STATE OF ALASKA

**SARAH PALIN, GOVERNOR**

**DEPARTMENT OF ENVIRONMENTAL CONSERVATION**
**DIVISION OF WATER**
**WASTEWATER DISCHARGE PROGRAM**

555 Cordova Street
Anchorage, Alaska 99501
Phone: (907) 269-8198
Fax: (907) 269-3487
www.dec.state.ak.us

July 3, 2007
File #104.62.001

Mr. Delbert Parr
Environmental Manager
Fairbanks Gold Mining Inc.
P.O. Box 73726
Fairbanks AK 99707-3726

**Certified Mail # 7003 2260 0004 1149 8953**
**Return Receipt Requested**

**Subject: Waste Management Permit 2006-DB0043, Fort Knox Mine**

Dear Mr. Parr:

Alaska Department of Environmental Conservation has completed its evaluation of your Waste Management Permit renewal application for the disposal of wastes from the Fort Knox Mine, as detailed in your application materials and in the attached permit. The attached permit covers disposal of waste to the Tailings Storage Facility (TSF), inert solid waste landfill facilities, the Walter Creek Valley Heap Leach Facility, the mine pit, and groundwater and surface water monitoring systems at the Fort Knox Mine. In addition to the disposal of wastes listed above, this permit covers hazardous chemical storage and containment, and reclamation and closure activities related to the facilities.

The attached permit is issued under the provisions of Alaska Statute 46.03, and the Alaska Administrative Code, 18 AAC 15, 18 AAC 60, 18 AAC 70, and 18 AAC 72 and other applicable state laws and regulations. The attached permit incorporates Fort Knox Project's June 2006 Waste Management Permit Renewal Application, June 2006 Walter Creek Valley Heap Leach Facility Project Description, June 2006 Fort Knox Mine Reclamation and Closure Plan, June 2006 TSF and Heap Leach Closure Management Plans, June 2006 Fort Knox Monitoring Plan, January 2006 Solid Waste Management Plan, and January 2007 Revised Fort Knox Pit Lake Evaluation. Please review the conditions and stipulations in this permit and ensure that they are all understood. This permit is effective July 3, 2007, and expires July 2, 2012.

Any person who disagrees with this decision may request an adjudicatory hearing in accordance with 18 AAC 15.195 - 18 AAC 15.340 or an informal review by the Division Director in accordance with 18 AAC 15.185. An informal review request must be delivered to the Director, Division of Water, 555 Cordova Street, Anchorage, AK 99501, within 15 days of receipt of the permit decision. An adjudicatory hearing request must be delivered to the Commissioner of the Department of Environmental Conservation, 555 Cordova Street, Anchorage, Alaska 99501, within

30 days of the permit decision. If a hearing is not requested within 30 days, the right to appeal is waived.

Sincerely,

Sharmon Stambaugh
Wastewater Discharge Program Manager

Enclosure: Waste Management Permit 2006-DB0043, Fort Knox Mine

cc: Tim Pilon, ADEC, Fairbanks
Cam Leonard, DOL, Fairbanks
Mike Franger, ADNR/MHLTO, Anchorage
Jim Vohden, ADNR/DMLW, Fairbanks
Tom Crafford, ADNR/OPMP, Anchorage
Rick Fredericksen, ADNR/DMLW, Anchorage
Al Ott, ADNR/OHMP, Fairbanks
Steve McGroarty, ADNR/DMLW, Fairbanks
Bob Tsigonis, ADNR/OPMP, Fairbanks
Sharon Seim, ACOE, Fairbanks

**STATE OF ALASKA**
**DEPARTMENT OF ENVIRONMENTAL CONSERVATION**
**610 UNIVERSITY AVE.**
**FAIRBANKS, AK 99709-3643**

# WASTE MANAGEMENT PERMIT

## For
## Fort Knox Mine

---

**Permit No. 2006-DB0043** **Date: July 3, 2007**

---

This Waste Management Permit is issued to Fairbanks Gold Mining Inc., PO Box 73726, Fairbanks, AK 99707-3726 for the disposal of wastes from the Fort Knox Mine as defined in permit Section 1.1. The Fort Knox Mine facilities are located 26 miles northeast of Fairbanks, AK within Sections 9, 10, 14, 15, 16, 21, 22, 23, T.2 N, R.2 E. Fairbanks Meridian. This permit is issued under the provisions of Alaska Statutes 46.03, and the Alaska Administrative Code, 18 AAC 15, 18 AAC 60, 18 AAC 70 and 18 AAC 72, as amended or revised, and other applicable state laws and regulations. This permit is effective July 3, 2007, and expires July 2, 2012. This permit may be terminated or modified in accordance with AS 46.03.120. This permit supersedes Solid Waste Permit Nos. 9931-BA001 and 0031-BA008.

This permit is subject to the conditions and stipulations contained in Sections 1 - 5. This permit incorporates by reference Fort Knox Project's June 2006 Waste Management Permit Renewal Application, June 2006 Walter Creek Valley Heap Leach Facility Project Description, June 2006 Fort Knox Mine Reclamation and Closure Plan, June 2006 TSF and Heap Leach Closure Management Plans, January 2006 Solid Waste Management Plan, June 2006 Fort Knox Monitoring Plan, and January 2007 Revised Fort Knox Pit Lake Evaluation. Changes to the documents incorporated herein must be approved by the department if they affect this permit. If the department approves the changes, they become part of this permit.

The department requires the permittee to conduct post-closure maintenance and monitoring for a minimum of 30 years after closure. The permittee shall assess the conditions at the facility and respond accordingly throughout the post-closure care period. At the end of the post-closure period, the department will determine whether post-closure care and monitoring should be extended beyond 30 years, based upon the information collected by that time.

Sharmon Stambaugh
Wastewater Discharge Program Manager

# TABLE OF CONTENTS

# 1 SPECIFIC PERMIT CONDITIONS

## 1.1 INTRODUCTION

1.1.1 This permit covers disposal of waste to the inert solid waste landfill facilities, the Walter Creek Valley Heap Leach Facility, Tailings Storage Facility (TSF), and as relevant to the permitted discharge, the TSF including the mill operation, mill tailings discharge, tailings, tailings impoundment structure, seepage control system, interceptor wells, groundwater observation wells below the TSF, and surface water monitoring of the developed wetlands and at the water supply reservoir. This permit also covers monitoring requirements for the mine pit and development rock (overburden and waste rock) for characterization of acid rock drainage, monitoring of the heap leach facility solution, hazardous chemical storage, and containment. Additionally, this permit covers reclamation and closure activities of the TSF and heap leach facility, including disposal of wastewater to the pit at closure after department approval to commence discharge.

1.1.2 This permit covers disposal of 50,000 tons per day, as a monthly average, of tailings deposited in the TSF. Ore mined from the Fort Knox Pit is crushed, followed by gravity separation, cyanide leaching with a carbon in-pulp circuit, and gold doré is produced on site. When required to meet the conditions of this permit, tailings are run through a cyanide destruct process prior to discharge to the TSF.

This permit also covers disposal of 165 million tons of run of mine material, mined from the Fort Knox pit, to the Walter Creek Valley Heap Leach Facility. Drip or sprinkler emitters will apply a cyanide containing solution to the material placed on the heap. The solution will be collected and processed in carbon in-pulp columns in the mill facility for gold recovery.

This permit also covers the disposal of inert solid waste as described in the Fort Knox Mine Solid Waste Management Plan as approved by the department.

1.1.3 In addition to the stipulations in this permit, the permittee shall adhere to the requirements of 18 AAC 60 Solid Waste Management Regulations as applicable, 18 AAC 70 Alaska Water Quality Standards, and 18 AAC 72.500 – 72.600 Non-Domestic Wastewater. The permittee shall also adhere to the requirements of Fort Knox Project's June 2006 Waste Management Permit Renewal Application, June 2006 Walter Creek Valley Heap Leach Facility Project Description, June 2006 Fort Knox Mine Reclamation and Closure Plan, June 2006 TSF and Heap Leach Closure Management Plans, January 2006 Solid Waste Management Plan, June 2006 Fort Knox Monitoring Plan, and January 2007 Revised Fort Knox Pit Lake Evaluation approved by the department. When the terms of this permit differ from the terms of the project documents (listed above), the terms of this permit override the terms contained in the project documents. The project documents must also be updated incorporating any changes necessary to be consistent with the terms of

this permit.

1.1.4 During the period beginning on the effective date of this permit and lasting through the expiration date, the permittee is authorized to dispose of wastes as specified in this permit into the TSF, Walter Creek Valley Heap Leach Facility, and the inert solid waste landfill facilities at the Fort Knox Mine. Discharge of wastewater to the mine pit at closure is not allowed unless specific approval from the department has been granted. Prior to commencement of discharge of wastewater to the pit at closure the permittee shall apply to the department for approval to commence discharge as required in Section 1.2.10 of this permit.

## 1.2 LIMITATIONS

1.2.1 The waste materials covered under this section are limited to up to 50,000 tons per day as a monthly average of processed and neutralized ore, meeting the conditions in this permit, deposited in the TSF. This permit also covers disposal of up to 165 million tons of run of mine material, mined from the Fort Knox pit, to the Walter Creek Valley Heap Leach facility.

1.2.2 Ore from satellite pits may be processed at Fort Knox provided that the following procedures are followed and the department determines that there will be insignificant impact on mine closure, reclamation, and water quality.

1.2.2.1 Compare the chemistry of new ore to the chemistry of Ft. Knox ore and add any additional constituents found in the new ore to Analytical Profile II in the Fort Knox Mine Monitoring Plan. Where required under this permit, use this revised Profile II for all monitoring.

1.2.2.2 Determine the ore ratios (tons of ore being processed from Ft. Knox ore to tons of Satellite Pit ore) and perform Meteoric Water Mobility Procedure on mixed ore samples prior to beneficiation. Analyze rinse water and leachate using Profile II.

1.2.2.3 Perform acid base accounting on mixed ore (ratios) prior to beneficiation. If net neutralization potential (NP) to acid generating potential (AP) is less than 3:1, a humidity cell (kinetic) test of adequate duration will be required. Leachate analysis will use Profile II.

1.2.2.4 Perform acid base accounting on mixed ore (ratios) after beneficiation. If NP to AP ratio is less than 3:1, a humidity cell (kinetic) test of adequate duration will be required. Leachate analysis will use Profile II.

1.2.2.5 Characterize the processed tailing solids (post cyanide detoxification) using Profile II. Compare to the original Fort Knox solids.

1.2.2.6 Characterize the processed tailing liquor (post cyanide detoxification) using Profile II. Compare to the original Fort Knox liquor.

1.2.2.7 Perform Meteoric Water Mobility Procedure on processed tailing solids (after cyanide detoxification) using Profile II. Compare to original Fort Knox data.

1.2.2.8 Define all changes to the beneficiation or treatment processes which may

affect monitoring, closure, tailings, water quality, or any other permit condition.

1.2.2.9 Submit each of the above to the department for review and approval before processing ore from each new satellite pit.

1.2.3 The following materials shall not be disposed into the inert solid waste landfill facilities, the TSF, or the Walter Creek Valley Heap Leach Facility, unless otherwise provided or approved in writing by the department:

1.2.3.1 Treated or untreated process water in quantities or concentrations that would exceed cyanide and pH limitations in Sections 1.2.4 and 1.2.5 of this permit,

1.2.3.2 Chemical containers (unless triple-rinsed) and discarded, unused chemicals,

1.2.3.3 Discarded, unused chemicals not associated with the beneficiation process, however, discarded, unused chemicals that are associated with the beneficiation process may be discarded into the tailing impoundment as long as they are in concentrations that would not violate the limits of Sections 1.2.4 and 1.2.5,

1.2.3.4 Contaminated soils, spill boom, liners used for the containment of spilled materials, chemicals used in the cleanup of spills or other spill clean up wastes other than chemicals used in the beneficiation process,

1.2.3.5 Uncombusted household waste,

1.2.3.6 Laboratory wastes other than wash waters, neutralized acids and neutralized bases, however disposal or recycling of refinery slag, fire assay crucibles and cupels through the grinding and leaching circuit is permitted,

1.2.3.7 Untreated sewage solids,

1.2.3.8 Asbestos waste,

1.2.3.9 Hazardous wastes, as defined by 40 C.F.R. Part 261, including radioactive material, explosives, strong acids and untreated pathogenic waste, however this prohibition does not preclude disposal of natural minerals found in mine rock or residual wastes included as byproducts of the beneficiation process due to recycling of refinery slag, fire assay crucibles and cupels,

1.2.3.10 Fuels, oil, transformers, paint, or associated equipment and packing material,

1.2.3.11 Glycol and solvents, and

1.2.3.12 Batteries.

1.2.4 Prior to entering the impoundment, the tailing waste slurry shall be neutralized to contain a monthly average of 10 milligrams per liter (mg/L) or less of cyanide measured by the weak acid dissociable (WAD) method. The maximum concentration of WAD cyanide in the slurry discharge shall be 25 mg/L. These discharge limits may be changed in accordance with Section 1.7.2.

1.2.5 The pH of the slurry entering the tailing impoundment shall be between 6.0 and 11.0 pH units. The pH of the tailings decant from the tailings impoundment, after mixing of the slurry discharge, shall be between 6.0 and 11.0 pH units from February 15 to May 15, and between 6.0 and 9.5 pH units from May 16 to February 14.

1.2.6 Wash water from the vehicle maintenance shop may go into the tailings disposal facility. Oily water must go through an oil/water separator and the treated water may not have a sheen prior to entering the tailings disposal facility. Dry methods of cleanup shall be used for initial cleanup of oil spills in the maintenance shop.

1.2.7 Activities at the site which will cause a greater amount of waste material to be treated and disposed of, above that contemplated in this section of the permit, are prohibited without the prior approval by the department.

1.2.8 For monitoring as specified in Section 1.6, the water in the groundwater monitoring wells located below the toe of the TSF dam must not show a statistically significant increase, according to 18 AAC 60.830(h), in concentration above the background quality. If a statistically significant increase above the background quality is detected, corrective action outlined in Section 1.9 must be implemented.

1.2.9 The limitations in Section 1.2 do not preclude, and authorization is hereby given for, disposal of non-hazardous incidental wastes such as (i) settled solids from sumps, ditches, and degritting basins; (ii) incinerator ash and residue; (iii) ash from combustion of scrap wood material; (iv) iron (drill steel, balls, empty cans, etc.); (v) empty plastic and glass containers; (vi) inert domestic waste; (vii) construction debris; (viii) tires; (ix) spill cleanup debris approved by the department; (x) non-terne plated used oil filters that have been gravity hot-drained; and (xi) such other material as would otherwise be disposed of in a inert solid waste landfill facility without special handling.

1.2.10 As a treatment works, water may be disposed of to the mine pit at closure provided that the following requirements are satisfied, and the department determines that there will be insignificant impact on long term water quality.

1.2.10.1 Samples from each water source proposed to be discharged to the pit shall be collected at the frequency prescribed in the department-approved Monitoring Plan in Section 1.6.1, and shall be analyzed for Analytical Profile I

constituents in the Fort Knox Mine Monitoring Plan.

1.2.10.2 A department-approved long term pit lake water quality model shall include those parameters evaluated in the January 10, 2007, Revised Fort Knox Pit Lake Evaluation and be updated and reported annually according to Sections 1.2.10.1, 1.8.2, and 1.8.5.

1.2.10.3 Before any water is pumped to the pit and annually after that, an update of the long term pit lake water quality model through the previous calendar year required in Section 1.2.10.2 shall be approved by the department. Annual updates shall include: pit lake volume and quality; volumes and qualities of water entering the pit lake, including TSF decant volumes that consider all closure scenarios; and a predicted discharge date for the pit lake.

1.2.10.4 If the long term pit lake water quality model required in Section 1.2.10.2 predicts that Alaska Water Quality Standards will not be achieved by the time the pit lake is expected to discharge, the permittee shall propose a plan for water treatment or other corrective actions that achieves Alaska Water Quality Standards by the time the pit is expected to discharge. The proposed plan must be approved by the department and implemented as approved.

1.2.10.5 As part of annual reporting required in Section 1.8.2, submit each of the above to the department for review and to gain department approval for the next year's discharge to the pit.

1.2.11 Walter Creek Valley Heap Leach Facility must be closed before the TSF is closed. Surface, groundwater, heap process water, and any other water originating from the Walter Creek Valley must meet the following requirements.

1.2.11.1 All water shall be discharged to the TSF.

1.2.11.2 For the Leachate Collection and Recovery System (LCRS) sump, provided that the depth of the 40' x 40' sump area is increased to 6', between the primary and secondary liners, maintain a hydraulic head of no more than 7 feet on the secondary liner in the sump.

1.2.11.3 The LCRS flow rate through the primary liner into the secondary liner shall not exceed the design flow rate of 525 gallons per minute or exhibit a statistically significant, according to 18 AAC 60.830(h), increase in the flow rate. If these conditions are exceeded, report according to Section 1.8.1.

1.2.11.4 Except as provided in Section 1.7.5 and until closure of the TSF, any water identified in Section 1.2.11 and discharged to the TSF must satisfy the conditions of Sections 1.2.4 and 1.2.5. If either of those conditions is

exceeded, report according to Section 1.8.1.

1.2.11.5 The heap liner may not be punctured before heap closure and written department approval must be received. At heap closure, the quality of water from the heap must be evaluated based upon "rebound potential," an increase in cyanide concentration without further addition of cyanide, and may not be drained until projected rebounding concentrations meet Alaska Water Quality Standards.

1.2.11.6 All work associated with the construction of the heap, heap liner, and appurtenances must be observed and inspected in accordance with the project construction quality assurance/quality control plan by an engineer qualified in accordance with 18 AAC 72.600, for compliance with the approved plans, drawings and specifications, and for developing the construction completion report.

1.2.11.7 At closure of the TSF, all water draining from Walter Creek Valley into the TSF must comply with the Alaska Water Quality Standards.

1.2.12 The department may set or modify permit conditions based on monitoring results or changes in facility processes in accordance with permit amendment or modification procedures.

## 1.3 SITE MAINTENANCE

1.3.1 For changes that may have a significant impact on mine closure, reclamation, or water quality, information on engineering changes to the mill, new waste treatment processes, changes to solid waste disposal facilities, changes to the groundwater interception and monitoring well system, and the addition of new waste streams that discharge into the TSF or pit must be submitted to the department and approval must be obtained prior to any such changes or discharges.

1.3.2 The permittee shall provide and maintain secondary containment for all process piping and chemical mix tanks containing hazardous or toxic materials. Secondary containment is considered to be 110% of the largest tank within a containment area or the total volume of manifolded tanks. The permittee must design and install secondary containment structures in a manner that ensures that solid waste and leachate will not escape from the structures. To prevent such discharges, facilities shall be maintained in good working condition at all times by the permittee.

1.3.3 Secondary containment of all hazardous substances, as defined at AS 46.03.826(5), must be impermeable to those stored hazardous substances.

1.3.4 The permittee shall design all process piping and chemical mix tanks to allow for routine inspections for leaks. Process piping outside of the mill building must not

be buried unless secondary containment is used that provides the ability to inspect for leaks. This stipulation does not apply to the recycle water return lines leading from the TSF to the mill.

1.3.5 The permittee shall develop the site in accordance with the plans submitted by the applicant as required by this permit and approved by the department, and approved amendments to those plans. Pollution prevention concepts shall be incorporated into operations plans for the project.

## 1.4 SITE CONSTRUCTION AND OPERATION

1.4.1 The permittee shall establish, update and maintain proof of financial responsibility in accordance with section 1.12 of this permit.

1.4.2 The permittee shall construct and maintain a seepage collection system below the TSF in accordance with plans approved by the department. This seepage collection system below the TSF shall be constructed and maintained such that all seepage and runoff water from the TSF will be captured and pumped back to the TSF impoundment. The seepage and runoff collection system shall be operated to ensure that the TSF operates as a zero discharge facility.

1.4.3 The freeboard of the TSF shall be maintained to minimize overtopping as indicated in the Fort Knox Project's Operation, Maintenance and Emergency Action Manual approved by ADNR, Division of Mining, Land and Water, Dam Safety and Construction Unit.

1.4.4 The TSF must be operated in a manner that prevents seepage from escaping containment.

1.4.5 The permittee shall ensure that wastes are deposited into the TSF in a manner that will not damage or otherwise jeopardize the integrity of the containment of the TSF.

1.4.6 The permittee shall take reasonable measures to control dust and particulates that may occur from TSF, Walter Creek Valley Heap Leach Facility, roads or other mine components by wetting or other effective measures.

1.4.7 The permittee shall not dispose of waste materials in quantities exceeding the design capacity of the disposal facilities.

1.4.8 The permittee shall control and treat surface water, groundwater and seepage as necessary to prevent water quality exceedances in waters of the State.

1.4.9 The permittee shall notify the department in writing at least 15 days before the introduction of a new chemical into the process or waste treatment streams. Material Safety Data Sheets on new chemicals must be forwarded to the

department at time of notification and maintained on site. Introduction of new chemicals into the process requires written department approval.

1.4.10 Under 18 AAC 72.600, the permittee shall submit plans to the department, at least 60 days before construction of the modification, and receive department approval of any changes that will significantly modify the quality or quantity of a discharge, the operation of a waste treatment component, or the disposal facilities.

1.4.11 The permittee must notify the department in writing at least 15 days before the introduction of new process solutions into an existing process or waste treatment component that has been significantly modified.

1.4.12 The permittee must submit to the department within 90 days after completing construction of a significant modification to an existing process component:

1.4.12.1 As-built drawings of the process component(s) which show any changes of those aspects that would affect performance of that process component as required in 18 AAC 72.600,

1.4.12.2 A summary of the quality control activities that were carried out during construction, and

1.4.12.3 The revised operating plans that reflect modifications made during construction.

1.4.13 The permittee shall maintain fuel handling and storage facilities in a manner, which will prevent the discharge of hazardous substances. A Spill Prevention, Control and Countermeasures (SPCC) plan shall be in effect according to provisions of 40 C.F.R. Part 112 for facilities storing 660 gallons of fuel in a single container above ground, 1,320 gallons in the aggregate above ground, or 42,000 gallons below ground.

1.4.14 The permittee shall notify the department of a discharge of any hazardous substance at the facility in conformance with 18 AAC 75 Article 3. Reportable spills include unplanned discharges of process chemicals to the TSF which would violate limitations in this permit.

1.4.15 Using best efforts, the permittee shall develop spill response plans for the transportation of hazardous substances, including petroleum products, by the permittee to the facility and shall require other transporters of these substances under contract with the permittee to make such spill plans available to the permittee and the department upon request.

1.4.16 Any area of open water in the permitted disposal area must not become an attractive area for waterfowl or shorebirds. Ponding or pooling of process solution water on the Walter Creek Valley Heap Leach Facility without netting or other

protection that could endanger birds or wildlife is prohibited. Any wildlife casualties shall be reported to the department and to the appropriate state and federal agencies.

## 1.5 INERT SOLID WASTE LANDFILLS

1.5.1 The permittee shall comply with the provisions in the most recent department-approved Fort Knox Mine Solid Waste Management Plan.

1.5.2 The permittee shall conduct weekly visual inspections to ensure the active landfills are being operated in accordance with the most recent department-approved Fort Knox Mine Solid Waste Management Plan.

1.5.3 The permittee shall close the inert solid waste landfill trenches within 60 days after waste is last deposited in that area, using a soil material at least 2 feet thick and graded to prevent water from ponding.

1.5.4 The permittee shall control and treat surface water, groundwater and seepage as necessary to prevent off-site water quality exceedances, shall not place solid waste in water in the inert solid waste landfill facilities, and shall not allow solid waste to wash or blow away from the facility.

## 1.6 MONITORING - All monitoring shall be reported according to Section 1.8

1.6.1 The Monitoring Plan submitted on June 23, 2006 by Fairbanks Gold Mining Inc., and approved by the department, is incorporated into this permit. Future department-approved changes to project monitoring will be included as modifications to the Monitoring Plan and do not require re-issuance or modification of this permit. The Monitoring Plan shall maintain monitoring procedures to include the following and must be updated within 60 days of permit issuance.

1.6.1.1 Weekly visual monitoring of the facilities for signs of damage or potential damage from settlement, ponding, leakage, thermal instability, frost action, erosion, thawing of the waste, or operations at the site. Visual monitoring shall be documented.

1.6.1.2 Monitoring of surface and groundwater near the site to ensure that Alaska Water Quality Standards are not exceeded and that sample results are statistically valid.

1.6.1.3 Required monitoring locations include the following:

- process stream slurry prior to it being discharged to the tailing impoundment,

- interceptor water into the tailing impoundment, any discharge over the spillway at the TSF,
- groundwater observation wells below the interceptor system,
- surface water at the upper end of the developed wetlands,
- wetlands flow immediately prior to entering the fresh water reservoir,
- fresh water reservoir,
- pit lake and contributing waters to the pit lake,
- Walter Creek Valley Heap Leach Facility discharges, which include heap water to the TSF and leak detection monitoring in the LCRS and Process Component Monitoring System (PCMS) sumps, and
- heap underdrain system consisting of three collinear monitoring wells in the following locations: the base platform, the bench of the in-heap storage pond embankment, and the crest of the in-heap storage pond embankment, and groundwater monitoring wells including the old batch plant well.

1.6.1.4 To maintain limits established in Sections 1.2.11.2 and 1.2.11.3, continuously monitor the LCRS including head on the secondary liner in the sump, flow from the sump, and the head on the primary liner in the pregnant solution pond. Compile monthly summaries of data including maximums, ranges, and trends, and report according to Section 1.8.

1.6.1.5 Geochemical monitoring of overburden, development rock, run of mine ore that is placed on the Walter Creek Valley Heap Leach Facility, and tailings samples from the Fort Knox Mine to ensure that there is low potential for production of leachate that is acidic or contains levels of metals that would contaminate surface or groundwater. In the event that humidity cell (kinetic) tests are performed, department approval is required before termination of those tests.

1.6.1.6 Monitoring of the tailings prior to placement in the TSF to ensure that the limitations contained in Sections 1.2.4 and 1.2.5 are met.

1.6.1.7 Water quality, flow, and management monitoring that accounts for process water discharged to the TSF, process water recycled to the mill, water entering the pit, water entering the interceptor well system, water used in the Walter Creek Valley Heap Leach Facility, including the LCRS and each PCMS sump, and water levels in the underdrain monitoring wells.

1.6.1.8 Wildlife monitoring as required in Section 1.4.16.

1.6.2 The Monitoring Plan submitted on June 23, 2006 by Fairbanks Gold Mining, Inc., and approved by the department includes a Quality Assurance Project Plan

(QAPP). The permittee shall update and maintain the QAPP as follows:

1.6.2.1 Adhere to conditions in the department-approved Fort Knox Mine Project QAPP Quality Control and Quality Assurance Objectives sections. The QAPP will reflect the current sampling program for the mine facilities. Any significant changes in the QAPP procedures shall be submitted to the department for approval.

1.6.2.2 Ensure samples are analyzed by a laboratory that follows EPA-approved procedures, quality control requirements, reporting and documentation procedures. The QAPP, containing quality control procedures and criteria, analytical methods, detection limits and reporting requirements pertinent to the permit holder's samples, shall be submitted to the department for approval and must be updated annually and whenever changes to methods or changes in the laboratories used occur.

1.6.2.3 Analyze collected samples using methods set out in EPA-600/4-79-020 Methods for Chemical Analysis of Water and Wastes; EPA-600/4-82-057 Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater; Standard Methods for the Examination of Water and Wastewater (edition in effect at the time of sampling); or other methods approved by the department. Each result must be accompanied by a reference, such as the method number, to the method that was used to perform the analysis.

1.6.2.4 Conduct inspections of the TSF in conformance with the Operations, Maintenance and Emergency Action Manual approved by ADNR, Division of Mining, Land and Water, Dam Safety and Construction Unit.

1.6.3 Samples taken as required by Section 1.6 shall be analyzed in conformance with the most recent Monitoring Plan and QAPP submitted by Fairbanks Gold Mining, Inc., as approved by the department.

1.6.4 A sample from any compliance well or surface water compliance location that detects WAD cyanide shall be reported to the department as soon as possible, but no later than the end of the next working day. Re-sampling for sample confirmation shall be performed as soon as practical.

1.6.5 The permittee shall maintain a log of all wastes, other than those that have gone through the process sampling point, disposed into the TSF and all wastes disposed of in the inert solid waste landfill facilities. The log shall include the date of disposal, estimated volume of waste, a description of the waste and any required sampling or analysis performed on the waste. A summary shall be included in the annual report required in Section 1.8.

1.6.6 Maintenance of inspection and sampling logs, and procedures for processing,

consolidating, and reporting inspection and sampling data shall be in conformance with the most recent Monitoring Plan and QAPP submitted by Fairbanks Gold Mining, Inc., as approved by the department.

1.6.7 Groundwater and surface water monitoring and corrective action shall be in accordance with Section 1.9, 18 AAC 60 Solid Waste Management Regulations, and the most recent Monitoring Plan and QAPP submitted by Fairbanks Gold Mining, Inc., as approved by the department or modified by amendment to this permit.

1.6.8 The department may modify monitoring requirements, including the establishment of additional compliance points in response to trends showing changes in the concentration of parameters being monitored.

1.6.9 If the permittee monitors any influent, effluent, receiving water, air or solid waste characteristic in addition to those identified in this permit, or more frequently than required, the permittee shall notify the department that the additional monitoring has occurred in the next quarterly report after the monitoring has occurred. The results of such monitoring shall be available for inspection by the Commissioner or his/her representative at the project site, or other location proposed by the permittee and agreed upon by the department. The permittee shall provide copies of the results to the department upon request.

1.6.9.1 Results detecting WAD cyanide shall be reported in accordance with Section 1.6.4.

1.6.9.2 All exceedances of Alaska Water Quality Standards shall be reported in accordance with Section 1.8.1.

## 1.7 MODIFIED LIMITS AND REPORTING

1.7.1 If during routine quarterly sampling the WAD cyanide concentration in the interceptor water from the interceptor wells exceeds 1 mg/L, a check sample will be taken as soon as reasonably possible to confirm the results. If the check sample is also above 1 mg/L, then weekly sampling will begin for WAD cyanide in the interceptor water and will continue until the average of the previous 6 samples is less than or equal to 1 mg/L, at which time the frequency shall reduce to monthly. When the average of the most recent six consecutive monthly samples does not exceed 1 mg/L, quarterly sample frequency may be resumed.

1.7.2 If the average concentration of the WAD cyanide in the previous 6 samples of the interceptor water exceeds 2 mg/L, the tailing waste slurry WAD cyanide limits in Section 1.2.4 are changed to a monthly average of 2 mg/L, and a maximum of 10 mg/L.

1.7.3 If the average concentration of the WAD cyanide in the previous 6 months of the

interceptor water is less than 1 mg/L, the tailing waste slurry WAD cyanide limits in Section 1.2.4 revert back to a monthly average of 10 mg/L, and a maximum of 25 mg/L.

1.7.4 If WAD cyanide concentration above 10 mg/L is detected in the heap's PCMS sumps, then all sump water must remain contained within heap leach system, the department must be notified within one working day of discovery according to Section 1.8.1, and the frequency and location of monitoring in the underdrain system must be expanded as approved by the department. Limits as they apply to the underdrain monitoring system are specified in Sections 1.7.5 and 1.2.11.

1.7.5 If WAD cyanide concentration above 0.2 mg/L is detected in the underdrain system, the permittee must notify the department within one working day of discovery. Then, the permittee must demonstrate to the department's satisfaction that all water identified in Section 1.2.11 reports to the TSF.

1.7.6 Site Specific Method Detection Limit (MDL) and Minimum Level (ML) for WAD Cyanide Concentrations

1.7.6.1 During the life of this permit, a new or revised site specific MDL for WAD cyanide unique to a site specific water chemistry may be established in accordance with 18 AAC 70.020(c)(7) and EPA guidance document no. EPA-821-B-04-005 for a pollutant present in this discharge. Upon the effective date of the department-approved MDL, this permit is automatically modified to require reporting of measurements at or above the MDL.

1.7.6.2 During the life of this permit, a new or revised site specific ML for WAD cyanide unique to a site specific water chemistry may be established in accordance with 18 AAC 70.020(c)(7) and EPA guidance document no. EPA-821-B-04-005 for a pollutant present in this discharge. Upon the effective date of the department-approved ML, this permit is considered to be automatically modified for compliance purposes in accordance with the detection level specified in the ML. Exceedance of a ML shall be reported according to Section 1.8.1.

1.7.6.3 Values between the MDL and ML provide a margin of safety indicating increasing trends prior to any exceedances. Based on the rate and magnitude of a trend, the department may require corrective action according to Section 1.9.2 to prevent environmental harm. When a MDL is exceeded, the permittee shall verbally notify the department within 60 days of the end of the calendar quarter when it occurred and provide written notification within 7 days of verbal notice.

## 1.8 REPORTING

1.8.1 If a violation of Alaska Water Quality Standards is detected at a surface water or

groundwater monitoring location, or if an exceedence of the limits set out in Sections 1.2 or 1.7 is detected, the permittee shall verbally notify the department no later than the end of the next working day after receipt of monitoring results, and shall conduct corrective actions according to Section 1.9.3.

1.8.2 For each year of sample collection and analysis, the permittee shall submit to the department quarterly monitoring reports, for a total of three quarterly reports each year and one annual monitoring report, which includes the fourth quarter monitoring data, summarizing the inspection and monitoring results set out in Section 1.6. All quarterly reports shall be submitted to the department no later than 60 days after the last day of the quarter. The annual report will be due annually by March 1st, summarize activities and data from the preceding calendar year, and discuss relevant plans for the upcoming year. Copies of the laboratory reports should be submitted with the quarterly reports for the first year of data collection and analysis, or for the first year after a change of the laboratory performing the analysis is made. Electronic copies of reports shall be submitted to the department using commercially available software along with the hard copies, or according to electronic reporting requirements established by the department.

1.8.3 Quarterly and annual reports required in Section 1.8.2 shall include information necessary to determine data validity, data variations and trends, and clearly identify any exceedence of limits contained in this permit and Alaska Water Quality Standards or criteria (see Section 1.1.3). All records and information which validate the QAPP, resulting from the monitoring activities required by this permit, including but not limited to all records of analyses performed, calibration and maintenance of instrumentation, and recordings from continuous monitoring instrumentation, shall be retained in Alaska for observation by the department for three years. Upon request from the department, the permittee shall submit certified copies of such records. The department may at its discretion perform field and laboratory audits of monitoring activities.

1.8.4 An annual meeting with the department will be held in conjunction with the Alaska Department of Natural Resources (ADNR) and open to the public in which the annual report required in Section 1.8.2 will be presented. The annual report shall be available to the department two weeks prior to the annual meeting.

1.8.5 The annual report required in Section 1.8.2 shall address the adequacy of the long term pit lake water quality model required under Section 1.2.10 and include tables similar to those presented in the January 10, 2007, Revised Fort Knox Pit Lake Evaluation.

1.8.6 The annual report required in Section 1.8.2 shall also address the adequacy of the financial responsibility, including, but not limited to, inflation, significant changes in reclamation activity costs, and concurrent reclamation, expansion or other changes to the operation of the facility.

1.8.7 The permittee shall maintain an updated Plan of Operations and Reclamation Plan, as required by ADNR, showing site use and development plans, and shall provide the department with copies of any amendments to that Plan of Operations affecting the waste disposal operations authorized by the permit.

1.8.8 Notifications and reporting as required under this permit shall be submitted to the department at the following address:

Department of Environmental Conservation
Division of Water
610 University Avenue
Fairbanks, Alaska 99709-3643

Phone: (907) 451-2136

Knowingly making a false statement, by the permittee, the operator or other employees, including contractors, on any such report may result in the imposition of criminal penalties as provided for under AS 46.03.790.

## 1.9 CORRECTIVE ACTIONS

1.9.1 The permittee shall comply with 18 AAC 60.815 if the visual monitoring program in Section 1.6.1.1 discovers damage or potential damage to the waste disposal-related facility that could lead to water quality violations or harm wildlife species.

1.9.2 The permittee shall comply with 18 AAC 60.820-860 if a statistically significant increase above background water quality or an exceedance of Alaska Water Quality Standards in any of the groundwater sampling locations is detected. Statistical significance shall be determined using one of the methods outlined in 18 AAC 60.830(h) and performance standards outlined in 18 AAC 60.830(i). The permittee shall comply with the notification requirements in 18 AAC 60.850(c) upon determination of a statistically significant increase above background water quality.

1.9.3 After reporting a violation under Section 1.8.1, the permittee shall perform the following tasks.

1.9.3.1 Determine the extent of the exceedance.

1.9.3.2 In consultation with the department and documented in writing, implement a plan to determine the cause and source of the exceedence.

1.9.3.3 Submit to the department, within seven working days after an exceedence is verified by the permittee, a plan for corrective actions to prevent adverse environmental impacts and further exceedances of applicable Alaska Water Quality Standards or permit limits.

1.9.3.4 Implement the corrective action plan as approved by the department.

1.9.4 The permittee shall abide by any department-approved corrective action plan.

## 1.10 TEMPORARY CLOSURE

1.10.1 A temporary closure shall be defined as a suspension of mining, milling or heap leaching activities for more than 90 days but less than three years. The length of time for a temporary closure may be extended beyond three years by written authorization from the department. The permittee shall submit a conceptual temporary closure plan to the department prior to commencement of material placement on the Walter Creek Valley Heap Leach Facility.

1.10.2 The permittee shall submit a specific temporary closure plan to the department no later than ten days after a temporary closure has been initiated. The permittee is encouraged to submit the specific plan immediately upon availability, and prior to commencement of the temporary closure if possible. The specific plan shall include the following:

1.10.2.1 The procedures, methods, and schedule to be implemented for the treatment, disposal, and storage of process waters,

1.10.2.2 The control of surface and groundwater drainage to and from the facility and the surrounding area,

1.10.2.3 The control of erosion from the TSF, Walter Creek Valley Heap Leach Facility and inert solid waste landfills, and

1.10.2.4 The secure storage of chemicals during the period of closure.

1.10.3 The department shall have 15 days to review and approve or request modifications to the temporary closure plan.

1.10.4 Once a temporary closure plan has been approved, full implementation of the approved specific plan is required. The plan can be amended by submitting a revised plan to the department for approval.

1.10.5 During temporary closure of the site, the permittee shall:

1.10.5.1 Continue pollution control activities associated with the TSF, the Walter Creek Valley Heap Leach Facility, the pit, and the inert solid waste landfill facilities, including but not limited to dust control, maintenance of the drainage diversion structures, maintenance of all seepage control structures and processes, management of the heap leach solution to prevent discharge from the heap leach facility, and maintenance of the TSF including

appropriate freeboard as specified by this permit or the temporary closure plan.

1.10.5.2 Continue monitoring and reporting as required for all active portions of the site including the TSF, the Walter Creek Valley Heap Leach Facility, the pit, and the inert solid waste landfills as specified by this permit or the temporary closure plan.

1.10.5.3 Complete reclamation and corrective action requirements as appropriate under the Reclamation and Closure Plan in light of the nature of the closure.

## 1.11 PERMANENT CLOSURE

1.11.1 Within 90 days of the decision that permanent cessation of the mill or heap leaching processes will occur, updated reclamation and monitoring plans must be submitted to the department for approval. The updated plans must address current conditions at the facility.

1.11.2 Permanent closure of the site must be implemented and completed in accordance with the conditions of this permit and with the Plan of Operations and Reclamation and Closure Plan approved by the department and ADNR.

1.11.3 Permanent closure of the waste disposal facilities will be complete when the following criteria are met:

1.11.3.1 A department-approved cover system, which may include re-vegetation, soil, or water cover, is installed on the TSF and the Walter Creek Valley Heap Leach Facility and drainage channels are constructed and stable;

1.11.3.2 The spillway of the tailing dam is constructed and stable;

1.11.3.3 A vegetative cover is established on the waste disposal facilities as prescribed in the Reclamation and Closure Plan or most recent Reclamation and Closure Plan approved by the department and ADNR;

1.11.3.4 Active water treatment is not required for any water discharged from the facilities, any surface water discharge from the mine site or facilities meets water quality criteria contained in the Alaska Water Quality Standards (18 AAC 70), and any groundwater discharge from the seepage collection system meets Alaska Water Quality Standards (18 AAC 70) or does not exhibit a statistically significant increase above the background concentrations using methods described in 18 AAC 60.830 for the analysis of statistical significance.

1.11.3.5 For the pit lake water, annual models and reports required under Section

1.2.10 must demonstrate that the pit lake either meets or is projected to meet Alaska Water Quality Standards without active treatment before the pit lake is expected to discharge.

1.11.4 Permanent closure must be achieved prior to the cessation of any care and maintenance activities required by Section 1.10.5 and the approved temporary closure plan if a period of temporary closure immediately preceded commencement of permanent closure.

1.11.5 The permittee shall maintain the facility correcting any erosion or settlement of the TSF, the Walter Creek Valley Heap Leach Facility, and the pit that may impair water quality or otherwise threaten the environment, up until the time that this permit, or any successor permit, is transferred to another entity or terminated by the department.

1.11.6 Post-closure monitoring of the groundwater, surface water and visual monitoring for settlement and erosion shall occur according to the sampling schedule set out in the current Monitoring Plan approved by the department. This schedule and the parameters monitored may be modified by the department based on the monitoring results received.

## 1.12 PROOF OF FINANCIAL RESPONSIBILITY

1.12.1 The permittee shall provide the department with proof of financial responsibility for closure of the facilities and post-closure monitoring. The proof of financial responsibility shall cover costs incurred for closure and post-closure monitoring of TSF, the Walter Creek Valley Heap Leach Facility, the pit, the inert solid waste landfills, and related facilities, shall cover the activities set out in Section 3, and shall be in the amount shown in Section 3. The area covered by the financial responsibility required in this Section is shown on the map attached as Section 5. The financial responsibility amount shown in Section 3 shall be in place prior to any placement of ore on the Walter Creek Valley Heap Leach Facility.

1.12.2 Annually or during the renewal, modification or amendment of this permit, the department, in consultation with ADNR, will review and modify if appropriate, the financial responsibility requirements including adjustments for inflation, concurrent reclamation and expansion or other changes to the operation of the facility. The permittee shall address the adequacy of the financial responsibility in the annual report required in Section 1.8.2.

1.12.3 The proof of financial responsibility may be in the form of a trust fund, surety bond, letter of credit, insurance, or any other mechanism approved by the department.

1.12.4 Approved proof of financial responsibility must remain available through the post-closure period, up to 30 years, and may not be released until the department certifies in writing that closure of the facility and the required post-closure

monitoring have been successfully concluded, or that another entity will assume responsibility for permit compliance and post-closure monitoring.

1.12.5 It shall be the responsibility of the permittee to provide acceptable proof of financial responsibility. The department will accept or reject said Offer of Proof as expeditiously as possible, but in no event later than 30 days after its receipt.

1.12.6 If the permittee is unable to provide proof of financial responsibility, which is acceptable to the department and is approved by the department in writing within the time period stated above, this permit will expire automatically at that time, notwithstanding any other approvals to the contrary, unless the department's failure to act is responsible for the delay in accepting or rejecting this proof.

1.12.7 If the permittee fails to comply with the terms and conditions of this permit, as written, renewed, modified or amended, and if the department concludes that such failure may prevent, inhibit or delay satisfactory closure or post-closure monitoring of the disposal facility, then the department may exercise its rights under the approved mechanism for financial responsibility to access the funds and use them for appropriate closure and post-closure activities.

## 1.13 FACILITY AUDIT

1.13.1 The permittee shall conduct periodic audits for the purpose of reviewing performance under this permit and approvals, and the agencies' regulatory oversight of such performance, and to aid in updating the Reclamation and Closure Plan and associated closure and post closure monitoring cost estimate. The first audit shall occur in 2011 or prior to final closure if final closure occurs prior to 2011. Subsequent environmental audits shall occur every five years. Audits shall be timed so that the auditor's site visit occurs during the snow-free season, far enough in advance of the deadline for the permittee's submittal of an updated Reclamation and Closure Plan, and, associated closure and post closure monitoring cost estimate and so that the results of the audit can be taken into account in that update. In January of the audit year, the parties shall confer to discuss the minimum qualifications of and process for selecting an independent, third-party auditor, and the minimum requirements for the scope of the audit. The third party contractor and the scope of the audit should be mutually agreed upon by the department, ADNR, and the permittee, but in the event that agreement cannot be reached, the agencies retain the final contractor selection and scope of audit decisions. The purpose of the audit will be to determine whether the permittee's environmental management systems and the regulatory controls in place provide reasonable assurances that environmental objectives in the current Plan of Operations and relevant permits and approvals are being met and that the systems and controls are functioning as intended. The audit results will be used by the permittee and the agencies to assist in updating, renewing, or issuing approvals and permits, in updating polices, plans, and procedures, in determining compliance with permits and approvals, and in evaluating the adequacy of the financial responsibility.

The intent of the audits will be to determine if both the facility management and regulatory controls of the facility provide reasonable assurances that the facility and controls are functioning as intended.

The scope of subsequent audits may be revised as mutually agreed upon prior to initiation of each audit, to address specific issues or objectives not previously identified in this permit; however, the agencies retain the final decision authority for the scope of subsequent audits. Identification of such issues or objectives may be accomplished through a joint permittee/agency meeting prior to the audit.

1.13.2 The audit will be an objective, systematic, documented review of the conditions, operations, and practices related to permit requirements and facility management conducted under this permit.

## 1.14 POLLUTION PREVENTION STRATEGY

1.14.1 During the life of the project the permittee is encouraged to implement pollution prevention practices at the facility. To implement pollution prevention, it is recommended that the permittee evaluate all physical and maintenance phases of the operation, including all process and waste treatment components, mechanical maintenance facilities, chemical storage and facility maintenance by doing:

1.14.1.1 An assessment of toxic chemicals used and hazardous wastes generated. This should include data on the types, amount, and hazardous constituents of toxic substances and hazardous waste streams;

1.14.1.2 A review of potential reduction options for toxic chemical use and hazardous waste generation;

1.14.1.3 An evaluation considering costs associated with the use of toxic chemicals and the generation of hazardous wastes including the:

- Cost of purchasing chemicals
- Cost of disposal
- Cost of storage
- Cost of waste treatment
- Cost of environmental compliance and liability
- Use of the Alaska Materials Exchange to obtain raw chemicals;

1.14.1.4 An analysis of reduction options including equipment/technology modifications, process/procedure modifications, product reformulation/redesign, raw material substitution, improvements in housekeeping, maintenance, training, and inventory control, education, and conservation (energy, water, etc.), that identifies which options are

technically and economically feasible; and

1.14.1.5 Numeric or performance reduction goals for chemicals used and waste generated.

# 2 GENERAL PERMIT CONDITIONS

## 2.1 ACCESS AND INSPECTION

The permittee shall allow the Commissioner or his/her representative access to the permitted facility at reasonable times to conduct scheduled or unscheduled inspections or tests to determine compliance with this permit, state laws, and regulations.

## 2.2 INFORMATION ACCESS

Except where protected from disclosure by applicable State or Federal law, all records and reports submitted in accordance with the terms of this permit shall be available for public inspection at the State of Alaska Department of Environmental Conservation, Fairbanks Office, Fairbanks, Alaska.

## 2.3 CIVIL AND CRIMINAL LIABILITY

Nothing in this permit shall relieve the permittee from any potential civil or criminal liability for noncompliance with the permit or with applicable laws.

## 2.4 AVAILABILITY

The permittee shall post or maintain a copy of this permit available to the public at the facility.

## 2.5 ADVERSE IMPACT

The permittee shall take all necessary means to minimize any adverse impacts to the receiving waters or lands resulting from noncompliance with any limitation specified in this permit, including any additional monitoring needed to determine the nature and impact of the noncomplying activity. The permittee shall cleanup and restore all areas adversely impacted by the noncompliance.

## 2.6 CULTURAL OR PALENTOLOGCAL RESOURCES

Should cultural or paleontological resources be discovered as a result of this activity, work, which would disturb such resources, is to be stopped, and the State Historic Preservation Office, Division of Parks and Outdoor Recreation, Department of Natural Resources (907-465-4563), is to be notified promptly.

## 2.7 APPLICATIONS FOR RENEWAL

In accordance with 18 AAC 15.100(d), an application for renewal or amendment of this permit must be made no later than 30 days before the expiration date of the permit or the planned effective date of the amendment.

## 2.8 OTHER LEGAL OBLIGATIONS

This permit does not relieve the permittee from the duty to obtain any other necessary permits from the department or from other local, state, or federal agencies, and to comply with the requirements contained in any such permits. All activities conducted and all plans implemented by the permittee pursuant to the terms of this permit shall comply with all applicable local, state, and federal laws and regulations.

## 2.9 TRANSFER OF OWNERSHIP

In the event of any change in control or ownership of the permitted facility, the permittee shall notify the succeeding owner or controller of the existence of this permit by letter, a copy of which shall be forwarded to the Director of the Division of Water. The original permittee remains responsible for permit compliance unless and until the succeeding owner or controller agrees in writing to assume such responsibility, and the department approves assignment of the permit. The department will not unreasonably withhold such approval.

As between the State and the permittee, no transfer of this permit shall relieve the permittee of any liability arising out of operations conducted prior to such transfer, regardless of whether such liability accrues before or after such transfer.

## 2.10 TOXIC POLLUTANTS

If during the life of this permit a new or revised toxic pollutant (including oil, grease, or solvents) concentration standard is established in accordance with 18 AAC 70 for a pollutant present in this discharge and that standard is more stringent than the limitation in this permit, then upon the effective date of the new rule, this permit is considered to be automatically modified in accordance with the new toxic pollutant concentration standard.

# 3 FINANCIAL RESPONSIBILITY FOR THE FORT KNOX MINE CLOSURE, MAINTENANCE AND POST-CLOSURE MONITORING COSTS

Solid waste regulations (18 AAC 60) allow the department to require proof of financial responsibility for closure of the facility and post-closure monitoring. The total proof of financial responsibility for the life of this permit, unless modified sooner, shall be **$34,314,418**. The total financial responsibility includes financial responsibility required by Alaska Department of Environmental Conservation under 18 AAC 60 and the Alaska Department of Natural Resources under Title 11 of the Alaska Administrative Code. The permittee can apply to have the amount of the financial responsibility adjusted during the life of the permit, if for example concurrent reclamation has been completed. The total financial responsibility is based on the following information in the table below.

## FINANCIAL RESPONSIBILITY

### *DIRECT COSTS*

| Reclamation Task | Final |
|---|---|
| Waste Rock Dumps | **8,817,316** |
| Stockpiles | **405,042** |
| Growth Media Stockpiles | **50,432** |
| Mill Decommission | **207,308** |
| Building Foundations | **90,390** |
| Building Sites | **389,011** |
| Borrow Areas | **91,210** |
| Roads | **38,727** |
| Pit | **136,077** |
| Pit Power Line Demolition | **16,047** |
| Gil Causeway | **12,593** |
| Tailing – Earthwork | **1,272,356** |
| Tailing - Spillway Construct | **1,466,015** |
| Tailings Water Mgmt | **1,870,551** |
| Heap Leach | **1,663,406** |
| Heap Leach Water Mgmt | **3,917,752** |
| Well Closure | **35,782** |
| Post-Closure Monitoring | **846,793** |
| Building Demolition | **0** |
| Annual Pit Lake Modeling | **90,000** |
| Treat Pit Water | **500,000** |
| **Total Direct Costs** | **21,916,808** |

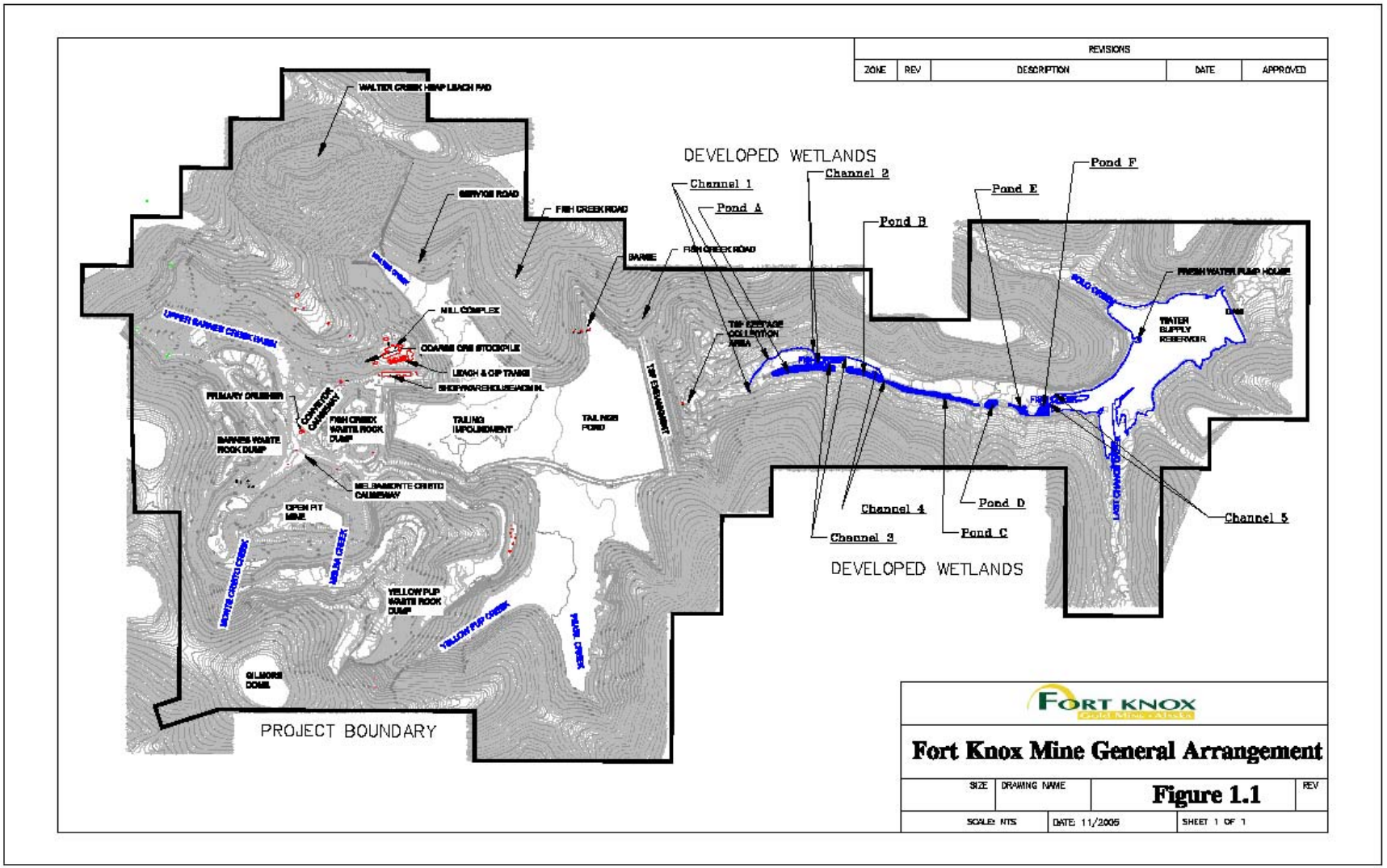
### *INDIRECT COSTS*

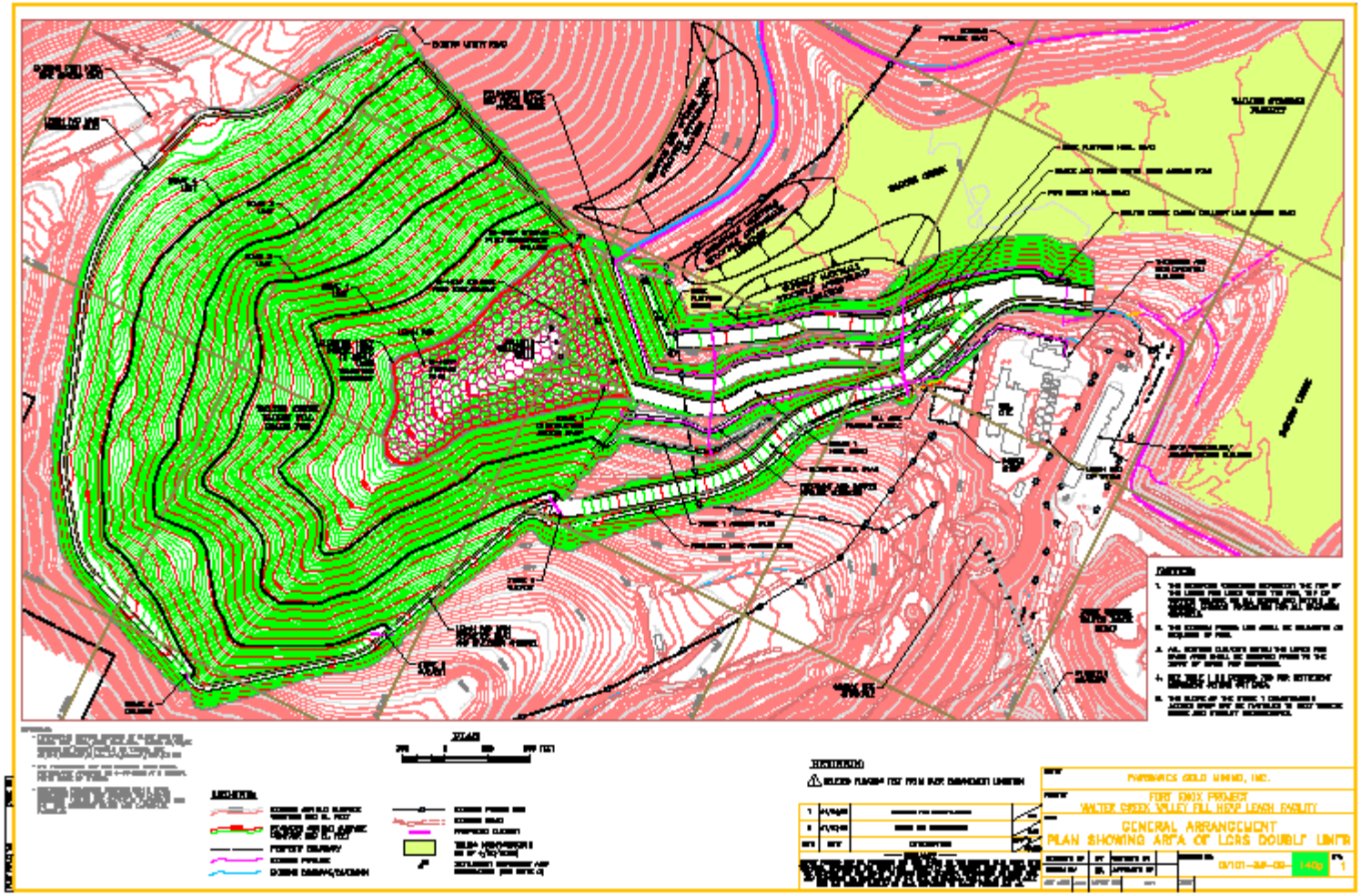
| Reclamation Task | | Final |
|---|---|---|
| Mobilization/Demobilization | 3.0% | 657,504 |
| Engineering/Redesign | 3.0% | 657,504 |
| Contractor Profit & Overhead | 15.0% | 3,287,521 |
| Performance Bond | 1.5% | 328,752 |
| Payment Bond | 1.5% | 328,752 |
| Contract Administration | 8.0% | 1,753,345 |
| Contingencies | 15.0% | 3,287,521 |
| Insurance Premiums | 1.5% | 84,544 |
| Indirect Costs (Contract Admin) | 21.0% | 368,202 |
| **Total Indirect Costs** | **49.1%** | **10,753,646** |
| **Interim Maintenance Cost** | | **579,951** |
| **Total Labor Cost** | | **5,636,278** |
| **TOTAL DIRECT & INDIRECT** | | **33,250,405** |
| **Inflation** | **3.2%** | **1,064,013** |
| **TOTAL COST** | | **34,314,418** |

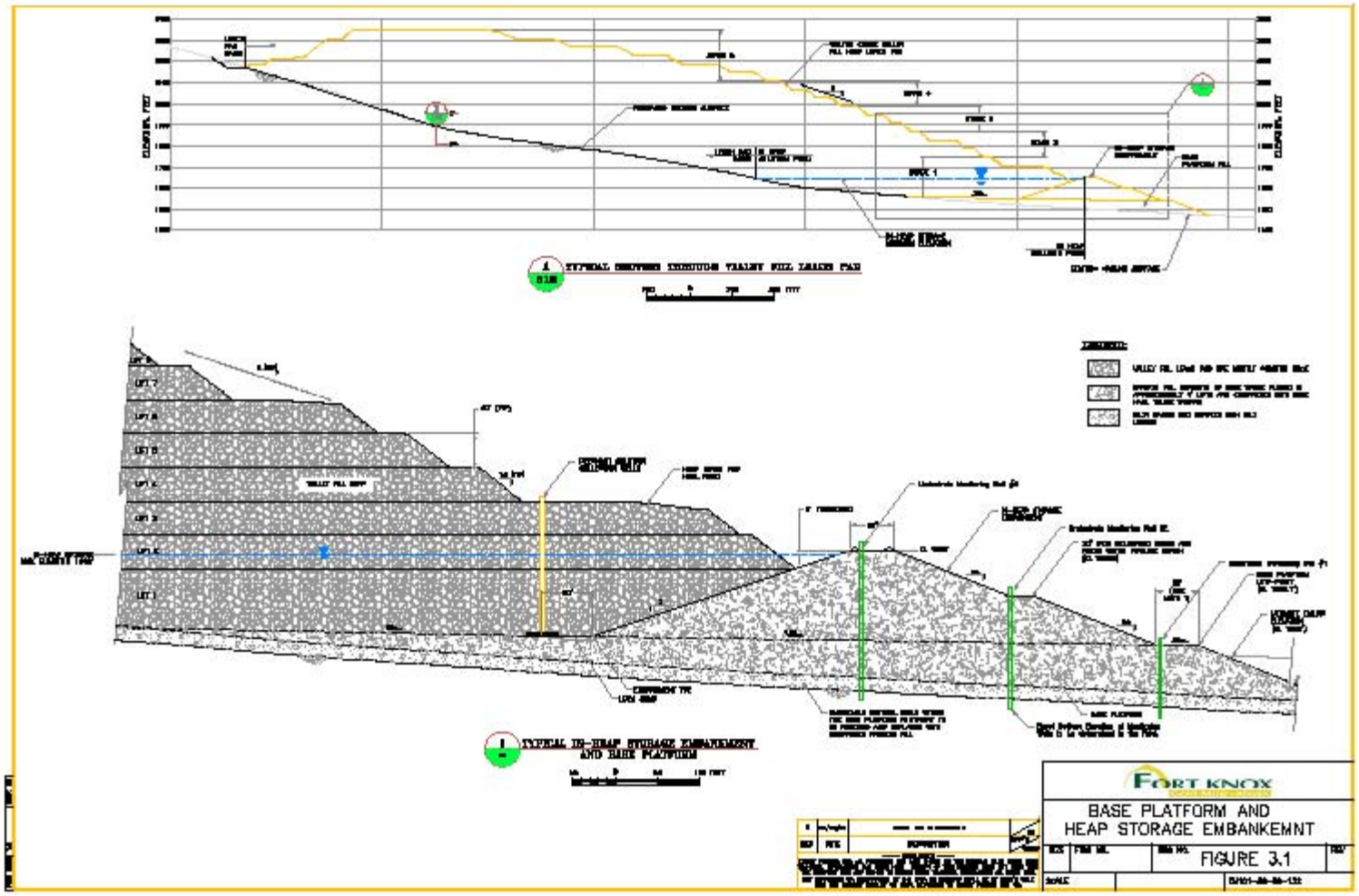
# 4 GLOSSARY OF TERMS

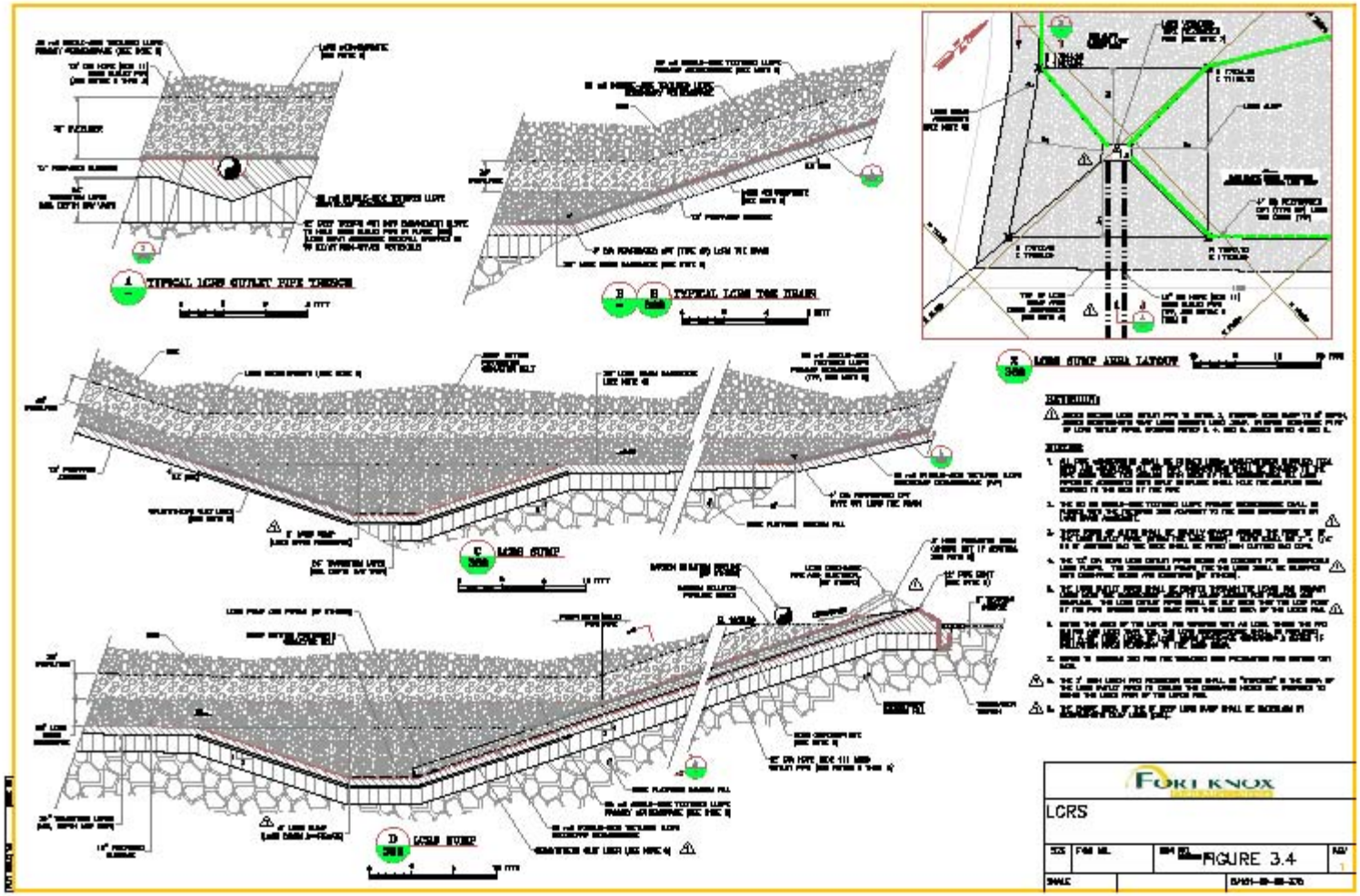
| | |
|---|---|
| AAC | Alaska Administrative Code |
| ABA | Acid Base Accounting |
| ADNR | Alaska Department of Natural Resources |
| AP | Acid Potential: calculated from ABA |
| CFR | Code of Federal Regulations |
| FGMI | Fairbanks Gold Mining Inc. (permittee) |
| LCRS | Leachate Collection and Recovery System |
| MDL | Method Detection Limit |
| ML | Minimum Level |
| NP | Neutralization Potential: calculated from ABA |
| NP/AP ratio | Neutralization Potential to Acid Potential Ratio |
| PCMS | Process Component Monitoring System |
| Permittee | Fairbanks Gold Mining Inc. |
| QAPP | Quality Assurance Project Plan |
| SPCC | Spill Prevention Control and Countermeasure |
| TSF | Tailings Storage Facility |
| WAD CN | Weak Acid Dissociable Cyanide |
| WQS | Alaska Water Quality Standards (18 AAC 70) |

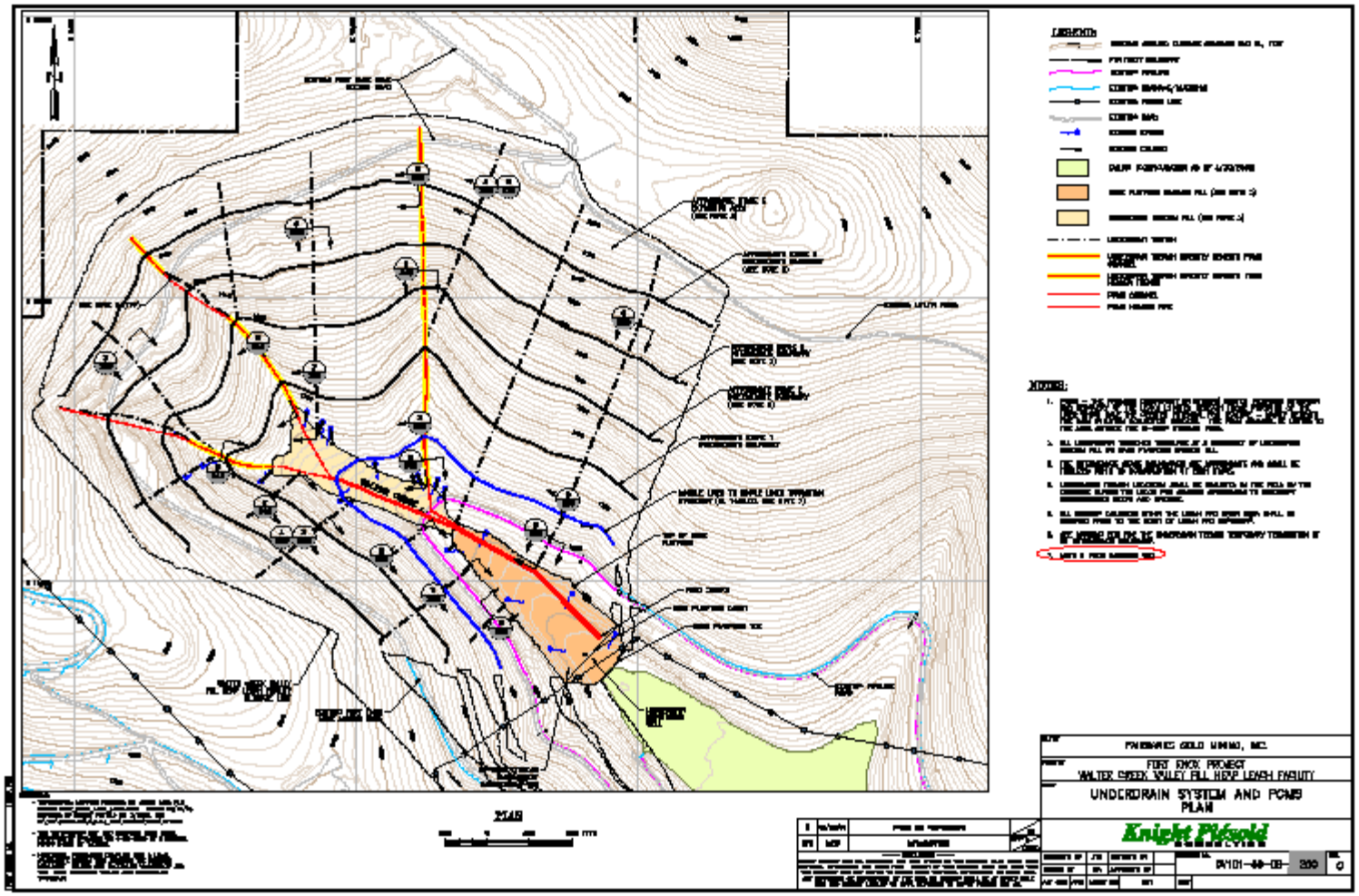
# 5 FACILITY MAP AND HEAP LEACH DIAGRAMS

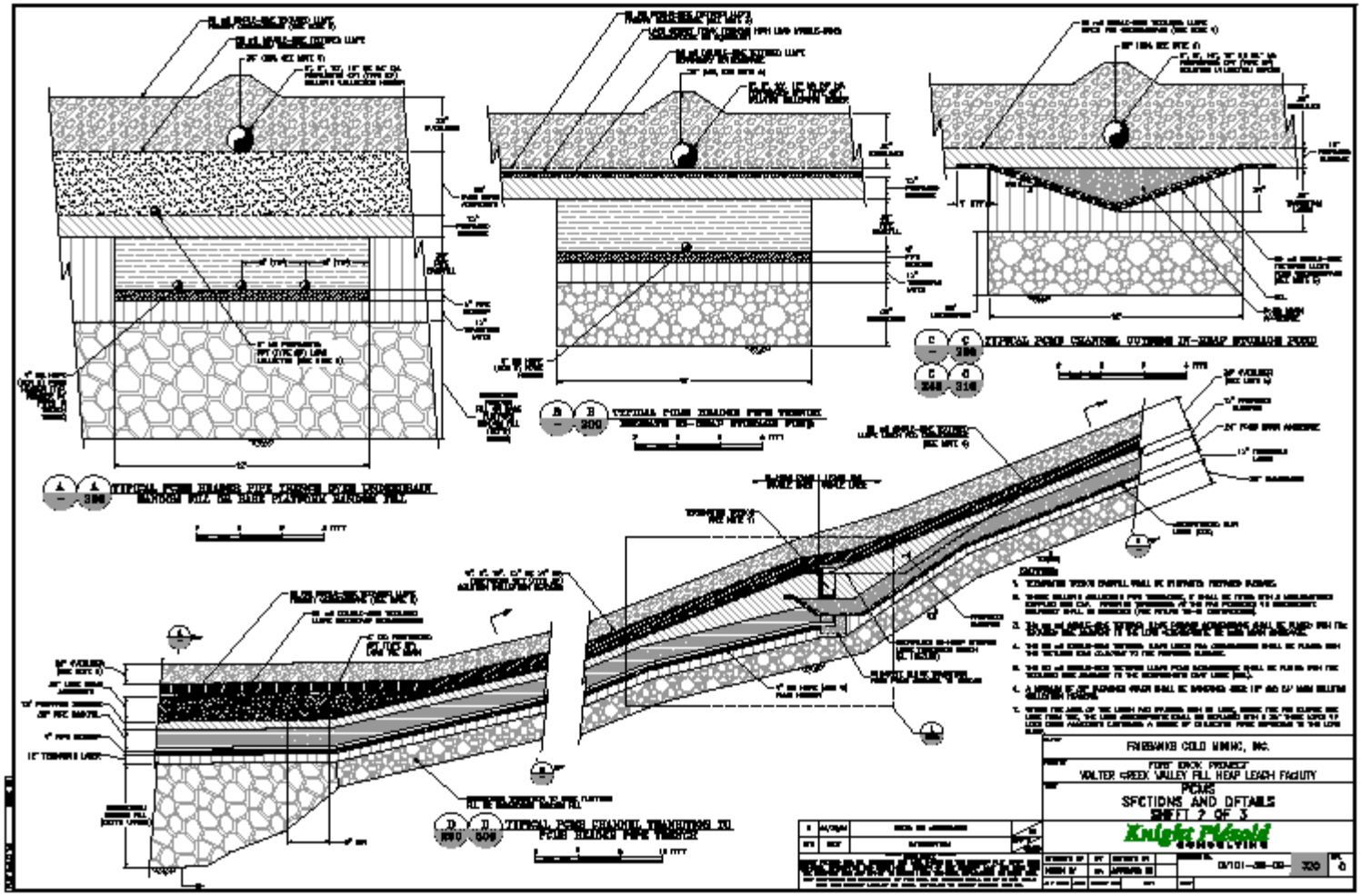


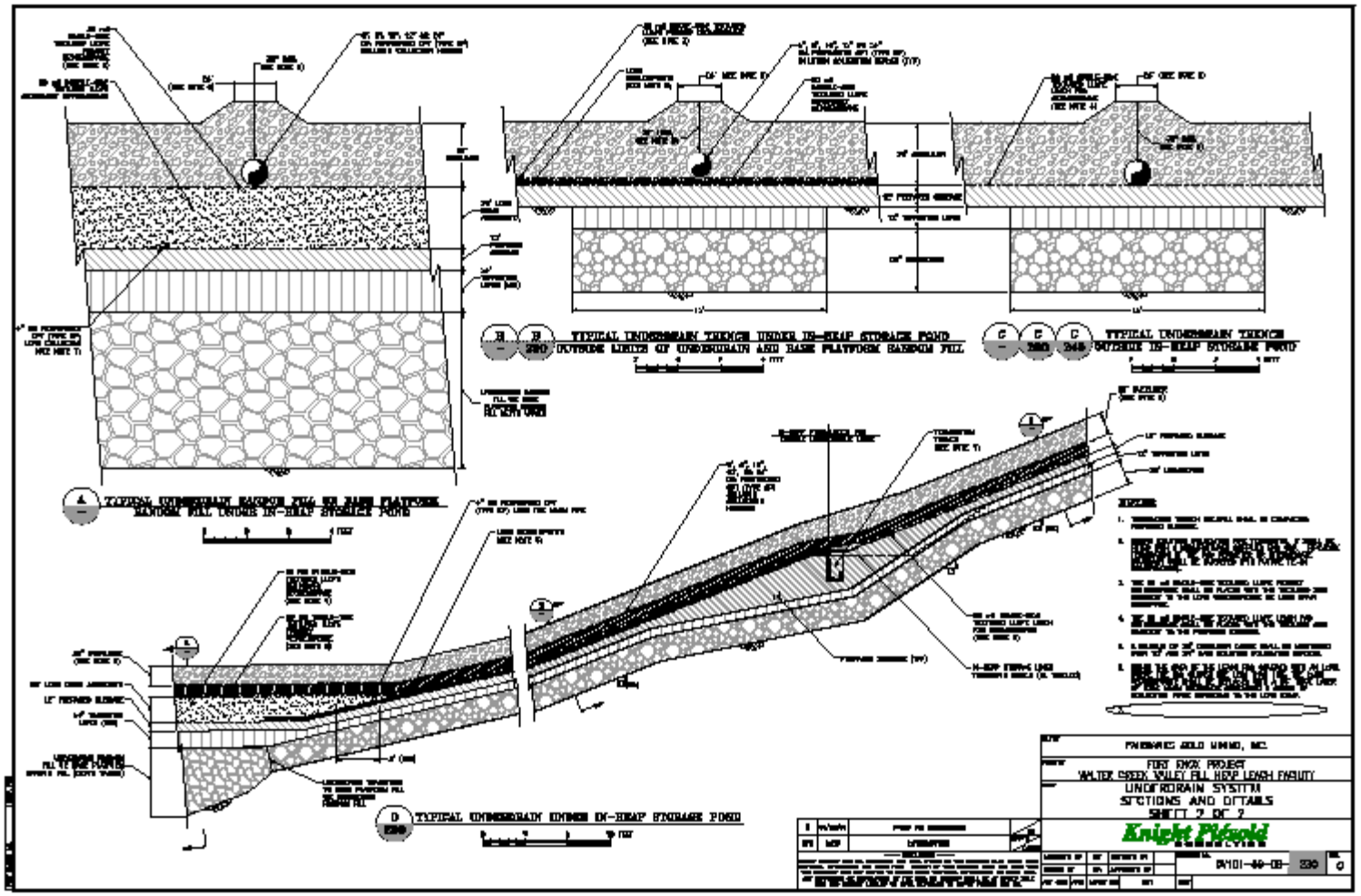

FAIRBANKS GOLD MINING, INC.
FORT KNOX PROJECT
WALTER CREEK VALLEY FILL HEAP LEACH FACILITY
GENERAL ARRANGEMENT
PLAN SHOWING AREA OF LOAD DOUBLE LINER


FORT KNOX
BASE PLATFORM AND
HEAP STORAGE EMBANKEMNT
FIGURE 3.1


LCRS
FIGURE 3.4


FAIRBANKS GOLD MINING, INC.
FORT KNOX PROJECT
WALTER CREEK VALLEY FILL HDPE LEACH FACILITY
UNDERDRAIN SYSTEM AND PCMS PLAN
Knight Piésold
CONSULTING


FAIRBANKS GOLD MINING, INC.
FORT KNOX PROJECT
WALTER CREEK VALLEY FILL HEAP LEACH FACILITY
PCWS
SECTIONS AND DETAILS
SHEET 7 OF 9
Knight Piésold
CONSULTING


TYPICAL UNDERDRAIN TRENCH UNDER IN-HEAP STORAGE POND
OUTSIDE LIMITS OF UNDERDRAIN AND BASE PLATFORM RANDOM FILL
TYPICAL UNDERDRAIN TRENCH
OUTSIDE IN-HEAP STORAGE POND
TYPICAL UNDERDRAIN RANDOM FILL OR BASE PLATFORM
RANDOM FILL UNDER IN-HEAP STORAGE POND
TYPICAL UNDERDRAIN TRENCH UNDER IN-HEAP STORAGE POND
FAIRBANKS GOLD MINING, INC.
FORT KNOX PROJECT
WALTER CREEK VALLEY FILL HEAP LEACH FACILITY
UNDERDRAIN SYSTEM
SECTIONS AND DETAILS
SHEET 2 OF 2
Knight Piésold
CONSULTING
PA101-00-DB-