to coarse gravel with some fine to coarse sand and trace silt (CP)					174.1					
5											
10											
15			<input type="checkbox"/>	SPT 25			3.2				
20			<input checked="" type="checkbox"/>	SS 55			3.2				
25			<input type="checkbox"/>	SPT 21			2.1				
30	Dense brown fine to coarse sand, fine to coarse gravel, layers & trace silt (CP-GM)		<input type="checkbox"/>	SS 32			7.5	104			

MARKS: SPT = Standard Penetration Test and Jar Sample

SS = 3" Split Spoon with Brass Sleeves

☐ = No Recovery ☒ = Disturbed Sample ☐ = Relatively Undisturbed Sample

Golder Associates

DRAWN
CHECKED S. P. 44

LOCATION: Figure A-1

DATUM: DMC

DATE: 9-24-79/9-25-79

SAMPLER: HAMMER WEIGHT 140 LB., DROP 30 IN.

BORING METHOD: Hollow Auger

DEPTH	SOIL PROFILE		SAMPLES		ELEVATION	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	FIELD PERM. (CM/SEC)	PERM. D ₁₀ ² (CM/SEC)	WATER LEVEL
	DESCRIPTION	STRAT. PLOT	NUMBER	TYPE						
35			☒ SPT 18		1706	4.5				
40			☐ SS 33			6.2	100			
45			☒ SPT 19			6.7				
50			☐ SS 26			12.0	98			
55	Compact to dense brown fine to medium sand (SP) (Thin brown clay layers present at 61' and 80'-85')		☒ SPT 13			3.6				
60			☒ SS 34			25.3				
65			☒ SPT 13			5.1				
								.003		

REMARKS: SPT = Standard Penetration Test and Jar Sample
 SS = 3" Split Spoon with Brass Sleeves
 ☐ = No Recovery ☒ = Disturbed Sample [] = Relatively Undisturbed Sample

VERTICAL SCALE

Golder Associates

DRAWN _____
CHECKED _____

S. P. 45

RECORD OF BOREHOLE 3

Figure A-21

LOCATION: See Figure A-1

DATUM: DMC

DATE: 9-24-79/9-25-79

SAMPLER: HAMMER WEIGHT 140 LB., DROP 30 IN.

BORING METHOD: Hollow Auger

SOIL PROFILE			SAMPLES			ELEVATION	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	FIELD PERM. (CM/SEC)	PERM. D_{10}^2 (CM/SEC)	WATER LEVEL
DEPTH	DESCRIPTION	STRAT. PLOT	NUMBER	TYPE	BLOWS/FT.						
70	(Cont'd)		<input type="checkbox"/> SS	31		1671					
	Compact to dense, brown fine to medium sand (SP)										
75	(Thin brown clay layers present at 61' and 80'-85')		<input checked="" type="checkbox"/> SPT	12			9.3				
80			<input type="checkbox"/> SS	27							
85			<input checked="" type="checkbox"/> SPT	13			4.8				
90			<input type="checkbox"/> SS	36					.0025		
95			<input checked="" type="checkbox"/> SPT	14			9.3				
100	Groundwater not encountered.		<input checked="" type="checkbox"/> SPT	15							
	Boring completed 101 1/2'										
	9-25-79										

REMARKS: SPT = Standard Penetration Test and Jar Sample

SS = 3" Split Spoon with Brass Sleeves

☐ = No Recovery

☒ = Disturbed Sample

☐ = Relatively Undisturbed Sample

VERTICAL SCALE

Goldier Associates

DRAWN

CHECKED BY

S. P. 75

3. GENERAL REQUIREMENTS

Standards and Codes

Throughout these specifications, references are made to standards and codes, designated by abbreviations for the issuing bodies. The Contractor and Subcontractors shall be familiar with these standards and codes as they pertain to the work.

Temporary Facilities

1. The Contractor shall provide and maintain all facilities, as required, for the performance of the work including but not limited to:
 - 1) weathertight sheds for storing materials requiring protection from the weather;
 - 2) work shops and garages;
 - 3) equipped first aid station in accordance with Workmen's Compensation Board and other Authorities having jurisdiction;
 - 4) temporary lighting and power facilities required for the proper execution of the work, in accordance with the rules and regulations of the National Electrical Code and the local authority having jurisdiction; the Contractor shall provide for his own power as required.
 - 5) safety glasses, safety shoes, and hard hats for all personnel;
 - 6) hearing protection as required;
 - 7) dust protectors (masks) as required.

Room and Board

1. No facilities are available at the site by the Owner.
2. If required, the Contractor shall provide his own room and board facilities for his personnel. Any costs related to this requirement will be included in his Tender price.

Fire Protection

1. Fires will not be permitted on site without specific approval by the Owner. Remove combustible and non-combustible waste at regular intervals and/or when directed. Precautions shall be taken to avoid fire by spontaneous combustion. Smoking shall be prohibited in areas where volatile fumes or liquids are being used. Post "NO SMOKING" signs and comply with the fire regulations of the Owner and of other authorities having jurisdiction.

Fire Protection cont.

2. The Contractor shall provide, and maintain in good working order, sufficient fire-fighting equipment and materials to meet all the requirements of authorities having jurisdiction and in any case, sufficient fire extinguishers to meet protection requirements of Underwriter's standard based on area and hazards.

Existing Services

The Owner shall, on the Contractor's request, provide information regarding the location of buried services installed by the Owner or others. The Contractor shall be responsible for the protection of all services (whether below, on or above ground) and the repair of any damage to such services caused by the Contractor except where the damage arises from erroneous information supplied by the Owner. The methods of protecting the services shall be subject to the Owner's satisfaction.

Protection of the Work

In addition to the requirements of Article 24 of the General Conditions, the Contractor shall provide adequate protection of materials and work from damage due to operations under this Contract. This protection shall include, where necessary, the materials and work of others as well as the materials and work of this Contract. Repair any damages to at least the standard specified for the original work.

Setting out the Work

1. The Owner has provided information of the control survey and bench mark for use for the work on the drawings included in Appendix A.
2. The Contractor shall provide the services of a Registered Land Surveyor to accurately set out the work from the bench marks and reference points provided. Establish additional bench marks and working points as required. Provide additional survey during excavation and installation as the work progresses.
3. If at any time an error appears or arises in the position, levels, grades, dimensions or alignments of parts of the work, the Contractor shall, at his own expense rectify such errors to the satisfaction of the Owner unless such error is based upon incorrect data provided by the Owner. Checking by the Owner of the setting out of the work shall not relieve the Contractor of his responsibility for the correctness thereof. Furnish the Owner with reasonable assistance which may be required at any time in checking the work.

Existing Grades

1. The Owner has provided the latest existing contours of the area in the list of drawing appearing in Appendix A.
2. The Contractor shall, if he so desires, cross section the area prior to commencement of excavation. If any discrepancy arises settle the differences with the Owner immediately. Provide to the Owner one copy of the survey completed by your Registered Land Surveyor.

Final Survey

1. Upon completion of the work cross-section the area and calculate the volume of material excavated and compacted in the dikes.
2. Obtain the services of a Registered Land Surveyor to calculate materials.
3. Quantities agreed upon with the Owner shall be the basis of final payment.

4. EXCAVATION, STOCKPILING AND DIKE CONSTRUCTION

A. Excavation

1. Carry out excavation to the extent and elevations required for the construction of the tailings disposal area as shown on the drawings. Excavate to allow for the installation, of the sand fill above and below the liner, and the rip-rap facing.
2. Excavate the areas where perforated pipe and other associated pipe are required.
3. Excavate for installation of drain depression and liner anchoring as shown on the drawings or as recommended by the liner manufacturer. This work is to be completed prior to placing of the sand bedding to the tailings disposal area.
4. It is anticipated that weathered rock may be encountered in the lower east portion of the excavation. Removal of the rock will be done with a ripper. No blasting is considered part of the unit price for this removal.

Grading

1. Upon completion of the excavation and dike compaction, grade the banks and sides of the completed areas.
2. Windrows shall not be greater than 6 inches high.
3. The area shall be left in level condition acceptable by the Owner.
4. Grading shall be completed to the required finished elevations.

Dewatering

1. Upon completion of the work pump out all excess surface water which has accumulated in the bottom of the excavation.
2. Remove all temporary facilities and backfill dewatering trenches with accepted material, placed and compacted as directed.

Existing Fence

1. Remove existing fence and replace to the new location as shown on the drawing.
2. Provide any new fencing and posts as required to complete the installation.

B. Stockpiling

A minimum of 4 stockpiles will be required:

1. Fine sand
2. Mixed sand and gravel
3. Coarse gravel
4. Basalt

Approximate stockpile locations and outlines are shown on Drawing No. 7419-13-001 Rev. 1 entitled Tailings Disposal Project Stockpile Locations and Details.

Any changes made in stockpile locations and sizes may be made only with Owner's approval.

Generally, no compaction of stockpiles will be required. The Owner will arrange for stabilization of the stockpiles by means of Hydro-seeding. This is not part of this contract.

The Contractor must ensure that no material infringes on private property.

Quantities shown on the drawing are estimates and may be adjusted to suit Owner's requirements.

C. Dike Construction

The 5 foot high perimeter dikes around the tailings disposal facility are to be constructed from the near surface coarse gravel, cobble and sand material.

This material is to be placed in a manner which will facilitate achieving a compaction averaging 85% and in no case less than 80% of relative density as determined by A.S.T.M. D2049-69. This test has been performed by Golder Associates and yields a density of _____ . (See Appendix B for the method).

C. Dike Construction cont.

Exterior slopes of all constructed dikes or dikes that are added onto should be no steeper than 3h:1v. This slope angle will facilitate revegetation and reclamation and also will reduce the effects of wind and water erosion. Prior to placing any dike construction materials on new ground or on existing dikes, all surface vegetation, major roots and other organic debris should be removed and wasted. Materials placed in stockpiles adjacent to the dikes do not need to be compacted.

Bulking Factors

To estimate the ratio of inplace volume of material to the volume of the same amount of material in a stockpile, it is necessary to know the bulking factor of that material. Based on data available from Caterpillar Tractor Co., (1978), a bulking factor of 10 percent should be applied to overburden sand and gravel materials placed in stockpiles. That is, an inplace volume equal to 100 cubic yards will require 110 cubic yards of stockpile volume. A portion of the excavation may be in weathered basalt. A bulking factor of 40 percent should be used for this material.

5. HYPALON LINING INSTALLATION PROCEDURES

A. General

Installation shall be performed by a contractor that has previously installed a minimum of 500,000 sq. ft. (46,000 sq. m) of this material or by a Contractor that has a Fabricator Field Representative in attendance. The surface (substrate) to receive the liner shall be smooth and free of sharp objects that could puncture the lining. All vegetation must be removed. A soil sterilant may be required at the discretion of the engineer. The Hypalon lining shall be placed over the surfaces to be lined in such a manner as to assure minimum handling. It shall be sealed to all concrete structures and other openings through the lining in accordance with details shown on the drawings submitted by the Contractor and approved by the engineer. The lining shall be closely fitted and sealed around inlets, outlets, and other projections through the lining using prefabricated fittings wherever possible.

1. Field Joints

Lap joints shall be used to seal factory fabricated panels of Hypalon together in the field. Lap joints shall be formed by lapping 4 in. (10 cm) minimum of the reinforced portion of the film. All field seaming will be performed using only the manufacturer's approved adhesives and application directions.

2. Repairs to Hypalon

Any necessary repairs to the Hypalon shall be patched with the lining material itself. Use a patch large enough to extend 6 in (15 cm) in all directions from the puncture. Use field joint procedure.

3. Quality of Workmanship

All joints, on completion of the work, shall be tightly bonded. Any lining surface injury due to scuffing, penetration by foreign objects, or distress from rough subgrade shall, as directed by the engineer, be replaced or covered and sealed with an additional layer of Hypalon of the proper size. All field seams are to be 100% inspected per specification by the installation Contractor and/or the lining Manufacturer's Representative. An authorized representative of the installation Contractor shall certify in writing that the surface on which the lining is to be placed is acceptable. No installation of lining shall commence until this certification is furnished to the engineer.

B. Earthen Cover Material

Immediately following installation of the lining, the lining shall be covered with 12 inches (30 cm) minimum of earthen cover material. This cover material shall contain no sharp stones, or any material that might puncture the lining. This material shall be placed on the liner using rubber tired or track vehicles. Vehicles shall not drive

B. Earthen Cover Material cont.

directly on the liner, but may operate on the previously laid cover material. Care should be taken to eliminate traffic which may cause damage to the lining material. The Contractor will be responsible for any damage to the lining material during covering operations.

C. Quality Assurance

The Contractor shall, at his expense, provide a Technical Representative of the liner fabricator at the jobsite to insure compliance with the manufacturers directions. The Technical Representative must be present when the liner installation is started and may make periodic check-backs, if required. He shall instruct and observe the work, reporting unsatisfactory conditions or recommendations for improvement in procedures to the Contractor. The Technical Representative shall not be directly responsible for the quality of the work involved; such responsibility shall be solely that of the Contractor.

6. LINER SUBSURFACE PREPARATION AND EARTHEN COVER

As stated in sections A, of the Hypalon lining installation procedures, the surface which will receive the liner must be smooth and free of sharp objects which might pierce the liner.

It is expected that in order to insure the above, a layer of sand not less than 6 inches thick will be required in the basalt and upper coarse gravel areas. This sand will have to be smoothed and graded to produce a proper surface. The majority of the excavation will be in fine sands which will not require the 6 inch layer of sand under the liner.

Section B, of the liner installation procedures discusses the placement of the earthen cover material atop the liner. This material must meet the specification for bedding/cover sand shown in Appendix B, material specifications.

Figure 1 in Appendix B shows a cross section of the rip-rap layers and filter. Specifications for the various types of material are to be found in Appendix B.

Grading

1. Upon completion of the placing of the earthen cover, grade the banks and sides of the completed areas.
2. Windrows shall not be greater than 6 inches high.
3. The area shall be left in level condition acceptable by the Owner.
4. Grading shall be completed to the required finished elevations.

7. SUBDRAIN SYSTEM INSTALLATION

A. General

The subdrain system will be placed on a 200 foot spacing as shown in Figure 2.

Drain pipes should slope at 5 percent towards a common sump at the northwest corner of the disposal pit. The drain pipe should be layed out so that the entire toe of the disposal pit has a drain pipe parallel to it. Four-inch drain pipes should be used for the individual pipes and an eight-inch pipe should be used for the collector pipe along the northeast side of the pit. The pipe should have slot sizes no greater than 0.01 inches.

The system must have flush capability and therefore must be open at both ends. Capped riser pipes should be installed at the upstream ends of the drain pipes and the sump would provide access to the downstream end of the system.

The subdrain system design is shown in detail in drawing No. 7419-13-004 Rev. 1, entitled Tailings Disposal Project Contract 2 Liner Installation Plan and Sections. Drain material specifications are given in Appendix B of these specifications. Pipe specifications and installation instructions are as follows.

B. Subdrain Installation Specifications

Perforated Pipe

1. Supply and install P.V.C. perforated pipe to the location and slope as shown on the drawings.
2. The pipe shall be installed in accordance with the manufacturers recommendation.
3. Ensure that all joints are sealed.
4. Connect to the F.R.P. riser pipe at the sump location.

Flush Pipes

1. Supply and install P.V.C. flush pipes to the location shown on the drawing.
2. Imbed the pipes in the sand bedding.
3. Provide removable cap at top of pipe above grade.
4. Extend the pipe a minimum of 12 inches above grade.
5. Provide protective barriers around pipe. Boulders of 12 to 18 inch size are suitable.

Fittings

1. The fittings used between the perforated drain pipe and the flush pipe shall be standard P.V.C. if feasible.
2. If unable to obtain standard fittings provide F.R.P. fittings to the angles necessary for the installation.
3. Ensure that the adhesive used in securing the P.V.C. pipe to the F.R.P. fitting is compatible for the installation.

Riser Pipe

1. Supply and install riser pipe to the location as shown on the drawings.
2. The pipe shall have a closed bottom and openings for the perforated drainage pipe.
3. Provide F.R.P. removable cover.
4. Ensure that the riser pipe extends a minimum of 12 inches above final grade.
5. Provide a protective barrier around the pipe.
6. All pipe sections shall be jointed in a method recommended by the manufacturer.
7. Provide shop drawings and details for the Owner's approval prior to fabrication of the pipe.
8. Pipe shall be designed to withstand the pressure of the tailings. Design to a safety factor of three. (Bulk density 110.6 lbs/cu. ft.)

Inspection

1. Following completion of the pipe installation and prior to completion of the work the Contractor shall, in the presence of the Owner, inspect all riser and flush pipes to ensure that no debris is lodged in the pipe.
2. This shall be done by probing, lighting or flushing with water.

C. Subdrain Pipe Specifications

1. 4 inch and 8 inch diameter perforated pipe shall have six rows of 0.01 inch wide slots equally spaced around the circumference of the pipe.
2. Perforated pipe shall be P.V.C. construction similar to ASTM standard D1785.

C. Subdrain Pipe Specifications cont.

3. 4 inch diameter flush pipes shall be P.V.C. construction to ASTM standard D1785.
4. P.V.C. pipe shall be as manufactured by Hydrophilic Industries, Inc. of Puyallup, Washington or approved equivalent.
5. 18 inch diameter F.R.P. pipe shall be manufactured as per section 28.5 of contract specifications.

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EXCAVATION AND LINING

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APPENDIX A

LIST OF DRAWINGS

<u>DRAWING NUMBER</u>	<u>DESCRIPTION</u>	<u>REV. NO.</u>
7419-13-001	Excavation & Stockpiles Location & Details	
7419-13-002	Excavation Plan & Sections	
	Reference Only	
7419-13-004	Liner Installation Plan and Sections	

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APPENDIX B

MATERIAL SPECIFICATIONS

The criteria for the riprap layer will be as follows:

1. The riprap layer thickness should be 18 inches thick measured normal to the slope.
2. The maximum rock size in the riprap should be 18 inches and the minimum rock size should be 1 inch.
3. The minimum average rock size (D₅₀) should be 10 inches.
4. The riprap should be well graded and placed in such a manner as to avoid excessive segregation of partical sizes.

It is also necessary to underlay the riprap by a 2-stage filter to protect the sand covering the hypalon liner from erosion. This requires a modification of the original slope design. Figure 1 illustrates the modifications required in the upper portion of the slope crest to accomodate the riprap and 2-stage filter arrangement. As shown, the riprap layer is 18 inches thick, the riprap filter is 9 inches thick, the underlying drain pipe filter layer is 9 inches thick and the cover sand layer is 12 inches thick. The configuration of slope has also been slightly modified so that the riprap is resting above inplace soil rather than cover sand as originally designed. This has been done to improve the long term integrity of the riprap.

As a result of the modification in the riprap design it has been necessary to design specifications for the materials in the 2-stage filter. The fine stage of the filter or the material resting on top of the bedding sand can be the same gradation as the material which will be placed around the drainage pipes. The specifications for the drain pipe filter material are as follows:

DRAIN PIPE FILTER GRADATION CRITERIA

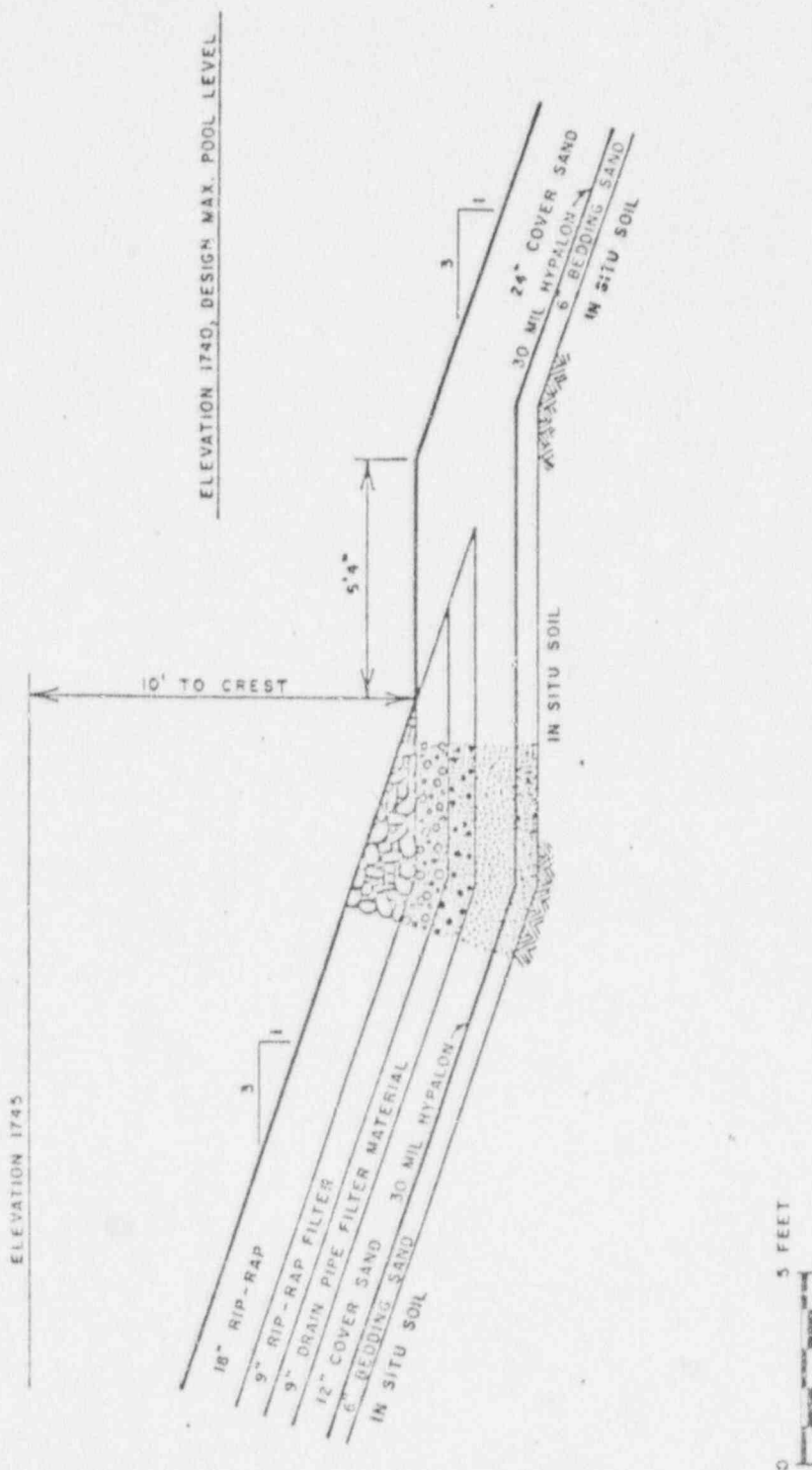
<u>Sieve</u>	<u>Percent Finer</u>
1/2 inch	100
#4	80-100
#10	45-85
#20	5-40
#40	0-10
#200	less than 2

A graphic representation of this material is presented on Figure B-2. The drain pipe filter material should be well graded and should be placed in such a manner as to avoid segregation of particles.

REVISED SLOPE PROTECTION DETAIL

Figure
B-1

See Figure 4 Of Golder Associates Report Dated 2 November 1979



Because of the large difference in grain size between the riprap and the drain pipe filter material an intermediate filter layer herein referred to as the riprap filter will also be required. This filter layer should meet the following gradation requirements which are also graphically presented on Figure B-2.

RIP-RAP FILTER GRADATION CRITERIA

<u>Grain Size</u>	<u>Percent Finer</u>
4 inch	100
1-1/4 inch	70-90
3/8 inch	15-35
#4	less than 15

This material should be placed in a uniform layer directly overlying the drain pipe filter material. The material should be well graded and placed in such a manner as to minimize segregation of particles.

BEDDING/COVER SAND GRADATION CRITERIA

<u>Sieve</u>	<u>Percent Finer</u>
#4	100
#10	95-100
#20	85-100
#40	30-100
#100	0-30
#200	less than 5

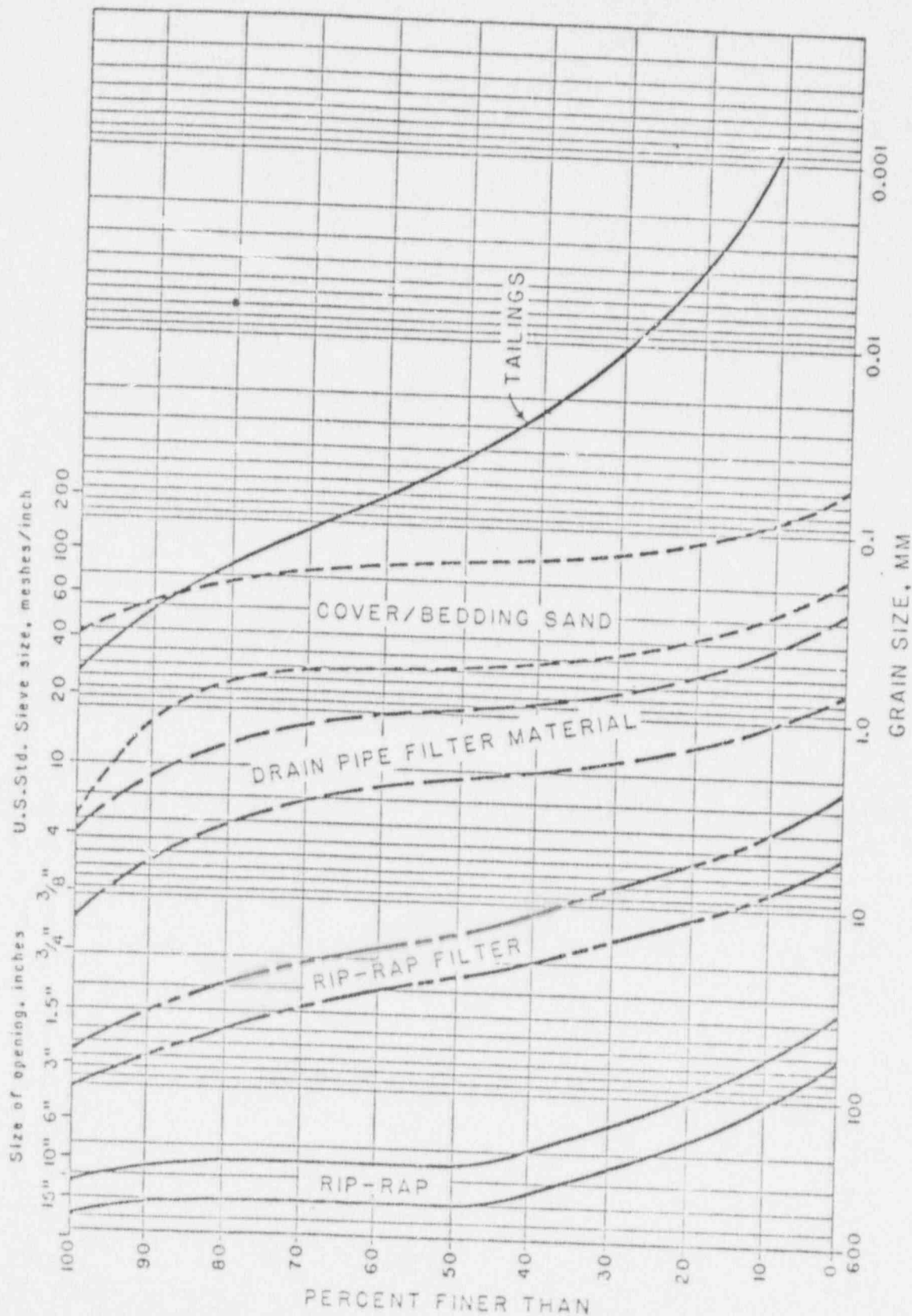
The material should be well graded and its gradation curve should be approximately parallel to the bedding sand gradation envelope presented on Figure 2. This will insure that the segregation criteria are met. In all cases the cover sand should be placed in such a manner as to minimize segregation of particles.

For the same reason that the bedding sand gradation specifications were modified the specifications for the drain pipe filter material have also been modified to the following requirements:

GRAIN SIZE DISTRIBUTIONS

Figure
B-2

M.I.T. GRAIN SIZE SCALE



COBBLE SIZE	GRAVEL SIZE			SAND SIZE		FINE GRAINED	
	COARSE	MEDIUM	FINE	COARSE	MEDIUM	FINE	CLAY SIZE

DRAIN PIPE FILTER GRADATION CRITERIA

<u>Sieve</u>	<u>Percent Finer</u>
1/2 inch	100
#4	80-100
#10	45-85
#20	5-40
#40	0-10
#200	less than 2

The filter material should be well graded and its gradation curve should be approximately parallel with the drain pipe filter envelope presented on Figure B-2. The drain pipe filter material should be placed in such a manner as to avoid particle segregation. (These are the same as presented in the response to NRC Comment #3.)

Standard Method of Test for RELATIVE DENSITY OF COHESIONLESS SOILS¹



ASTM Designation: D 2049 - 69

This Standard of the American Society for Testing and Materials is issued under the fixed designation D 2049; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reappraisal.

Scope

1. This method of test is intended for determining the relative density of cohesionless free-draining soils for which impact compaction will not produce a well-defined moisture-density relationship curve and the maximum density by impact methods will generally be less than by vibratory methods. Soils for which this method is applicable may contain up to 12 per cent, by weight, of soil particles passing a No. 200 (74- μ) sieve, depending upon the distribution of particle sizes which will cause them to have free-draining characteristics. This method utilizes vibratory compaction to obtain maximum density and pouring to obtain minimum density.

Definition

2. *Relative Density*.—Relative density is defined as the state of compactness of a soil with respect to the loosest and densest states at which it can be placed

¹ Under the standardization procedure of the Society, this method is under the jurisdiction of the ASTM Committee D-18 on Soil and Rock for Engineering Purposes. A list of members may be found in the ASTM Year Book.

Current edition effective Sept. 19, 1969. Originally issued 1964. Replaces D 2049 - 64 T.

by the laboratory procedures described in this method. It is expressed as the ratio of (1) the difference between the void ratio of a cohesionless soil in the loosest state and any given void ratio, to (2) the difference between its void ratios in the loosest and densest states. Mathematical expressions for this definition are presented in Section 8.

Apparatus

3. The assembly of the apparatus is shown in Fig. 1. Individual components and accessories shall be as follows:

(a) *Vibratory Table*.—A steel table with a cushioned steel vibrating deck about 30 by 30 in., actuated by an electromagnetic vibrator. The vibrator should be a seminoiseless type with a net weight over 100 lb. The vibrator shall have a frequency of 3,600 vibrations per minute, a vibrator amplitude variable between 0.002 and 0.025 in. under a 250-lb load, and shall be suitable for use with 230-v ac.

(b) *Molds*.—Cylindrical metal unit-weight molds of 0.1 and 0.5 cu ft capacity, conforming to the dimensional requirements as shown in Fig. 2.

(c) *Guide Sleeves*.—One guide sleeve

TEST FOR RELATIVE DENSITY OF COHESIONLESS SOILS (1) (2) (3)

with clamp assembly (see Fig. 3(a)) for each size mold. Two of the three set screws on the clamp assembly should be provided with lock nuts.

(d) *Surcharge Base Plates.*—One surcharge base plate $\frac{1}{2}$ in. in thickness for each size mold.

(e) *Surcharge Weights.*—One surcharge weight (see Fig. 4) for each size mold.

diameter by 6 in. in length, with cylindrical spouts and lipped brims for attaching to 6 in. diameter by 12 in. high metal cans.

(k) *Mixing Pans.*—Two sizes of metal pans, one approximately 2 ft by 3 ft by 4 in. deep and the other approximately 16 by 16 by 2 in. deep.

(l) *Scale.*—One portable platform

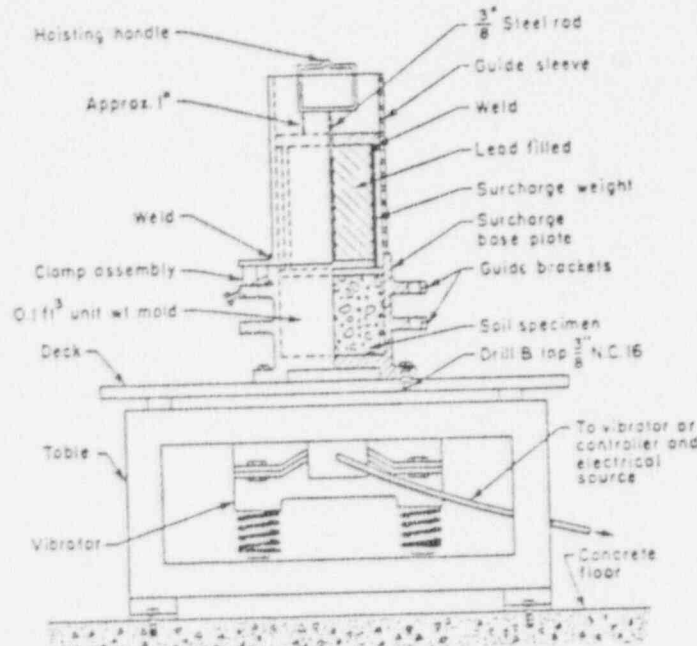


FIG. 1.—Assembly of Apparatus (with 0.1-Cu-Ft Mold Assembly).

The total weight of surcharge base plate and surcharge weight shall be equivalent to 2 psi for the mold being used.

(f) *Surcharge Base Plate Handle.*—One for each surcharge base plate (see Fig. 3(b)).

(g) *Dial Indicator Gage Holder,* as shown in Fig. 3(c).

(h) *Dial Indicator,* 2-in. travel with 0.001-in. graduations.

(i) *Calibration Bar,* metal, 3 by 12 by $\frac{1}{2}$ in.

(j) *Pouring Devices.*—Pouring devices consisting of funnels $\frac{1}{2}$ in. and 1 in. in

scale, 250 lb capacity, with 0.01-lb graduations.

(m) *Hoist.*—A rope, chain, or cable hoist of at least 300 lb capacity.

(n) *Other Equipment,* including a large metal hand scoop, a hair-bristled dusting brush, a timing device indicating in minutes and seconds, a 15-in. metal straight-edge, and a 0 to 1-in. micrometer accurate to 0.001 in.

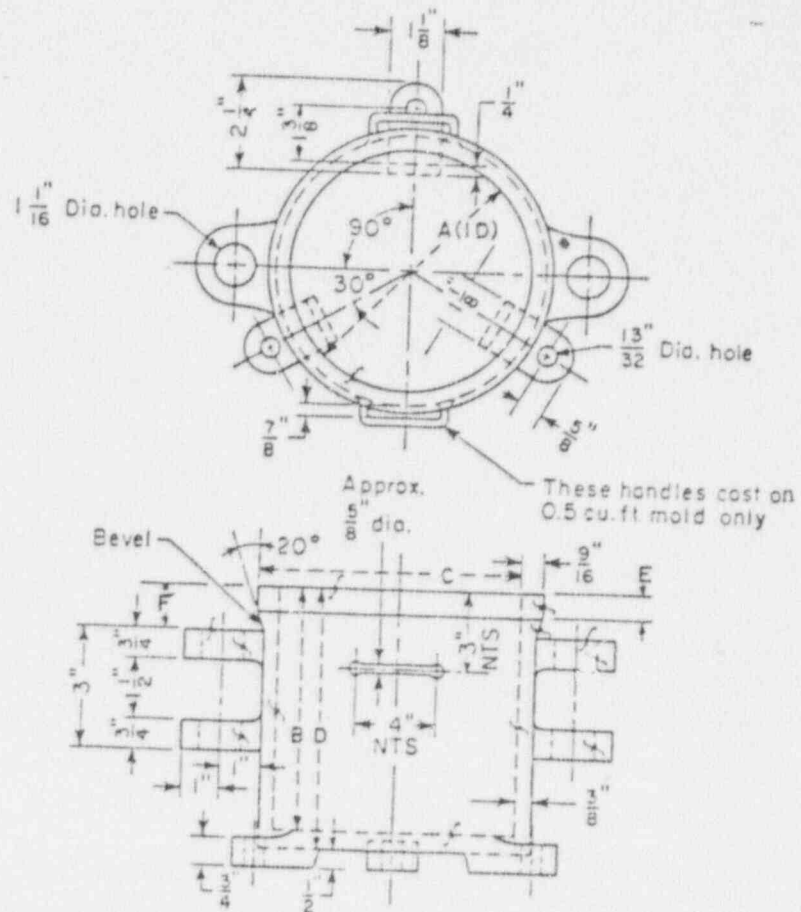
Calibration

4. Determine the volume of the mold by direct measurement and check the

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volume by filling with water as provided in (a) or (b). Determine the initial dial reading for computing the volumes of the specimen as provided in (c).

mold to the nearest 0.0001 cu ft and the 0.5-cu-ft mold to the nearest 0.001 cu ft. Calculate also the average inside cross-sectional area of the mold in square feet.



Size Mold (cu ft)	Dimensions, in.					
	A	B	C	D	E	F
0.1	8.000	8.112	$7\frac{1}{8}$	$6\frac{1}{2}$	$\frac{1}{2}$	$1\frac{1}{8}$
0.5	11.000	9.092	$12\frac{1}{8}$	$9\frac{1}{2}$	$\frac{3}{8}$	2

Fig. 2.—Details of Molds.

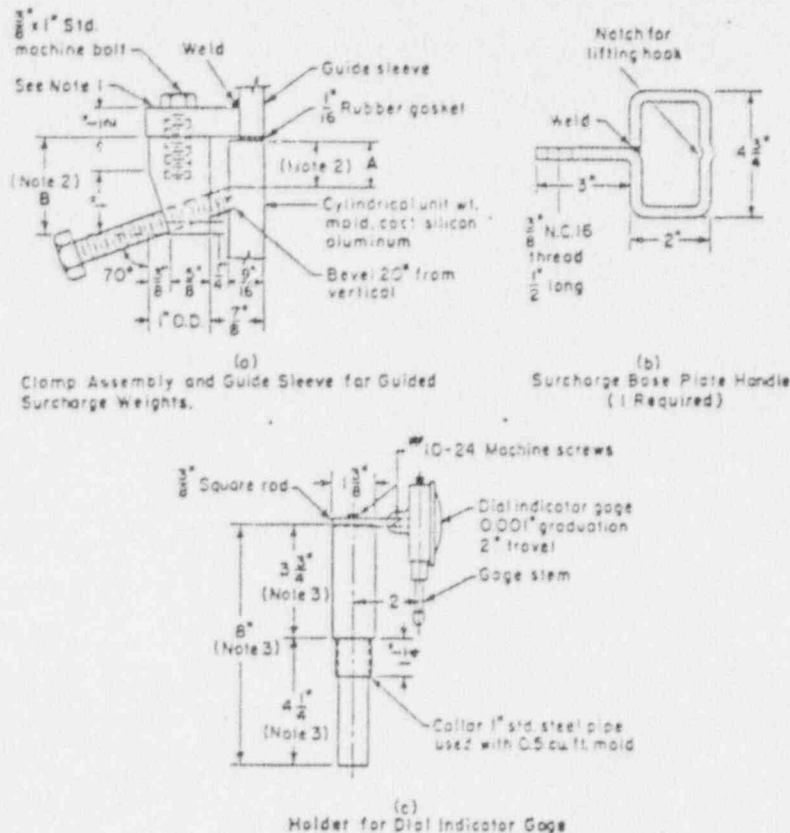
(a) *Volume by Direct Measurement.*—Determine the average inside diameter and height of the mold to 0.001 in. Calculate the volume of the 0.1-cu-ft

(b) *Volume by Filling with Water.*—Determine the weight of the water, in grams, required to fill the mold. Slide a glass plate carefully over the top surface

TEST FOR RELATIVE DENSITY OF COHESIONLESS SOILS (D 2049) 625

of the mold in such a manner as to ensure that the mold is completely filled with water. Determine the temperature of the

the volume of the mold, in cubic feet, by multiplying the weight of water, in grams, used to fill the mold by the unit



NOTE 1.—This piece shall be a steel bar, $1\frac{1}{2}$ by $\frac{1}{2}$ in., of a length necessary to produce the indicated dimension from the inside of the guide sleeve. Weld 3 clamp assemblies to the guide sleeve at equal spacing.

NOTE 2.—See the following tabulation:

Size Mold, cu ft	A, in.	B, in.	Guide Sleeve
0.1	$1\frac{1}{2}$	$1\frac{1}{2}$	Steel tubing, 6 in. I.D., $\frac{1}{4}$ in. wall, 12 in. long
0.5	$1\frac{1}{2}$	$1\frac{1}{2}$	Steel pipe, 11 in. I.D., $\frac{1}{4}$ in. wall, 8 in. long

NOTE 3.—These dimensions must be changed to fit the dial gage indicator used.

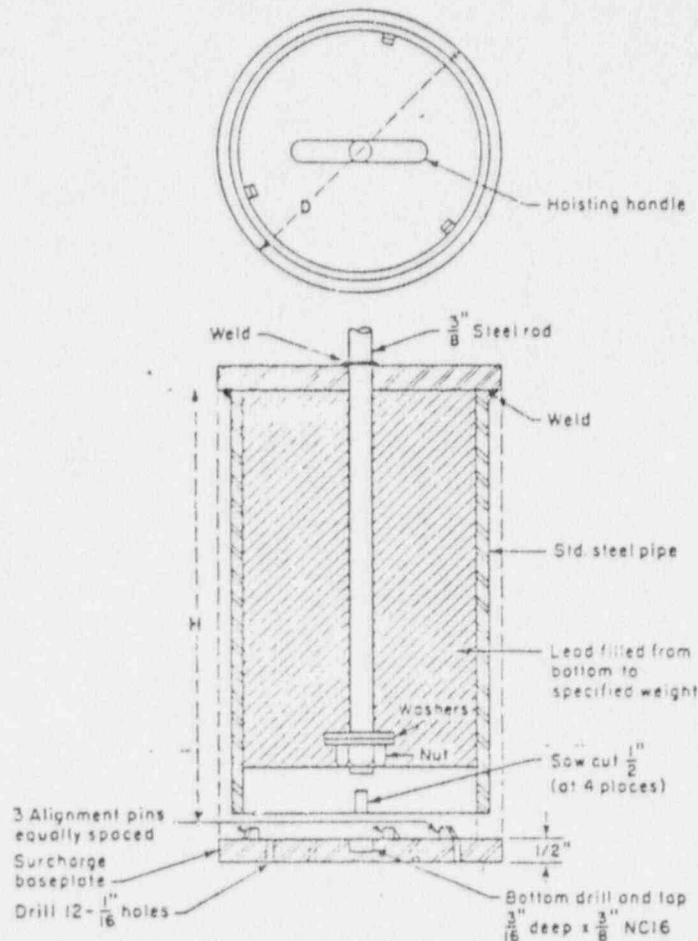
FIG. 3.—Instrument Components.

water in the mold. A thin film of cup grease on the top surface of the mold will make a watertight joint between the glass plate and top of the mold. Calculate

volume of water, in milliliters per gram at the observed temperature taken from Table I, and dividing the result by 28,317 milliliters per cubic foot.

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(c) *Initial Dial Reading.*—Determine the thicknesses of the surcharge base plate and the calibration bar to 0.001 in. using a micrometer. Place the calibration bar across a diameter of the mold along the axis of the guide brackets. Insert the dial indicator gage holder in each of the guide brackets on the measure with the dial gage stem on top of the calibration bar and on the axis of the guide brackets.



Size Mold, cu ft	D, in.	H, in.	Sid. pipe, in.	Total wt. required, lb.
0.1	$5\frac{15}{16}$	9	4	57 ± 0.5
0.5	$10\frac{7}{8}$	6	10	190 ± 1.0

NOTE 1.—All plates shall be $\frac{3}{8}$ -in.-thick steel.

NOTE 2.—Top plates for weights may be torch-cut, but edges must be ground as smooth as practicable. Surcharge base plates must be machined to the specified diameter.

NOTE 3.—Hoisting handles shall have the same shape as the Surcharge Base Plate Handle (see Fig. 3(b)).

FIG. 4.—Surcharge Weight.

TEST FOR RELATIVE DENSITY OF COHESIONLESS SOILS (D 2049)

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The dial gage holder should be placed in the same position in the guide brackets each time by means of matchmarks on the guide brackets and the holder. Obtain six dial indicator readings, three on the left side and three on the right side, and average these six readings. Compute the initial dial reading by adding together the surcharge base plate thickness and the average of the six dial indicator readings and subtract the thickness of the calibration bar. The initial dial reading is constant for a particular measure and surcharge base plate combination.

Sample

5. Select a representative sample of soil. The weight of sample required is determined by the maximum size of particle as follows:

Maximum Size of Soil Particle	Weight of Sample Re- quired, lb	Pouring Device To Be Used in Mini- mum Density Test	Size of Mold To Be Used, cu ft
3-in.	100	Shovel or extra large scoop	0.6
1½-in.	25	Scoop	0.1
¾-in.	25	Scoop	0.1
⅜-in.	25	Pouring Device (1-in. dia. spout)	0.1
No. 4 (4.75- mm)	25	Pouring Device (½-in. dia. spout)	0.1

Dry the soil sample in an oven at a temperature of 130 ± 9 F (110 ± 5 C). Process the soil through a sieve with openings sufficiently small to break up all weakly cemented soil particles.

Minimum Density Procedure

6. Determine the minimum density (zero relative density), (maximum void ratio) as follows:

(a) Select the pouring device and mold according to the maximum size of particle as indicated in Section 5. Weigh the mold and record the weight. Use oven-dried soil.

(b) Place soil containing particles smaller than ¾ in. as loosely as possible in the mold by pouring the soil from the spout in a steady stream while at the same time adjusting the height of the spout so that the free fall of the soil is 1 in. At the same time, move the pouring device in a spiral motion from the outside toward the center to form a soil layer of uniform thickness without segregation. Fill the mold approximately 1 in. above the top and screed off the excess soil level with the top by making one continuous pass with the steel straight-

TABLE 1.—VOLUME OF WATER PER GRAM BASED ON TEMPERATURE.*

Temperature		Volume of Water, ml per g
deg C	deg F	
12	53.6	1.00048
14	57.2	1.00073
16	60.8	1.00103
18	64.4	1.00138
20	68.0	1.00177
22	71.6	1.00221
24	75.2	1.00268
26	78.8	1.00320
28	82.4	1.00375
30	86.0	1.00435
32	89.6	1.00497

* Values other than shown may be obtained by referring to the Handbook of Chemistry & Physics, Chemical Rubber Publishing Co., Cleveland, Ohio.

edge. If all excess material is not removed, an additional continuous pass shall be made but great care must be exercised during the entire pouring and trimming operation to avoid jarring the mold.

(c) Place soil containing particles larger than ¾ in. by means of a large scoop (or shovel) held as close as possible to and just above the soil surface to cause the material to slide rather than fall onto the previously placed soil. If necessary, hold large particles back by hand to prevent them from rolling off the scoop. Fill the mold to overflowing but not more than 1 in. above the top.

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With the use of the steel straightedge (and the fingers when needed), level the surface of the soil with the top of the measure in such a way that any slight projections of the larger particles above the top of the mold shall approximately balance the larger voids in the surface below the top of the mold.

(d) Weigh the mold and soil and record the weight.

Maximum Density Procedure

7. Determine the maximum density (100 per cent relative density, minimum void ratio) by either the dry or wet method as follows:

(a) Dry Method:

(1) Mix the sample of oven-dried soil to provide an even distribution of particle sizes with as little segregation as possible.

(2) Assemble the guide sleeve on top of the mold and tighten the clamp assemblies so that the inner wall of the sleeve is in line with the inner wall of the mold. Tighten the lock nuts on the two set screws equipped with lock nuts. Loosen the clamp assembly having no lock nuts, remove the guide sleeve. Weigh the empty mold and record the weight.

(3) Fill the mold with soil by the procedure specified in Section 6(b) or (c) (Note 1).

NOTE 1.—Normally, the mold filled with soil for the minimum density determination may be used for the maximum density determination without refilling the mold.

(4) Attach the guide sleeve to the mold and place the surcharge base plate on the soil surface. Lower the surcharge weight onto the surcharge base plate, using the hoist in the case of the 0.5-cu-ft mold.

(5) Set the vibrator control at maximum amplitude and vibrate the loaded specimen for 8 min. Remove the

surcharge weight and guide sleeve from the mold. Obtain and record dial indicator gage readings on two opposite sides of the surcharge base plate, average, and record the average. Weigh the mold and soil if this has not been done in the minimum density determination or if an appreciable amount of fines has been lost during vibration. Record the weight.

(b) Wet Method:

NOTE 2.—While the dry method is preferred from the standpoint of securing results in a shorter period of time, the highest maximum density is obtained for some soils in a saturated state. At the beginning of a laboratory testing program, or when a radical change of materials occurs, the maximum density test should be performed on both wet and dry soil to determine which method results in the higher maximum density. If the wet method produces higher maximum densities, (in excess of one per cent) it shall be followed in succeeding tests.

(1) The wet method may be conducted on oven-dried soil to which sufficient water is added or, if preferred, on wet soil from the field. If water is added to dry soil allow a minimum soaking period of $\frac{1}{2}$ hr.

(2) Fill the mold with wet soil by means of a scoop or shovel. Add sufficient water to the soil to allow a small amount of free water to accumulate on the surface of the soil during filling. The correct amount of water can be estimated by a computation of the void ratio at expected maximum density or by experimentation with the soil. During and just after filling the mold, vibrate the soil for a total of 6 min. During this period reduce the amplitude of the vibrator as much as necessary to avoid excessive boiling and fluffing of the soil, which may occur in some soils. During the final minutes of vibration, remove any water appearing above the surface of the soil.

(3) Assemble the guide sleeve, surcharge base plate, and surcharge weight as described in Paragraph (a) (4).

TEST FOR RELATIVE DENSITY OF COHESIONLESS SOILS (D 2049) 629

(4) Vibrate the specimen and surcharge weight for 8 min. After the vibration period, remove the surcharge weight and guide sleeve from the mold. Obtain and record dial indicator gage readings on two opposite sides of the surcharge base plate. Carefully remove the entire wet specimen from the mold and dry to

RELATIVE DENSITY DETERMINATIONS

Project _____ Feature _____ Sample No. _____

Tested by _____ Computed by _____ Checked by _____

Minimum Density Determination (OS Relative Density)			
Test No.			
Wt. soil + mold lbs.			
Wt. mold lbs.			
Wt. soil (W_s) lbs.			
Volume of mold (V_o) cu.ft.			
Minimum dens. $\frac{W_s}{V_o}$ pcf			

Relative Density Computation			
Test No.			
In plate			
① density pcf			
② max. lab. density pcf			
③ min. lab. density pcf			
④ ① - ③			
⑤ ② - ③			
⑥ ④ x ⑤			
Relative Dens. $\frac{⑥}{⑤} \times 100$			

Mold No. _____	Surcharge base plate no. _____
Surcharge base pl. thick. _____ in.	
Straightedge thickness _____ in.	
Left dial read. _____	
Right dial read. _____	
R_1 = Avg. dial gage read. + surcharge base pl. thick. - st. edge thick.	
R_2 = _____ in.	

Maximum Density Determination (100% Relative Density)			
	Dry Method	Wet Method	
Test No.			
Left gage read. inches			
Right gage read. inches			
Avg. gage read. R_1			
Initial gage read. R_2			
Area of sample surface sq.ft. A			
Calib. vol. of mold cu.ft. V_o			
Soil vol. = $V_o -$ $\frac{R_2 - R_1}{A} \times A$ V			
Wt. dry soil + mold lbs.			
Wt. mold lbs.			
Wt. dry soil lbs. W_s			
Maximum Density $\frac{W_s}{V}$ pcf			

FIG. 1.—Recommended Report Form.

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constant weight. Weigh dry specimen and record.

Calculations

8. (a) *Minimum Density*.—Calculate minimum density, γ_{min} , in pounds per cubic foot, as follows:

$$\gamma_{min} = \frac{W_s}{V_s}$$

(b) *Maximum Density*.—Calculate maximum density, γ_{max} , in pounds per cubic foot, as follows:

$$\gamma_{max} = \frac{W_s}{V_s}$$

where:

W_s = weight of dry soil, pounds,

V_s = calibrated volume of mold, cubic feet,

V = volume of soil, cubic feet = $V_s - (R_i - R_f)/12 \times A$,

R_f = final dial gage reading on the surcharge base plate after completion of the vibration period, inches,

R_i = initial dial gage reading, inches, and

A = cross-sectional area of mold, square feet.

(c) *Density of Soil in Place*.—Determine the density of the soil in place, γ_d , in a compacted fill or a natural deposit in accordance with either the Method of Test for Density of Soil in Place by the Sand-Cone Method (ASTM Designa-

tion: D 1556)² or the Method of Test for Density of Soil in Place by the Rubber-Balloon Method (ASTM Designation: D 2167).²

(d) *Relative Density*.—Calculate relative density, D_d , expressed as a percentage as follows:

$$D_d = \frac{\gamma_{max}(\gamma - \gamma_{min})}{\gamma(\gamma_{max} - \gamma_{min})} \times 100$$

or in terms of void ratio

$$D_d = \frac{e_{max} - e}{e_{max} - e_{min}} \times 100$$

where:

e = the volume of voids divided by the volume of solid particle,

e_{max} = void ratio in loosest state, and

e_{min} = void ratio in most compact state.

Report

9. The report shall include the following information. A recommended form is shown in Fig. 5.

(1) Method used for determining minimum density (funnel or scoop),

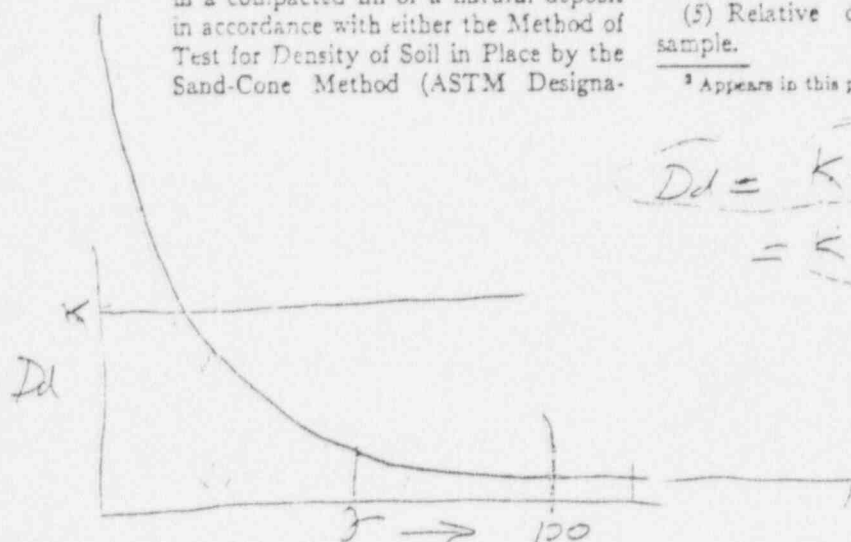
(2) Method used for obtaining maximum density (dry or wet, and mold size),

(3) Minimum and maximum densities,

(4) Density "in-place" of the field sample, and

(5) Relative density of the field sample.

² Appears in this publication.



DAWN MINING COMPANY

FORD, WASHINGTON

CONTRACT NO. C1

EXCAVATION AND LINING

TAILINGS DISPOSAL PROJECT

APPENDIX C

STATUTORY DECLARATIONS

The following Statutory Declaration forms are attached to this Appendix.

1. Statutory Declaration Re: Payment of Accounts

A facsimile of this form is to be used by the Contractor when submitting the second and succeeding progress estimates in accordance with the General Conditions, Article 28.2.

2. Statutory Declaration Re: Liens and Liabilities

A facsimile of this form is to be submitted by the Contractor prior to the release of any retaining by the Owner in accordance with the General Conditions, Article 29.6.

STATUTORY DECLARATION

RE: PAYMENT OF ACCOUNTS

UNITED STATES OF AMERICA

IN THE MATTER of a Contract, known as
Contract No. _____ entered into
between _____
and _____
on _____ 19 ____
for the construction of _____

TO WIT:

I, _____ of _____ in the
State of _____ do solemnly declare:-

1. That I am _____ ** of the
(President, Secretary, Treasurer, a partner, etc.)
Contractor named in the Contract above mentioned and as such have
personal knowledge of the facts hereunder declared.
2. That all workmen employed by the said Contractor in the performance
of the said Contract have been paid in full not less frequently than
semi-monthly and up to and including the pay-day immediately preceding
the date of this declaration.
3. That, with the exception of the disputed accounts set forth in paragraph 4
hereof and amounts held back and payments deferred by written agreement,
all liabilities + incurred by the said Contractor arising out of work
performed up to _____ 19 *, as set forth in the Monthly
Estimate relating to Payment Certificate No. _____ *, have been discharged.

NOTE:

- + Including payments due to all staff, sub-contractors, suppliers,
Workmens' Compensation Board, insurance companies.
- * Except as required by paragraph 2, it is not necessary for the
Contractor to declare in respect of accounts relating to the work
set forth in the latest Monthly Estimate but only in respect of work
set forth in the Monthly Estimate immediately preceding the latest one.
- ** See next page.

STATUTORY DECLARATION (Cont'd)

4. That the following is a complete list of disputed accounts:-

Name of Creditor	Services Rendered	Total Claim \$	Amount in Dispute \$	Amount Paid \$
------------------	-------------------	-------------------	-------------------------	-------------------

(If there are no disputed accounts, enter "NONE" above.)

AND I MAKE THIS SOLEMN DECLARATION conscientiously believing it to be true and knowing that it is of the same force and effect as if made under oath and by virtue of "

DECLARED before me at the

of

in the of

this day of

A.D. 19 .

A Commissioner, etc., or Notary Public

NOTE:

** In the Contractor's own interest, he should complete this declaration carefully and correctly. Mistakes or omissions will probably result in delayed payment. The declaration is to be submitted to the Owner in duplicate together with each monthly progress claim (except the first one for the Contract) and must be signed by an authorized signing officer of the Contractor. Declarations signed by others will not be acceptable.

STATUTORY DECLARATION
RE: LIENS AND LIABILITIES

UNITED STATES OF AMERICA

IN THE MATTER of a Contract, known as
Contract No. _____ entered into
between _____
and _____
on _____ 19 _____
for the construction of _____

TO WIT:

I, _____ of _____ in the
State of _____ do solemnly declare:-

1. That I am _____ ** of the
(President, Secretary, Treasurer, a partner, etc.)
Contractor named in the Contract above mentioned and as such have personal
knowledge of the facts hereunder declared.
2. That all persons who have performed any work or service upon or in
respect of, or placed or furnished any materials or things to be used in
connection with the above Contract, have been fully paid or their claims
have been settled in respect of such work, service, materials or things
and there are no liens, garnishees, attachments or claims relating thereto.
3. That all sub-contractors who were engaged in or in any manner associated
with the performance of any part of the above Contract have been fully
paid or their claims have been settled in respect thereof except to the
extent that monies have been held back by written agreement with any such
sub-contractors.
4. That all claims for damage to property or injury to persons of which
the above-named Contractor has received notice have been fully paid or
settled.
5. That the above-named Contractor has not had any notice of any grounds
for a claim (other than those covered by paragraph 4 above) connected
with this Contract by a third party and for which a claim might be made,
and I believe that no such claim will be made.

STATUTORY DECLARATION (continued)

AND I MAKE THIS SOLEMN DECLARATION conscientiously believing it to be true and knowing that it is of the same force and effect as if made under oath and by virtue of "

DECLARED before me at the

of

in the of

this day of

A.D. 19 .

A Commissioner, etc., or Notary Public

NOTE:

- ** In the Contractor's own interest, he should complete this declaration carefully and correctly. Mistakes or omissions will probably result in delayed payment. The declaration is to be submitted to the Owner in duplicate and must be signed by an authorized signing officer of the Contractor. Declarations signed by others will not be acceptable.

DAWN MINING COMPANY

FORD, WASHINGTON

CONTRACT NO. C1

EXCAVATION AND LINING

TAILINGS DISPOSAL PROJECT

APPENDIX D

TRIBAL EMPLOYMENT RIGHTS ORDENANCE

The following are attached to this Appendix:

1. Spokane Indians Tribal Employment Rights Ordenance
2. Civil Rights Act of 1964, Title 7, Section 703.

No. _____

The Spokane Tribe does hereby enact the following

SPOKANE TRIBAL
EMPLOYMENT RIGHTS ORDINANCE

Section 1. General Provisions and Purpose

1.1 Name. This ordinance shall be known as the "Spokane Employment Rights Ordinance".

1.2 Purpose. The purpose of this Ordinance is to assist in and require the fair employment of Indians on or near the Spokane Indian Reservation and to prevent discrimination against Indians in the employment practices of Reservation employers.

Section 2. Definition of Important Terms and Words.

2.1 "Chairman" shall mean the Chairman of the Spokane Employment Rights Commission.

2.2 "Commission" shall mean the Spokane Employment Rights Commission which, until changed by the Tribal Business Council, will be comprised of the Tribal Business Council.

2.3 "Council" shall mean the Business Council of the Spokane Tribe.

2.4 "Commissioner" shall mean a Commissioner of the Spokane Employment Rights Commission.

2.5 "EEOC" shall mean the Equal Employment Opportunities Commission of the United States.

2.6 "Employer" shall mean any person, company, contractor, subcontractor, or other entity located or engaged in work on the Reservation, employing five or more persons. The term "employer" excludes Federal, State, and County Government agencies but includes agencies, contractors, and subcontractors of all other agencies.

2.7 Engaged in Work on the Reservation. An employer is "engaged in work on the Reservation" if during any portion of a business enterprise or specific project, contract or subcontract, he or any of his employees spends a majority of his time performing work within the exterior boundaries of the Reservation on a continuing basis;

2.8 "HRC" shall mean the Human Rights Commission of the State of Washington.

2.9 "Indian" shall mean any person recognized as an Indian by the United States pursuant to its trust responsibility to American Indians.

2.10 "Indian Owned Business" shall mean a business entity of which at least 51% is owned by Indians.

2.11 Located on the Reservation. An employer is "located on the Reservation" if during any portion of a business enterprise or specific project contract or subcontract, he maintains a temporary or permanent office or facility within the exterior boundaries of the Reservation.

2.12 "OFCCP" shall mean the Office of Federal Contract Compliance Programs of the United States.

2.13 "Reservation" shall mean the Spokane Indian Reservation, Washington.

2.14 "Secretary" shall mean the Secretary of the Interior or his duly authorized representatives.

2.15 "Tribal Member; Member" shall mean any person who is a duly enrolled member of the Spokane Indian Tribe, unless the contract clearly indicates otherwise.

2.16 "Tribe" Shall mean the Spokane Indian Tribe.

2.17 Located "Near" the Reservation "Near" shall mean any Employer located within daily commuting distance of the Reservation.

Section 3. Spokane Employment Rights Commission.

3.1 Duties of the Commission. The Commission shall administer the

Employment Rights Program of the Spokane Indian Tribe in accordance with this ordinance.

3.2 Powers of the Commission. The Commission shall have the power:

(a) To hire and fire Commission employees and to pay salaries pursuant to a salary schedule established by the Council.

(b) To establish rules and regulations governing all activities of the Commission.

(c) To expend funds appropriated by the Council for the Spokane Tribal Rights Program.

(d) To obtain funding from Federal, State or other sources to supplement Council appropriations.

(e) To establish numerical hiring goals and timetables, specifying the minimum number of Indians an employer must hire by craft or skill level.

(f) To require employers to establish or participate in job training programs as the Commission deems necessary to increase the pool of Indians eligible for employment on the Reservation.

(g) To establish and administer a tribal hiring hall and require employers to use it.

(h) To prohibit employers from using job qualifications criteria or personnel requirements that may bar Indians from employment unless such criteria or requirements are required by business necessity. Commission regulations may adopt EEOC guidelines or may adopt additional requirements to eliminate employment barriers unique to Indians and the Reservation.

(i) To enter into agreements with the unions to insure union compliance with this Ordinance.

(j) To require employers to give preference to Tribal and other Indian-owned businesses in the award of contracts and subcontracts.

(k) To establish counseling programs to assist Indians in obtaining and retaining employment.

(l) To hold hearings and to subpoena witnesses and documents in accordance with this Ordinance.

(m) To require employers to submit reports and take all actions deemed necessary by the Commission for the fair and vigorous implementation of this Ordinance.

(n) To enter into cooperative agreements with Federal employment rights agencies such as EEOC and OFCCP to eliminate discrimination against Indians both on and off the Reservation.

(o) To take such other actions as are necessary to achieve the purposes and objectives of the Spokane Employment Rights Program established in this Ordinance.

In exercising the above specified powers, the Commission shall have the discretion to implement certain powers only or to apply one or more such powers to limited classes or numbers of employers.

Section 4. Spokane Employment Rights Program.

4.1 Coverage. All employers are required to give preference to Indians in hiring, promotion, training, and all other aspects of employment, contracting or subcontracting, and must comply with this Ordinance and the rules, regulations and orders of the Commission.

The above requirements shall apply to facilities of an employer including a subcontractor located or engaged in work on the Reservation.

4.2 Contractors and Subcontractors. The Indian preference requirements contained in this Ordinance shall be binding on all contractors and subcontractors of employers, regardless of tier, and shall be deemed a part of all contract and subcontract specifications. The employer shall be subject to penalties provided herein for violation of this Ordinance if the contractor or subcontractor fails to comply.

4.3 Minimum Numerical Goals and Timetables for Indian Employment. The Commission may establish the minimum number of Indians each employer must employ on his work force during any year that he or any of his employees are located or engaged in work on the

Reservation. Numerical goals may be set for each craft, skill, job classification, etc., used by the employer and shall include, but not be limited to, administrative, supervisory and professional categories. The goals shall be expressed in terms of man-hours of Indian employment as a percentage of the total man-hours worked by the employer's work force in the job classification involved.

For both new and existing employers, the goals shall be reviewed by the Commission at least annually and shall be revised as necessary to reflect changes in the number of Indians available or changes in employer hiring plans. Each employer shall submit a monthly report to the Commission on a form provided by the Commission, indicating the number of Indians in his work force, how close he is to meeting his goals, all persons hired or fired during the month, the job positions involved, and other information required by the Commission.

4.4 Training. Employers may be required by the Commission to participate in training programs to assist Indians to become qualified in the various job classifications used by the employer. The ratio of Indian trainees to fully qualified workers shall be set by the Commission after consultation with the employer.

4.5 Job Qualifications and Personnel Requirements. Employers are prohibited from using job qualification criteria or personnel requirements which bar Indians from employment unless such criteria or requirements are required by business necessity.

4.6 Tribal Hiring Hall. The Commission shall establish and administer a tribal hiring hall to assist the Commission and employers in placing Indians in job positions. An employer may recruit and hire workers from whatever sources are available to him and by whatever process he chooses, as long as he complies with this Ordinance and Indian job preference regulations and agreements pertaining to his operation.

4.7 Counseling and Support Programs. The Commission will establish counseling and other support programs to assist Indians to

obtain and retain employment. Every employer shall be required to cooperate with the Commission regarding such counseling and support programs.

4.8 Preference in Contracting and Subcontracting. Employers shall give preference in the award of contracts or subcontracts to tribally owned and Indian-owned businesses. The Commission shall maintain a list of tribally owned and Indian-owned businesses which shall be supplied to the employers for their use.

4.9 Lay-offs. In all lay-offs and reductions in force, employers shall maintain required ratios of Indian employees.

4.10 Promotion. Every employer shall in accordance with required ratios give Indians preferential consideration for all promotion opportunities and shall encourage Indians to seek such opportunities.

4.11 Summer Students. Employers shall give Indian students preferential consideration for summer student employment. The employer shall make every effort to promote after-school, summer and vacation employment for Indian students.

4.12 Burden of Proof. In any hearing before the Commission where the issue is compliance by an employer of any of the requirements and provisions of the foregoing subsections of Section 4, the burden of proof shall be on the employer rather than on the employee or other complainant to show said compliance.

Note (Resolution 1979-283)

Section 5. Compliance by Unions.

Every union with a collective bargaining agreement with an employer must file a written agreement stating that the union will comply with this Ordinance and the rules, regulations and orders of the Commission. Until such agreement is filed with the Commission, the employer may not commence work on the Reservation.

5.1 Contents of Union Agreements. Every union agreement with an employer or filed with the Commission must provide:

(a) Indian Preference. The union will give preference

Indians in job referrals regardless of which union referral list they are on.

(b) Cooperation with the Commission. The union will cooperate with the Commission in all respects and assist in the compliance with, and enforcement of this Ordinance and related regulations and agreements.

(c) Registration. The union will establish a mechanism allowing Indians to register for job referral lists by telephone or mail.

(d) Training Programs. The union will establish a journeyman upgrade and advanced apprenticeship program.

(e) Temporary Work Permits. The union will grant temporary work permits to Indians who do not wish to join the union.

5.2 Model Union Agreement. The Commission will provide a model union agreement for use by all unions who have collective bargaining agreements with any employer.

5.3 Recognition of Unions. Nothing herein or any activity by the Commission authorized hereby shall constitute official tribal recognition of any union or tribal endorsement of any union activities on the Reservation.

5.4 Burden of Proof. In any hearing before the Commission where the issue is compliance by an employer of any of the requirements and provisions of the foregoing subsections of Section 5, the burden of proof shall be on the employer rather than on the employee or other complainant to show said compliance.

Section 6. Hearings.

6.1 Notice. If a hearing is requested by the Commission, an individual, an employer, or union pursuant to this section, a written notice of hearing shall be given to all concerned parties stating the nature of the hearing and the evidence to be presented. The notice shall advise such parties of their right to be present at the hearing, to present testimony of witnesses and other

evidence, and to be represented by counsel at their own expense.

6.2 Commission Complaint Procedure. If the Commission has cause to believe that an employer, contractor, subcontractor, or union has failed to comply with this Ordinance or any rules, regulations or orders of the Commission, it may file a complaint and notify such party of the alleged violations. The Commission will attempt to achieve an informal settlement of the matter, but if an informal settlement cannot be achieved, the Commission may request a hearing upon the matter pursuant to Section 6.1.

6.3 Individual Complaint Procedure. If any Indian believes that an employer has failed to comply with this Ordinance or rules, regulations or orders of the Commission, or believes he has been discriminated against by an employer because he is an Indian, he may file a complaint with the Commission specifying the alleged violation. Upon receipt of the complaint, the Commission shall investigate and attempt to achieve an informal settlement of the matter. If an informal settlement cannot be achieved, the individual or Commission may request a hearing upon the matter pursuant to Section 6.1.

If any employer fires, lays off, or penalizes in any manner, any Indian employee for utilizing the individual complaint procedure, or any other right provided herein, the employer shall be subject to the penalties provided in Section 7 of this Ordinance.

6.4 Employer or Union Complaint Procedure. If an employer or union believes that any provision of this Ordinance or any rule, regulation or order of the Commission is illegal or erroneous, it may file a complaint with the Commission specifying the alleged illegality or error. Upon receipt of the complaint, the Commission shall investigate and attempt to achieve an informal settlement of the matter. If an informal settlement cannot be achieved, the employer, union or Commission may request a hearing upon the matter pursuant to Section 6.1.

6.5 Hearing Procedure. Hearings shall be governed by the following rules of procedure:

(a) All parties may present testimony of witnesses and other evidence and may be represented by counsel at their expense.

(b) The Commission may have the advice and assistance at the hearing of counsel provided by the Tribe.

(c) The Chairman of the Commission or the Vice-Chairman shall preside and the Commission shall proceed to ascertain the facts in a reasonable and orderly fashion.

(d) The hearing may be adjourned, postponed and continued at the discretion of the Commission.

(e) At the final close of the hearings, the Commission may take immediate action or take the matter under advisement.

(f) The Commission shall notify all parties 30 days after the last hearing of its decision in the matter.

Section 7. Penalties for Violation.

Any employer, contractor, subcontractor or union who violates this Ordinance or rules, regulations or orders of the Commission shall be subject to penalties for such violations, including, but not limited to:

(a) Denial of right to commence or continue business inside the Reservation.

(b) Suspension of operations inside the Reservation.

(c) Payment of back pay and damages to compensate any injured party.

(d) An order to summarily remove employees hired in violation of this Ordinance or rules, regulations and orders of the Commission.

(e) Imposition of monetary civil penalties.

(f) Prohibition from engaging in future operations on the Reservation.

(g) An order requiring employment, promotion and training of Indians injured by the violation.

(h) An order requiring changes in procedures and policies necessary to eliminate the violations.

(i) An order making any other provision deemed by the Commission necessary to alleviate, eliminate or compensate for any violation.

The maximum penalty which may be imposed is \$500.00 for each violation. Each day during which a violation exists shall constitute a separate violation.

Section 8. Appeals.

Any party to a hearing shall have the right to appeal any decision of the Commission to the Court of Appeals of the Spokane Tribal Court pursuant to the Law and Order Code of the Spokane Indian Tribe.

Section 9. Publication of Ordinance. The Commission shall notify all employers of this Ordinance and their obligations to comply. All bid announcements issued by any Tribal, Federal, State or other private or public entity shall contain a statement that the successful bidder will be obligated to comply with this Ordinance and all rules, regulations and orders of the Commission.

All tribal agencies responsible for issuing business permits for Reservation activities or otherwise engaged in activities involving contact with prospective employers on the Reservation shall be responsible for advising such prospective employers of their obligations under this Ordinance and rules, regulations and orders of the Commission.

The Commission shall send a copy of this Ordinance to every employer operating on the Reservation.

Section 10. Compliance Plan.

As of the effective date of this Ordinance, no new employer may commence work on the Reservation until it has consulted with the Commission for meeting its obligations under this Ordinance.

Section 11. Reporting and On-Site Inspection.

Employers shall submit reports, and other information requested by the Commission. The Commission and its representative shall have the right to make on-site inspections during regular working hours in order to monitor any employer's compliance with this Ordinance and rules, regulations and orders of the Commission. The Commission shall have the right to inspect and copy all relevant records of any employer, of any signatory union or subcontractor and shall have a right to speak to workers and conduct investigations on job sites.

Section 12. Severability.

If any provision of this Ordinance, or its application to any person or circumstances is held invalid, the remainder of the Ordinance, or the application of the provision to other persons or circumstances is not affected.

Section 13. Rules and Regulations.

The purpose of this Ordinance is to establish the Commission and general requirements, policies and guidelines to govern it and its work. When the Commission is appointed and organized it shall with all reasonable speed adopt, with the final approval of the Council, more detailed rules, regulations, policies and guidelines to fully implement this Ordinance and the purposes and responsibilities of the Commission.

Section 14. Commission Funds.

All funds from employer fees and other sources, collected by the Commission, although under the management control of the Commission, shall be Tribal funds subject to the final control and disposition by the Council.

Section 15. Effective Date.

This Ordinance shall be effective from the date of its approval by the Secretary.

SPOKANE BUSINESS COUNCIL

By W. L. E. McCoy
Chairman

DAWN MINING COMPANY

FORD, WASHINGTON

CONTRACT NO. C1

EXCAVATION AND LINING

TAILINGS DISPOSAL PROJECT

TENDER FORM

Tender By _____
Of _____
And _____
Of _____

Comprising the Partnership of _____
Or

A Company Duly Incorporated Under the Laws Of _____

And Having its Head Office at _____

TO: Dawn Mining Company,
P. O. Box 25,
FORD, Washington 99013

We, having carefully read all Contract Documents for the proposed work including the Information for Tenders, Form of Tender, Form of Agreement, General Conditions, Supplementary General Conditions (if any), Specifications, Drawings, Appendixes, Addendum No. _____ to _____ inclusive and having carefully examined the site on _____, 1980 and the Conditions under which the work is to be performed, hereby tender and offer to enter into a contract to construct the said works in accordance with the Contract Documents.

T.F. P.1

The work will be done on a unit price basis for the excavation and filling with lump sum items as outlined below.

The unit prices shall be determined by cross-sectioning the tailings disposal site and calculating the amount of material removed from the excavated area.

1. For the excavation, filling and compacted filling of the coarse gravel and sands \$ _____/cubic yard
2. For the excavation, and stockpiling of the basalt material (rock) \$ _____/cubic yard
3. Lump sum for relocating fence \$ _____
4. Lump sum for installation of the Hypalon liner \$ _____
5. Material cost for the subdrain system \$ _____
6. Cost for installation of the subdrain system \$ _____
7. Placing of sand bedding, liner cover, subdrain filter, and riprap material \$ _____
8. Lump sum for 100% performance bond \$ _____

Alternate

In lieu of providing 100% performance bond and providing 50% performance bond, reduce 8. above by

\$ _____

Work which is deemed extra to the Contract will be accepted in writing by the Owner's representative.

The actual and necessary net cost of the direct wages as reported on Statement "C" will apply for such extra field work, or alternately the unit prices for additions and deletions if subsequently agreed on, may be used, if applicable, as per Article GC27 "Valuation of Changes".

The rental rates of equipment listed on Statement "D" shall apply for equipment used on the field work which is extra to the Contract.

The overhead and profit for materials and supplies required for work extra to the Contract shall be _____ percent (%). Freight at cost.

We have completed the attached Statements which form part of this Tender. (Provide additional pages to the attached Statements, in the same format, if required.)

We declare that this Tender is made without any connection, comparison of figures or arrangements with, or knowledge of another corporation, firm or persons making a Tender for the same work and is in all respects fair and without collusion or fraud.

We agree that this Tender is subject to a formal Contract being prepared and executed.

We agree that this Tender will continue to remain open to acceptance and the price herein tendered shall remain firm and unchanged, for a period of sixty (60) days after date of tenders, and the Owner may at any time within the time set forth above, without notice, accept this Tender whether any other Tender has been previously accepted or not.

We propose to work _____ hours per man per week to meet the schedule.

We agree within ten days of notification of the acceptance of our Tender to provide the Performance Bond and to execute the Agreement.

We propose _____

_____, a company lawfully doing business in the State of Washington as surety to furnish the Performance Bond in accordance with Article 9 of the Information to Tenderers if this Tender is accepted.

We agree to commence work within three days after notification, and to complete the work within a Contract Time of _____ weeks of the written order to commence work.

We will prepare and submit a general construction schedule in accordance with Section 1A-07 "Schedules and Completion" showing the proposed progress on the work to meet the Contract Time stipulated above.

A Tender deposit in the form of a Tender Bond and Agreement to Bond is attached.

Dated at _____ this _____ day of _____,
19____.

Witnessed:

Signature of Tenderers:

Address: _____

Telephone: _____

NOTE:

If the Tender is submitted by or on behalf of a Corporation, it must be signed in the name of such Corporation by the duly authorized officers and the seal of the Corporation must be affixed. If the Tender is submitted by or on behalf of an individual or a partnership, a seal must be affixed opposite the signature of the individual or partner.

STATEMENT A
EXPERIENCE AND KEY PERSONNEL

1. PREVIOUS PROJECTS

<u>Description</u>	<u>Client</u>	<u>Value</u>
--------------------	---------------	--------------

2. PERSONNEL

<u>Name/Position</u>	Experience (Education, Professional Status, type of work)
----------------------	--

STATEMENT B

SUB-CONTRACTORS

1. SUB-CONTRACTOR LIST

NAME _____

Please provide your proposed list of sub contractors.

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are approximately 20 lines visible. The paper appears to be from a notebook or a standard sheet of stationery. There is no handwriting or other markings on the page.

STATEMENT C

SCHEDULE OF WAGE RATES

This schedule shall cover all classes of trade which the Tenderer proposed to use on the work.

The rates shall include the actual and necessary net cost of the direct wages per trade, percentage for payroll burden as described in GC27 "Valuation of changes".

The rates specified shall apply until December 31, 1980 or to end of present Union Agreement.

<u>Item</u>	<u>Trade or Classification</u>	Basic Wage Rate per Hour <u> hr/week</u>	Premium Wage Rate/Hour Exceeding <u> </u> hrs/day or <u> hr/week</u>
-------------	------------------------------------	---	---

STATEMENT D

(Schedule) in detail the equipment to be provided for the work and units tendered and the rental rates applicable if employed on additional work at a cost plus fee basis of payment.)

<u>Unit</u>	<u>Size Model Capacity Attachments</u>	<u>Hourly</u>	<u>Rental Rate</u>		
			<u>Daily</u>	<u>Weekly</u>	<u>Monthly</u>

STATEMENT E

Working members of the following Trade Union Organizations will be involved in this Contract:

<u>Organization</u>	<u>Local</u>	<u>Expiry Date of Current Agreement with Contractor or Sub-Contractor</u>
---------------------	--------------	---

(j) The term "religion" includes all aspects of religious observance and practice, as well as belief, unless an employer demonstrates that he is unable to reasonably accommodate to an employee's or prospective employee's religious observance or practice without undue hardship on the conduct of the employer's business.

[1972 Amendment: Section 701 added to Section 701 by P.L. 92-318, effective March 24, 1972, creating statutory basis for EEOC to form guidelines on religious discrimination.]

(k) The terms "because of sex" or "on the basis of sex" include, but are not limited to, because of or on the basis of pregnancy, childbirth or related medical conditions and women affected by pregnancy, childbirth, or related medical conditions shall be treated the same for all employment-related purposes, including receipt of benefits under fringe benefit programs, as other persons not so affected but similar in their ability or inability to work, and nothing in Section 703(h) of this title shall be interpreted to permit otherwise. This subsection shall not require an employer to pay for health insurance benefits for abortion, except where the life of the mother would be endangered if the fetus were carried to term, or except where medical complications have arisen from an abortion. Provided, That nothing herein shall preclude an employer from providing abortion benefits or otherwise effect bargaining agreements in regard to abortion.

[1972 Amendment: Section 701 added to Section 701 by P.L. 92-318, effective March 24, 1972, except that employers will have until April 30, 1973, to make necessary adjustments in existing fringe benefit or insurance programs. Also, employers that was used October 31, 1973, or until the expiration of an applicable collective bargaining contract before they may receive benefits under a current plan in order to comply with the amendment. EEOC issued interpretive guidance and answers by P.L. 92-318 as amended in its Civil Rights Division Circular 150 (CPL 150) on April 11, 1973, March 2, 1973, effective March 2, 1973.]

EXEMPTION

Sec. 702. This title shall not apply to an employer with respect to the employment of aliens outside any State, or to a religious corporation, association, educational institution, or society with respect to the employment of individuals of a

particular religion to perform work connected with the carrying on by such corporation, association, educational institution, or society of its activities.

[1972 Amendment: Section 702 was amended by P.L. 92-318, effective March 24, 1972, and previously read "Sec. 702. This title shall not apply to an employer with respect to the employment of aliens outside any State, or to a religious corporation, association, or society with respect to the employment of individuals of a particular religion to perform work connected with the carrying on by such corporation, association, or society of its religious activities or to an educational institution with respect to the employment of individuals to perform work connected with the educational activities of such institution."]

DISCRIMINATION BECAUSE OF RACE, COLOR, RELIGION, SEX, OR NATIONAL ORIGIN

Sec. 703 (a) It shall be an unlawful employment practice for an employer—

(1) to fail or refuse to hire or to discharge any individual, or otherwise to discriminate against any individual with respect to his compensation, terms, conditions, or privileges of employment, because of such individual's race, color, religion, sex, or national origin; or

(2) limit, segregate, or classify his employees or applicants for employment in any way which would deprive or tend to deprive any individual of employment opportunities or otherwise adversely affect his status as an employee, because of such individual's race, color, religion, sex, or national origin.

[1972 Amendment: Sec. 703(a) was amended by P.L. 92-318, effective March 24, 1972, and added the words "applicants for employment".]

(b) It shall be an unlawful employment practice for an employment agency to fail or refuse to refer for employment, or otherwise to discriminate against, any individual because of his race, color, religion, sex, or national origin, or to classify or refer for employment any individual on the basis of his race, color, religion, sex, or national origin.

(c) It shall be an unlawful employment practice for a labor organization—

(1) to exclude or to expel from its membership, or otherwise to discriminate against, any individual because of his race, color, religion, sex, or national origin;

(2) to limit, segregate, or classify its membership or applicants for membership or to classify or fail or refuse to refer for employment any individual, in any way which would deprive or tend to deprive any individual of employment opportunities, or would limit such employment opportunities or otherwise adversely affect his status as an employee or as an applicant for employment, because of such individual's race, color, religion, sex, or national origin;

[1972 Amendments: See Title 12, amended by P.L. 92-261, effective March 1972, which added the words "applicants for membership".]

(3) to cause or attempt to cause an employer to discriminate against an individual in violation of this section.

(d) It shall be an unlawful employment practice for any employer, labor organization, or joint labor-management committee controlling apprenticeship or other training or retraining, including on-the-job training programs to discriminate against any individual because of his race, color, religion, sex, or national origin in admission to, or employment in, any program established to provide apprenticeship or other training.

(e) Notwithstanding any other provision of this title, (1) it shall not be an unlawful employment practice for an employer to hire and employ employees, for an employment agency to classify, or refer for employment any individual, for a labor organization to classify its membership or to classify or refer for employment any individual, or for an employer, labor organization, or joint labor-management committee controlling apprenticeship or other training or retraining programs to admit or employ any individual in any such program, on the basis of his religion, sex, or national origin in those certain instances where religion, sex, or national origin is a bona fide occupational qualification reasonably necessary to the normal operation of that particular business or enterprise, and (2) it shall not be an unlawful employment practice for a school, college, university, or other educational institution or institution of learning to hire and employ employees of a particular religion if such school, college, university, or other educational institution or institution of learning is, in whole or in substantial part, owned, supported, controlled, or managed by a particular religion or by a particular religious corporation, association, or society, or if the curriculum of such school, college, university, or other educational institution or institution of learning is directed toward the propagation of a particular religion.

(f) As used in this title, the phrase "unlawful employment practice" shall not be deemed to include any action or measure taken by an employer, labor organization, joint labor-management committee, or employment agency with respect to an individual who is a member of the Communist Party of the United States or of any other organization required to register as a Communist-action or Communist-front organization by final order of the Subversive Activities Control Board pursuant to the Subversive Activities Control Act of 1950.

(g) Notwithstanding any other provision of this title, it shall not be an unlawful employment practice for an employer to fail or refuse to hire and employ any individual for any position, for an employer to discharge an individual from any position, or for an employment agency to fail or refuse to refer any individual for employment in any position, or for a labor organization to fail or refuse to refer any individual for employment in any position, if—

(1) the occupancy of such position, or access to the premises in or upon which any part of the duties of such position is performed or is to be performed, is subject to any requirement imposed in the interest of the national security of the United States under any security program in effect pursuant to or administered under any statute of the United States or any Executive order of the President; and

(2) such individual has not fulfilled or has ceased to fulfill that requirement.

(h) Notwithstanding any other provision of this title, it shall not be an unlawful employment practice for an employer to apply different standards of compensation, or different terms, conditions, or privileges of employment pursuant to a bona fide seniority or merit system, or a system which measures earnings by quantity or quality of

production or to employees who work in different locations, provided that such differences are not the result of an intention to discriminate because of race, color, religion, sex, or national origin; nor shall it be an unlawful employment practice for an employer to give and to act upon the results of any professionally developed ability test provided that such test, its administration or action upon the results is not designed, intended, or used to discriminate because of race, color, religion, sex, or national origin. It shall not be an unlawful employment practice under this title for any employer to differentiate upon the basis of sex in determining the amount of the wages or compensation paid or to be paid to employees of such employer if such differentiation is authorized by the provisions of Section 8(d) of the Fair Labor Standards Act of 1938 as amended (29 U.S.C. 206(d)).

(1) Nothing contained in this title shall apply to any business or enterprise on or near an Indian reservation with respect to any publicly announced employment practice of such business or enterprise under which a preferential treatment is given to any individual because he is an Indian living on or near a reservation.

(2) Nothing contained in this title shall be interpreted to require any employer, employment agency, labor organization, or joint labor-management committee subject to this title to grant preferential treatment to any individual or to any group because of the race, color, religion, sex, or national origin of such individual or group on account of an imbalance which may exist with respect to the total number of percentage of persons of any race, color, religion, sex, or national origin employed by any employer, referred or classified for employment by any employment agency or labor organization, admitted to membership or classified by any labor organization, or admitted to, or employed in, any apprenticeship or other training program, in comparison

with the total number or percentage of persons of such race, color, religion, sex, or national origin in any community, State, section, or other area, or in the available work force in any community, State, section, or other area.

OTHER UNLAWFUL EMPLOYMENT PRACTICES

Sec. 704. (a) It shall be an unlawful employment practice for an employer to discriminate against any of his employees or applicants for employment, for an employment agency, or joint labor-management committee controlling apprenticeship or other training or retraining, including on-the-job training programs, to discriminate against any individual, or for a labor organization to discriminate against any member thereof or applicant for membership, because he has opposed any practice made an unlawful employment practice by this title, or because he has made a charge, testified, assisted, or participated in any manner in an investigation, proceeding, or hearing under this title.

(1977 Amendment: Section 704(a) was amended to P.L. 95-291, effective March 24, 1977, reflecting earlier amendments to the title, and added the following language: "...or joint labor-management committee controlling apprenticeship or other training or retraining or on-the-job training programs".)

(b) It shall be an unlawful employment practice for an employer, labor organization, employment agency, or joint labor-management committee controlling apprenticeship or other training or retraining, including on-the-job training programs, to print or cause to be printed or published any notice or advertisement relating to employment by such an employer or membership in or any classification or referral for employment by such a labor organization, or relating to any classification or referral for employment by such an employment agency, or relating to admission to, or employment in, any program established to provide apprenticeship or other training by such a joint labor-management committee and