BGC ENGINEERING INC.
AN APPLIED EARTH SCIENCES COMPANY

DELOITTE AND TOUCHE INC.

ANVIL RANGE PROPERTY, YT

EMERGENCY RESPONSE PLAN FOR:

INTERMEDIATE DAM
CROSS VALLEY DAM
LITTLE CREEK DAM
FARO CREEK DIVERSION CHANNEL
ROSE CREEK DIVERSION CHANNEL
VANGORDA CREEK DIVERSION FLUME

FINAL

PROJECT NO.: 0257-053-01
DATE: NOVEMBER 20, 2008

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BGC ENGINEERING INC.
AN APPLIED EARTH SCIENCES COMPANY

200–1121 Centre Street N.W.
Calgary, Alberta
Canada T2E 7K6
Tel: (403) 250-5185
Fax: (403) 250-5330

Project No.: 0257-053-01
November 20, 2008

Mr. Doug Sedgwick - Director, Environmental Services
Deloitte and Touche Inc., as Interim Receiver for
Anvil Range Mining Corporation
Second Floor, 30 Wellington Street West
Toronto, ON M5K 1B9

RE: EMERGENCY RESPONSE PLAN FOR
DAMS AND WATER DIVERSION STRUCTURES AT THE FARO MINE, YT

Dear Mr. Sedgwick:

Please find attached 2 copies of the report entitled: Emergency Response Plan for: Intermediate Dam, Cross Valley Dam, Little Creek Dam, Faro Creek Diversion Channel, Rose Creek Diversion Channel and Vangorda Creek Diversion Flume. Additional copies of this report have been submitted in accordance with the distribution list on the front cover. This updated version of the previously submitted Emergency Preparedness Plan (EPP) (2003) has undergone significant changes, both in structure and in content.

Klohn Crippen Berger Limited (KCB) conducted a Dam Safety Review (DSR) of the dams at the Faro mine site in 2007. The DSR recommended that the EPP be updated, as it was largely the same since 2003. The previous EPP was a hybrid which included information needed in an EPP and an Emergency Response Plan (ERP). An ERP provides information guiding the response of site staff in an emergency at site. An EPP provides information to responders from the affected community. This new version has been written as an ERP and is designed for site staff, not external users.

Should you have any questions or comments, please do not hesitate to contact me at the number listed above.

Yours truly,
BGC Engineering Inc.
per:

Gerry Ferris, M.Sc. P.Eng
Geotechnical Engineer

Enclosure: Final report

GWF/sf

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LIMITATIONS OF REPORT

BGC Engineering Inc. (BGC) prepared this report for the account of Deloitte and Touche, the interim receiver for Anvil Range Mining Corporation. The material in it reflects the judgment of BGC staff in light of the information available to BGC at the time of report preparation. Any use which a third party makes of this report, or any reliance on decisions to be based on it are the responsibility of such third parties. BGC accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report.

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1.0 PURPOSE

The purpose of this document is to provide an Emergency Response Plan (ERP) for the following dams and diversion structures on the Anvil Range property, located near Faro, YT as shown in Figure 1. :

- Intermediate Dam located proximal to the Rose Creek Diversion Channel, shown on Figure 2
- Cross Valley Dam located immediately downstream from the Intermediate Dam, shown on Figure 2.
- Little Creek Dam located on the Vangorda Plateau, just below the Vangorda rock dump, as shown on Figure 3.
- Vangorda Creek Diversion Flume located north east of Vangorda Pit, shown on Figure 3.
- Rose Creek Diversion Channel (RCDC) located south of the tailings impoundment, which includes the Intermediate and Cross Valley Dams, as shown on Figure 2.
- Faro Creek Diversion Channel located to the north of the Faro Main Pit, shown on Figure 2.

This ERP is written for the operations staff of Anvil Range Mining Corporation (ARMC) and is to be used in the event of an emergency affecting any of the above listed dams and diversion structures.

2.0 INCIDENT LEVEL CRITERIA

Incidents may be categorized into those that threaten the safety of the dams and the channels and those that do not. Incidents that threaten the safety of the dams and the channels are the focus of this ERP. Potential incidents can be classified into three levels of action:

- Alert Level.
- Emergency Level.
- Failure Level.

Further explanation of each of these categories is provided in the following sections.

Alert Level:

- The alert level is the first or lowest level of action for a given incident. This level of action is assigned to typical operations and maintenance conditions and is dealt with under the OMS manual. No external (off mine-site) notification is required. Response to incidents is done internally under the protocols provided in the OMS Manual. Typical incidents that may be observed at the alert level may include the following:
    - seasonal frost cracking at the crest of a dam,
    - minor seepage,
    - piezometric response to changing reservoir levels,
    - minor erosion gullies due to runoff, and
    - spillway flowing at design capacity with no erosion.

- The OMS manual provides guidelines and protocols for prompting action in dealing with these "routine" incidents and system failures that can be easily and quickly corrected or repaired. Some of these incidents, if ignored, may develop into emergency situations that must be dealt with outside of the normal scope of OMS activities. The OMS Manual identifies the "trigger levels" or thresholds at which the ERP plan is put into action.
- As part of this documentation a record should be kept of the Alert Level incidents that occur on the site. This record can then be used to understand how often incidents occur on site for understanding of the performance of the system and potentially resetting the alert levels in the future.

Emergency Level:

- The emergency level is the first level of potential danger to dam and channel safety to be assigned to an unusual event or condition, which would result in an immediate and significant threat to the safety of the structure and would therefore involve activation of the ERP. The ERP addresses emergency situations that require actions outside the normal scope of OMS activities to correct. External communication, according to the notification procedure outlined in Figure 4, is required to mobilize the resources and response required to eliminate the threat to the structure. Immediate action would be required to plan and execute remedial action and repairs. The required remedial measures and actions should be initiated and completed in sufficient time to eliminate the immediate threat, or prevent it from getting worse.
- The incident level may be downgraded from emergency to alert level or upgraded to failure level, depending on the change in conditions at the structure or as new information or analysis becomes available.

Failure Level:

- At failure level, the incident has progressed to the point where failure of the structure is imminent. A failure level incident would require immediate notification of any downstream area by means of the general and local warning systems. The failure level response (as outlined in Figure 4) should be implemented immediately upon verification of the conditions that a dam is failing or about to fail, or as a precautionary measure when there is uncertainty whether the dam may fail, but there is a significant probability that it will.
- Any emergency repair measure that has some potential to avert, delay or retard the rate of failure should be initiated. In addition, measures for post-failure monitoring and assessment should be initiated.

3.0 EMERGENCY IDENTIFICATION

3.1 Dam Overtopping

3.1.1 Identification

Water enters the reservoir exceeding the capacity of the spillway or reservoir storage and flows over the top of the dam. This may be due to an extreme flood event, blockage of the spillway, failure of a perimeter by-pass system or external creek diversion, failure of a beaver dam or a landslide generated wave. In some cases, the reservoir operating levels may have become exceeded due to poor operational control, resulting in reduced storage capacity. Wave action under reduced freeboard conditions may result also in overtopping and erosion. System failure of a mine water reclaim system due to mechanical problems, power outage, pipeline rupture or sinking of pump barge may also lead to a hazardous rise in water levels.

An extreme precipitation event or extreme snowfall accompanied by rapid melting or a combination of both will usually result in a rapid rise in pond levels, which may exceed design capacities. If these conditions exist or are in the forecast, visual inspection of all reservoir levels and assessment of snowpack depth and density or rainfall amount should be conducted to assess pond capacity.

3.1.2 Incident Levels

Alert Level:

- Reservoir level is greater than the full supply level but lower than the top of the core of the dam, i.e., the emergency spillway is operating but within design limits.

Emergency Level:

- Reservoir level begins to rise above the top of the core of the dam but is less than the crest elevation. The emergency spillway is in operation, but beyond its design limit.

Failure Level:

- Water is flowing over the crest of the dam, outside of the emergency spillway. Failure of the dam is imminent.

3.2 Dam Embankment Instability

3.2.1 Identification

Appearance of tension cracks on the crest or downstream face of dam, development of a headscarp with vertical or horizontal displacement or both and bulging of the dam face. Visual inspection of the dam crest and both faces and toe areas is the best method of detection as the zone of failure may not be covered by instrumentation installed in the dam. Changes in pore pressures may also be indicative of instability. A significant warming trend in thermistor readings may signal that some type of instability is occurring within the dam. A significant change in the seepage quality at weir monitoring locations may also be a concern.

Embankment instability may occur following a rapid drop in reservoir water levels, an earthquake event, an extreme precipitation or rapid snowmelt event or a significant change in operating practices. These events should trigger an immediate visual inspection of the embankment.

3.2.2 Incident Levels

Alert Level:

- Appearance of new cracks or the opening of existing cracks in crest or faces of dam. Significant warming trend in thermistors, increasing pore pressures in piezometers or high one-time reading from a single piezometer.

Emergency Level:

- New cracks continue to grow in length and width, and the displacement increases. Thermistor data continues to show warming trend (or increasing extent), piezometric levels continue to rise, other instruments in dam begin to show these effects indicating a growing condition. Headscarp is located on downstream face of dam. Toe bulges are noted.

Failure Level:

- Continued and accelerating displacements and development of new cracks. Head scarp reaches dam crest or breaches upstream side of dam. All instabilities on upstream face of dam are considered potential failure level conditions.

3.3 Piping

3.3.1 Identification

Seepage water visibly coloured by suspended sediment, typically occurring at localized exit points on the downstream face or toe in excessive or abnormal quantities. Seepage may also be visible in the dam foundation abutment and toe areas downstream of the dam itself. Due to the high seepage gradient, a cavity or "pipe" develops at the location of the exit point, which gradually progresses in an upstream direction along the seepage path. As it progresses, the rate of seepage and amount of transported sediment will increase, potentially leading to a breach of the dam.

Therefore, visual inspection of the entire dam, noting the location of seepage points and water quality on a regular basis is crucial to establishing a baseline by which abnormal conditions, that may develop over time and are associated with piping, can be recognized. Any seepage showing turbidity or suspended sediment should not be ignored.

3.3.2 Incident Levels

Alert Level:

- Increased piezometric levels in piezometers near the downstream toe.
- Appearance of new seepage discharge locations.
- Increase in the measured seepage, if not associated with new precipitation or raised reservoir levels.

Emergency Level:

- Any change from clear seepage to seepage containing suspended sediment or turbidity.
- Development of surface depressions or sinkholes on upstream face of dam or base of reservoir upstream of dam. These may be visible if the water is clear and not too deep, or may become apparent if reservoir levels have been lowered.
- Development of "boils" or cavities on downstream side of dam or in foundation downstream of dam, which remain relatively stable or in equilibrium with flow.

Failure Level:

- Progressive or rapid development or enlargement of boils or soil cavities, leading to uncontrolled seepage flows increasing in flow rate and amount of transported sediment.
- May be associated with slope instabilities due to erosion of materials by high gradient seepage flow.
- Formation of settlement troughs between reservoir and seepage points.
- Entire reservoir may be discharged through pipe cavity, without breaching of dam, or pipe may progress upgradient with increasing erosion leading to dam breach and release of remaining reservoir due to overtopping of this local area.

3.4 Seismic Instability and Large Earthquake Events

3.4.1 Identification

Any seismic event that is felt by the on-site staff warrants an immediate visual inspection of all significant water-retaining structures and reading of all the piezometers and weir flows. The Natural Resources Canada (NRCAN) Pacific Geoscience Centre (PGC), located in Sidney, B.C., and operated by the Geological Survey of Canada (GSC), monitors earthquake activity around the world and includes virtually real-time information on earthquake activity in western Canada. This information is available on their website at earthquakescanada.nrcan.gc.ca. Site staff can obtain information updates regarding distant events as well as reporting local events.

3.4.2 Incident Levels

Alert Level:

- An earthquake event is felt at site or in the town of Faro.
- Based on the PGC the earthquake magnitude is greater than 3 and within 100 km of the site.

Emergency Level:

- An earthquake that is felt at site or in the town of Faro.
- Based on the PGC the earthquake magnitude is greater than 4.5 and within 100 km of the site.
- Damages are visible following this event, but landslides or settlement do not result in a failure mode.

Failure Level:

- The maximum credible earthquake occurs, this is a magnitude 7.5 earthquake within 45 km of the site.
- Alternatively if physical damage is noticed in the visual inspection of a smaller scale earthquake.

3.5 Channel Overtopping

3.5.1 Identification

Channel overtopping occurs when the water level in the channel exceeds the level of the banks, either due to flood events larger than design values or due to blockage of the channel. The resulting spill of water from the Faro or Vangorda diversion channel would enter the pit and become non-compliant due to the ambient levels of metals contamination and overall pit water quality. As a result, additional quantities of water must be treated before they can be released into the environment. In a worst case scenario, the overtopping event could continue to fill the pits until the capacity of the pit is exceeded and non-compliant water begins to be released from the pit.

An overtopping event at the Rose Creek Diversion would spill into the tailings area and has the potential to result in overtopping of the Dams, or at least result in a release of non-compliant water over the emergency spillways.

3.5.2 Incident Levels

Alert Level:

- For the Rose Creek Diversion the alert level is reached when the water reaches the 50 year flood level or 0.5 m below the crest of the Diversion.
- For the Faro Creek Diversion the alert level is reached when the water is 0.8 m below the crest of the road.
- For the Vangorda Diversion alert level is reached when the overall flume is more than 1/3 full.

Emergency Level:

- For the Rose Creek Diversion emergency incident level is defined by the water being within 0.25 m of the road level or if water is flowing over the emergency overflow at the diversion dam (adjacent to the secondary tailings dam).
- For the Faro Creek Diversion the emergency incident level is reached if the water level is within 0.2 m of overtopping the road.
- For the Vangorda Diversion the emergency level is reached if the overall flume is 2/3 full.

Failure Level:

- Is reached for all diversions when the water begins to overtop the containment berm.

3.6 Channel Slope Instability

3.6.1 Identification

Instability may occur within the channel banks, the slopes above the channel and the slopes below the channel (pit slopes). Instability may occur in rock or soil materials. In general, rock slope instability is governed by the presence of discontinuities, which are oriented to permit movement towards the open channel cut. Where the diversion channel is located along the rim of an excavated open pit, the stability of the channel is dependent on the rock mass forming the pit walls. Rockfalls from the slopes above the channel may partially block the channel. If the size of the rock is large enough to remain stable under the ambient flow in the channel, the blockage will remain and degrade channel capacity. Large rockfalls or slides may completely block the channel, and may lead to overtopping upstream of the blockage.

Soil slope instability usually occurs in the form of mudflows, rotational, block or retrogressive slides. In most cases, the source of these instabilities will be from the overburden overlying bedrock on the slopes above the channel. It should be noted that a portion of the Faro Creek Diversion Channel passes through overburden, which forms a portion of the channel sides adjacent to the Faro Pit, a recognized area of concern, which has undergone previous attempts at remediation. Small soil slumps into the channel may be washed away, resulting in only temporary impairment of channel capacity. Larger slides may completely block a channel, leading very quickly to an overtopping situation upstream of the slide.

Overburden instability may occur relatively rapidly (mudflows) or slowly depending on a wide variety of influencing factors. In general, slope stability decreases during periods of high ground water, such as during the spring melt, or during periods of sustained precipitation. Inspection of slopes must be done regularly to identify cracks, scarps, slope bulging toe bulging or other signs of deformation that indicate instability.

3.6.2 Incident Levels

Alert Level:

- Slumping occurs on the downhill side of the diversion, but does not affect the road.
- New tension cracks in either of the slopes above or below the diversions.
- Minor rockfall occurs of a few smaller fragments
- Evidence of shear displacements in the SI casings.

Emergency Level:

- Tension cracks open within the road surface adjacent to the diversion, cracks are either parallel or perpendicular to the channel.
- Large slump of material occurs on the downstream side of the road adjacent to the diversion that takes up part of the road surface.
- Material is deposited into the channel, filling about 1/3 of its overall section.

Failure Level:

- Slumping or rock falls from above lead to overtopping of the channel.
- Slumping on the downhill side of the diversion removes the downhill wall of the channel.

4.0 EMERGENCY AND FAILURE RESPONSE PLANS

The identification of incident levels that lead to implementation of the ERP are described in Section 3.0. This section describes the response actions that will be required by on-site staff to carry out emergency operations and repairs for each of the failure modes. Potential constraints on action plan implementation are discussed in Section 5. The required notification plans referred to in this section are described in detail in Section 6. The equipment, operators, supplies and materials required for implementation of the response plan are listed in Section 7. Some of the response actions involve obtaining and placing rock and soil materials. Figures 5, 6 and 7 show the locations of soil and rock borrow areas within the mine site area. It is recommended that these various sources be verified in terms of quality and quantity of materials so that the site is aware of the sources that can be used in the event of an emergency. There may be a need to establish stockpiles of some materials in areas close to the dams.

For the scenarios discussed further in these sections, it has been assumed that despite reaching the "Failure Level" the loss of the dam or channel has not yet occurred. Thus the recommendations that follow for the failure level are actions that can be used to save the complete loss from occurring. If a complete loss does occur, actions by site staff should be directed to ensure that no injuries occur, minimize the loss of the structure experiencing failure and thereby minimize the damages (on site and also off site environmental degradation).

4.1 Dam Overtopping

Emergency Level:

- Execute Emergency Notification Plan (as outlined in Figure 4).
- Lower pond levels with siphons, pumps or both. Spill reporting will be required if water quality is non-compliant.
- Attempt to increase spillway capacity by clearing out accumulated debris, widening existing spillway or cutting a new notch, with rockfill protection, through an abutment area to preserve integrity of embankment.
- Maintain 24-hour/day vigilance of pond levels until levels are restored to below maximum operating levels as defined in OMS Manual for this structure.
- Visually inspect dam for erosion and deformation.
- Repair affected areas as recommended by Geotechnical Consultant.

Failure Level:

- Execute Failure Notification Plan (as outlined in Figure 4).
- Lower pond levels with pumps, siphons or both. Spill reporting will be required if water quality is non-compliant.

- Continue attempts to increase spillway capacity by clearing out accumulated debris, widening existing spillway or cutting a new notch, with rockfill protection, through an abutment area to preserve integrity of embankment.
- Maintain 24-hour/day vigilance of pond levels, until water levels are restored to below maximum operating levels as defined in OMS Manual for this structure.
- Visually inspect dam for erosion and deformation damage.
- Repair affected areas of dam as per recommendations of Geotechnical Consultant.

4.2 Dam Embankment Instability

Emergency Level:

- Execute Emergency Notification Plan (as outlined in Figure 4).
- Lower pond levels using siphons, pumps or both. Spill reporting will be required if water quality is non-compliant.
- Initiate daily inspections and readings of all instruments, or as required by the Geotechnical Consultant.
- Undertake remedial repairs as recommended by Geotechnical Consultant. Likely response will be construction of a stabilizing berm at the toe of the dam. Preparations should begin to haul rockfill.

Failure Level:

- Execute Failure Notification Plan (as outlined in Figure 4).
- Lower pond levels using siphons, pumps or both. Spill reporting will be required if water quality is non-compliant.
- Maintain 24-hour/day vigilance of structure as directed by Geotechnical Consultant.
- Undertake remedial construction as recommended by Geotechnical Consultant. Likely response will be construction of a stabilizing berm at the toe of the dam.

4.3 Piping

Emergency Level:

- Execute Emergency Notification Plan (as outlined in Figure 4).
- Lower reservoir level with pumps, siphons or both. Spill reporting will be required if water quality is non-compliant.
- For an isolated, relatively low head seep, construct a sand bag dike enclosure around the zone of seepage to contain the flow and reduce the head difference.
- Initiate daily readings of all instrumentation or as directed by Geotechnical Consultant.
- Construct inverted filter (sand and rockfill) on the seepage area at the toe as directed by Geotechnical Consultant.
- Dump impervious fill (till) into any sinkholes observed on the upstream side that are in the reservoir.
- Repair or construct upstream impervious liner as directed by Geotechnical Consultant.
- Maintain 24-hour/day vigilance of dam until remedial repairs have been completed.

Failure Level:

- Execute Failure Notification Plan (as outlined in Figure 4).
- Lower reservoir level with pumps, siphons or both. Spill reporting will be required if water quality is non-compliant.
- Dump rockfill or waste rock from nearest dump across downstream toe, covering the zone of seepage to a depth equal to at least one-half the maximum depth of the water in the reservoir.
- Undertake remedial repairs as recommended by Geotechnical Consultant.
- Maintain 24-hour/day vigilance of dam until remedial repairs are completed.

4.4 Seismicity Instability and Large Earthquake Events

Emergency Level:

- Execute Emergency Notification Plan (as outlined in Figure 4).
- Lower the reservoir using pumps and siphons.
- Conduct visual inspection of dam and report to Geotechnical Consultant.
- Initiate daily reading of all instrumentation.
- Undertake remedial repairs as recommended by post-event inspection by Geotechnical Consultant.

Failure Level:

- Execute Failure Notification Plan (as outlined in Figure 4).
- Lower reservoir levels using pumps, siphons or both. Spill reporting will be required if water quality is non-compliant.
- Conduct visual inspection of dam and report to Geotechnical Consultant.
- Undertake remedial repairs based on post-event inspection by Geotechnical Consultant.

4.5 Channel Overtopping

Emergency Level:

- Execute Emergency Notification Plan (as outlined in Figure 4).
- Place crushed rock, rockfill or gravel into areas of erosion and low bank areas to maintain freeboard.
- If water level is high due to channel blockage, attempt to remove obstruction. Consider possible diversion of channel flow to allow construction to proceed.
- Maintain on-going, visual inspection of pit water levels and begin planning for emergency operation of pit dewatering system. If pumping is initiated, monitor flow rates.
- Consider potential options for excavating a controlled breach to reduce flows in channel temporarily, especially if excess water can be maintained in a compliant state.

Failure Level:

- Execute Failure Notification Plan (as outlined in Figure 4).
- Execute controlled breach or continue to place rockfill into overflow area to reduce quantities of water being discharged.

- If overtopping due to channel blockage, attempt to remove obstruction. Plan for temporary channel diversion of channel flow to allow removal of debris in channel to proceed.
- Maintain continuous (24/7) watch over channel condition.
- Maintain on-going, visual inspection of pit water levels and begin planning for emergency operation of pit dewatering system. If pumping is initiated, monitor flow rates.
- Geotechnical Consultant to conduct inspection and recommend repairs.

4.6 Channel Slope Instability

Emergency Level:

- Execute Emergency Notification Plan (as outlined in Figure 4).
- Check safety of remaining slopes and channel before entering and undertaking remedial work.
- Consider temporary diversion of channel flow to allow construction access.
- Remove debris from channel and stabilize the area around the failed slope by flattening slope, cutting ditches to improve drainage.
- Place rockfill as required to prevent further erosion and undercutting in critical areas.
- Overall pit wall instability could affect the channel section. Likely that a temporary diversion of channel flow would be required. Contact Geotechnical Consultant for directions on stabilizing options.
- Maintain daily visual inspection of conditions along channel.
- Maintain on-going, visual inspection of pit water levels and begin planning for emergency operation of pit dewatering system. If pumping is initiated, monitor flow rates.

Failure Level:

- Execute Failure Notification Plan (as outlined in Figure 4).
- Ensure personal safety and the safety of adjacent critical structures.
- Consider options for controlled breach to prevent overtopping if channel becomes blocked.
- Contact Geotechnical Consultant for advice regarding immediate stabilization options, which involve removal of unstable materials or placing rockfill to stabilize the downstream retention dike.
- Excavate failed material from channel to restore channel capacity.
- Geotechnical Consultant to conduct inspection and recommend repairs.
- Maintain on-going, visual inspection of pit water levels and begin planning for emergency operation of pit dewatering system. If pumping is initiated, monitor flow rates.

5.0 POTENTIAL CONSTRAINTS ON RESPONSE PLAN IMPLEMENTATION

5.1 Access Roads

Primary access to the mine site from the Town of Faro is by a 23 km long road leading to the main gate at the mill and office area. Site security staff mans the main gate. Procedures are in place to log in all persons entering the mill and mining area. These procedures include receiving management (Interim Receiver) authorization, sign-in and waiver requirements and having the required personal safety equipment for the intended areas and activities. These procedures will remain in place through 2008 (Gartner Lee, 2003), with amendments as required from time to time to control access into the mine site and to minimize risks to the public and worker safety.

The Yukon Government has maintained the main access road since 2006 to allow summer and winter access to a standard for the safe passage of heavy loads, such as float trucks used to move heavy equipment. Maintenance activities have included localized resurfacing, grading, patching, steaming culverts and snow clearing. These activities are expected to continue through to 2008 in accordance with activities at the mine site (Gartner Lee, 2003). Winter snow clearing may not be required during the winter, or a portion thereof, when no activities are underway or planned at the mine site (Gartner Lee, 2003).

Access by road is possible to all dams from the main gate area and is maintained by the Interim Receiver. Figure 1 shows a plan of the site access roads for the entire Anvil Range property. Road access from the main gate to the Vangorda Plateau mine site is via the 13 km long heavy haul road. This road must be maintained to the same standard as the mine access road from Faro to ensure safe passage of heavy loads on float trucks. Road access from the Town of Faro to the Vangorda Plateau mine site has been blocked since 1998, except for brief periods when special protocols were implemented to allow direct access for contractor work (Gartner Lee, 2003). Access will be similarly restricted through to 2008 (Gartner Lee, 2003).

Other access roads that will remain blocked to public vehicular traffic through 2008 include the Blind Creek road to the Vangorda Plateau mine site and the fuel truck ramp to the heavy haul road (Gartner Lee, 2003). The ATV crossing of the haul road will be maintained as accessible in order to allow First Nations and recreational access to the land upslope of the haul road.

Access to the north crest of the Intermediate Dam is obtained by driving down and across the Intermediate Dam spillway and then up the retention dike of the downstream side of the spillway. As a result, during a flood event, access will not be possible from this side of the valley. Access to both the toe and the crest of this dam is also possible from top of the canal dike (of the RCDC) along two access roads downstream of the south abutment. The access road to the crest of the south abutment was recently constructed as required for grading of the crest and the downstream face.

During a flood event, similar access constraints exist for the Cross Valley Dam. The crest is accessed from the toe area and access to the toe exists from the north side but across the bottom portion of the spillway discharge (that passes through two culverts). If the spillway discharge is too high, and the culverts have been eroded, access to the toe would have to occur from the south side along the RCDC access road/dike crest. It should be noted that there is no direct access to the south abutment crest from the RCDC dike crest.

Access to the Little Creek Dam occurs from the main access road traveling to the Vangorda Pit. The access road is the crest of the dam and the access could be compromised if the crest is unstable or being overtopped. Access is also possible along the east and south sides of the Vangorda rock dump onto the south abutment of the dam.

Access to the FCDC is generally from the access road on Faro Northeast rock dumps and then west along the dike crest on the downstream side of the diversion channel. Access for heavy equipment is also possible from the north via the Northwest rock dumps and old exploration roads that pass around the north site of the main pit to the upstream end of the FCDC. This access is passable by light vehicles and equipment but is a very rough access for dump trucks, but it is passable.

Access to the VCDF exists from two directions; both of which are both commonly used and of good quality. The "bottom end" is accessed from the main haul road and then uphill along the western side of the Vangorda Pit along the dike crest access road. The "top end" is accessed via the Water Treatment Plant/Grum Interceptor Ditch access road that crosses Vangorda Creek via the headworks collection dam.

In the summer, roads are passable by 2-wheel drive vehicles. During the winter, roads must be maintained by ploughing to permit vehicle access. Four-wheel drive vehicles are required in the winter due to drifting snow that may cover portions of the road, even after ploughing.

The critical period for most dams and diversions is in the spring, when snowmelt in combination with rainfall has the potential to create extreme flood conditions. During this period, access roads may be at risk of washing out, due to erosion, culvert failure or exceedance of culvert capacity. Culvert capacity may become diminished due to icing, snow or blockage by debris.

Loss of road access is a serious concern, since it will delay or prevent inspection of dam and channel facilities and the repair of any damage that has occurred. Under the site wide ERP, the contingency plan that is already in place includes the following (Gartner Lee 2003):

- Use snowmobiles in the winter when the snow is not ploughed from all roads.
- Maintain a grader, plough truck, front-end loader and gravel truck on-site or maintain contact with off-site contractors for emergency provision of road repair services.
- Aggressively steam ice from culverts and clear ice from roadside ditches through the winter and spring as required to maintain flow and prevent road washout.

5.2 Power and Communications

5.2.1 Power

The Faro site is connected to the Whitehorse-Aishihik-Faro Grid via a 38 kV power line, as shown on Figure 2. Transformers are located at the Faro Mill, which steps down the power for on-site distribution. A standby diesel generator is available to provide emergency power supply. The Vangorda Plateau site is connected to the Faro Mill by a 27 kV overhead power line, as shown on Figure 3. This line feeds a 4160-volt distribution system for the Grum and Vangorda Mine site, which is mounted on single log poles. A distribution of 4167-volt lines feeds power to various substations around the site where temporary ground lines are used to connect to equipment (Gartner Lee, 2003)

A general loss of power could occur at the mine site if the Whitehorse-Aishihik-Faro hydroelectric power grid were to fail as a result of a local or regional disruption or accident. In this event, all site operations would shut down except those that are powered by a portable on-site generator such as the Intermediate Pond lime treatment system and the Little Creek Dam pump (Gartner Lee, 2003). The major project equipment that would be shut down in this event includes the following (Gartner Lee, 2003):

- Main Pit pumping;
- Zone 2 Pit pumping;
- Vangorda Pit pumping;
- Mill water treatment system;
- Grum/Vangorda water treatment plant.

Previous experience has demonstrated that the regional power supplier has restored power quickly. The contingency plan at the site provides for two alternate power sources in the event of an imminent environmental emergency:

- The Town of Faro diesel generator.
- The Onan generator that can power the guard house, welding and repair shop and diesel dispenser.

The contingency plan requires that in the case of a general loss of power, the following steps be followed (Gartner Lee, 2003):

- Conduct an operational check of equipment status such that equipment is configured appropriately for restart.
- Contact regional power supplier to confirm status and ascertain restart timeframe.
- Arrange with regional power supplier to re-instate power to the mine from the Town of Faro diesel generator if an environmental emergency was imminent.
- Maintain on-site emergency generator that can be utilized in an environmental emergency situation.

5.2.2 Communications

The mine site is connected by a microwave phone system installed in 2003 along with a site radio system that is operated site wide through a repeater system. The two systems are connected into Northwestel located in the Town of Faro. The electronics are located at the CKRW shack located behind the recreation centre in Town and transmitted to the mine site via an antenna system located on Rose hill and further transmitted to the guardhouse. Each system is equipped with back up emergency power in the event of a power outage and will remain running (approx. 6 to 12 hrs).

The handheld portable radios are connected into cellular service for emergency purposes and employees can dial out utilizing the keypads on the radios within the foot print of the mine area.

Satellite internet is also available on site located at the guard house and a dedicated VOIP line (line 7) is also available in the event the phone system has a total failure other than loss of power.

The Guest House's are also equipped through Northwestel with phones/fax machines and internet.

5.3 Darkness

During the winter, the length of daylight hours at the mine site may be less than 6 hours. During the summer, daylight may extend for 24 hours, with a minimal light equivalent to twilight conditions for a short period.

The darkness factor increases the difficulty in responding to emergency events during the winter, when combined with the potential for extreme cold and snow conditions characteristic of the regional climate. Available outside lighting sources will be extremely limited, especially at the dam sites, being restricted to that provided by vehicles and portable flashlights. As noted in Table 4, portable light-plants may be required to support response plans. There are no light plants on site and they should be obtained for use in an emergency.

- Recommend that light plants be purchased, for use at various sites and should be portable.

The site security area, Norcan shop area and fuel stations are lit during emergencies. Depending on the emergency, additional areas can be activated.

5.4 Snow Cover

During the winter, snow cover on access roads and dams and structures will severely hamper emergency response. A cleared roadway is required before heavy equipment can be transported on a float trucks, as discussed above in Section 5.1. In an emergency, access by mine staff can be made with snowmobiles or possibly helicopters (if available) to provide preliminary assessment of conditions and to initiate appropriate emergency response measures, including notification of stakeholders.

In general, site activities will be limited during the winter due to the logistical constraints associated with snow cover and maintenance of access. Winter activities such as the excavation of frozen material from borrow sources may be very difficult if the moisture levels are high. Extensive depths of snow cover actually insulate the subsurface and may assist with the prevention of hard, frozen conditions.

Winter is also a time when the risk to dam structures is low, due to reduced water levels, channel flows and frozen conditions. The most critical period is the spring, when snow storms may coincide with high water levels during the break up period. The contingency measures listed in Section 5.1 above should be followed or augmented to suit specific structures that may be at risk.

6.0 NOTIFICATION PLAN

6.1 Emergency Level vs. Failure Level

Activation of the ERP will be done when incident levels for any of the potential failure modes reach the emergency level condition, as described in Section 3.0. The site-wide ERP (Deloitte, 2003) provides the notification responsibilities for any emergency incident. The ERP procedure defines the lines of communication between the mine site staff and Interim Receiver and the notification of outside agencies and stakeholders by the Interim Receiver.

The main distinction between the Emergency Level and Failure Level notification procedures is the degree of involvement of outside agencies. Figure 4 is a decision-based illustration of the steps in the notification plan from the perspective of the first on-scene individual. The decision path format provides a guide for notification for the following incident levels:

- Observation of an incident at the Emergency Level.
- Observation of an incident at the Emergency Level, which progresses to the Failure Level.
- Observation of an incident at the Failure Level.

For all incident levels, the first response is to ensure personal safety and the safety of others. This may require erecting barricades, warning indicators or posting guards to prevent or control access while notifying the Anvil Range Site Manager.

For an Emergency Level incident, notification is primarily internal, within the mine site and the Interim Receiver, except when non-compliant water must be released. Releases of non-compliant water require reporting to the Yukon Spill Line. Implement the Emergency Response Plan(s) for the appropriate failure mode(s) as outlined in Section 3.

If the incident progresses from the Emergency Level to the Failure Level, external notification of all downstream interests and external emergency response organizations is required by the Anvil Range Site Manager, who will also contact the Interim Receiver. The Interim Receiver will notify relevant stakeholders as required by the ERP notification procedure.

If the incident is immediately recognized as a Failure Level condition, the initial observer should notify the Site Manager, who will then assess and implement notification of all downstream interests and external emergency response organizations (fire, police, medical) so that they can initiate their own emergency response plans to deal with the situation as soon as possible. The Site Manager will then contact the Interim Receiver, who in turn will contact the appropriate external agencies. The Site Manager will then contact the Technical Consultant and implement the Failure Response Plan(s) outlined in Section 3.

6.2 Contacts

Appendix II provides the contact list compiled at the mine site. The following are the key contacts for notification when the ERP is implemented:

6.2.1 Internal Site Staff and Deloitte and Touche Inc. (Interim Receiver)

Anvil Range Staff:

Site Security	(867) 994-2315 Ext. 105
Dana Haggar	(867) 994-2315 (w)
	(867) 994-2647 (h)
Mike Bryson	(867) 994-2315 (w)
	(867) 994-2579 (h)
Rhonda Haggar	(867) 994-2315 (w)
	(867) 994-2647 (h)
Craig McKinnon	(867) 994-2315 (w)
	(867) 994-2500 (h)
Dan Duivenvoorden	(867) 994-2315 (w)
	(867) 994-3111 (h)
Ken Alderson	(867) 994-2315 (w)
	(867) 994-3223 (h)

Deloitte and Touche Inc. (Interim Receiver):

Wes Treleavan	(416) 601-4482 (w)
Alternate Contact #1- Doug Sedgwick	(416) 643-8034 (w)
	(416) 236-9193 (h)
Alternate Contact #2- Greg Stevens	(403) 267-1724 (w)
Alternate Contact #3- Valerie Chort	(416) 601-6147 (w)

6.2.2 Emergency Response Agencies

Faro Fire Department	(867) 994-2222
Faro Nursing Station	(867) 994-2157 or (867) 994-4444
Faro RCMP	(867) 994-2677 or (867) 994-5555
Faro Ambulance Service	(867) 994-2673 or (867) 994-4444
Faro Municipal Airport	(867) 994-2791
YTG Report a Fire Line	(888) 798-FIRE (3473)

6.2.3 Key Technical Consultants

Table 1 Key Technical Consultant Contact Information

Geotechnical (Faro)	Gerry Ferris	BGC	(403) 250-5185 Ext 101 (w) (403) 228-1077 (h) (403) 815-6513 (C)
Geotechnical – Alternate (Faro)	Holger Hartmaier	BGC	(403) 250-5185 Ext 113 (w) (403) 938-5941 (h) (403) 863-6301 (C)
Geotechnical (Vangorda and Grum)	Peter Healey	SRK	(604) 601-8420 (w) (604) 985-6751 (h) (778) 668-6751 (C)
Geotechnical – Alternate (Vangorda and Grum)	Cam Scott	SRK	(604) 601-8425 (w) (604) 267-1166 (H)
Environmental	Greg Bull	AECOM	(867) 633-6474 (w)
Environmental - Alternate	Jay Cherian Elise Babyn	AECOM	(867) 633-6474 (w)
Environmental Engineering	Leslie Gomm	Gomm Environmental	(867) 334-7237

6.2.4 Regulators

YTG 24 Hour Spill Report Hotline	(867) 667-7244
Yukon Health and Safety Board 24 Hour Emergency Line	(867) 667-5450
Chief Mine Inspector	(867) 667-5450
DIAND Chief Water Inspector	(867) 667-3217
YTG Type II Management Team	(867) 667-3360

7.0 RESPONSE PLAN RESOURCES

For the various response plans reviewed herein, manpower, mobile equipment, supplies and support will be required on site. The following section therefore outlines the mobile equipment that is available at the Anvil Range Property, and from other sources in the proximal area. In addition, a suggested list of materials and supplies is also provided so that site staff can determine their existing on-site inventory and to determine if additional supplies are required.

At the current time, the following mobile equipment is located at the Anvil Range site:

- Earth Moving
  - Cat 16G grader;
  - Cat D9 dozer:
  - Cat D5 dozer
  - Cat 345 excavator
  - Cat 235 excavator;
  - Link-Belt 460LX excavator;

  - Volvo L220E loader;
  - Case 4WD 580SM extendable backhoe loader;
  - Terex TA25 Dump truck
  - Two highway-rated dump trucks and
  - Heavy equipment float and tractor.
- Lifting
  - P&H 115 ton mobile crane;
  - P&H 40 ton mobile crane;
  - Cat forklift;
  - Kalmar forklift;
  - Two Kenworth tandem-axle Hiab crane truck
- Generators
  - Cat 285 kW diesel genset;
  - Cummins/Onan 300 kW diesel genset and
  - Various small portable gasoline generators.
- Miscellaneous equipment
  - Two trailer mounted Enviro-fuel tanks;
  - Ingersol Rand Packer
  - Various rock and sand screens
  - Two 4WD ATV's;
  - Two snowmobiles;
  - One medical response vehicle
  - Fire truck;
  - Various 4WD light trucks;
  - Various flat deck utility trailers;
  - Gorman/Rupp Duetz diesel water pump;
  - Four 30 hp Flyte electric water pumps;
  - Various small pumps;
  - Hand held radios and
  - Radio-telephones.

Site staff should be familiar with the equipment since they use it on a regular basis. It is assumed that all of this equipment is properly maintained and "certified" for use, as in the case of cranes. It is also assumed that operators for this equipment are located in the Town of Faro, although contacting staff may be problematic at short notice and during weekends and holidays. Cranes require the use of certified operators, which may not be immediately available following an emergency incident. A contact list for operators and staff should be maintained and included within the site ERP document. A partial list of site staff is provided in Appendix II.

The Town of Faro and the YTG road maintenance yard have additional equipment such as graders, water truck, 966 loaders, compactors and various dump trucks. On a regular basis external contractors are on site. Use of this equipment or equipment from the Town of Faro or YTG can be considered if available.

Local contractors in the Faro-Ross River area and other Yukon based contractors can provide a variety of equipment to supplement the mine equipment on site. Since contractors' capabilities may change with time and new contractors may come into the area, site staff should undertake at least an annual review of local contractors capabilities and inspect the equipment in their yards. This document does not endorse use of any of the particular contractors named below or limit the selection to those listed. The names given below are given for reference only, and should be verified on a regular basis.

Two contractors in Ross River are potentially able to supply the following equipment:

1. Clifford McLeod Contracting, Phone 867-969-2364
    - 1985&88 Western Star dump trucks;
    - Cat 966C loader;
    - Cat 225 excavator;
    - Cat D6D dozer;
    - Grader - size unknown; and
    - Other miscellaneous light-duty mobile equipment.
2. Tim Moon Construction, Phone 867-969-2519
    - Three Cat 235 excavators (or equivalent);
    - Cat D8 and D6 dozers;
    - Cat 14G grader;
    - Cat 966 loader (or equivalent); and
    - Other miscellaneous light-duty mobile equipment.

In addition to these two local contractors, there are two major contractors in the Yukon Territory that have worked extensively at Faro Mine and have extensive suites of mining and heavy hauling equipment. These two contractors include the following:

1. Golden Hill Ventures Ltd
   Whitehorse, YT Y1A 3V7
   Phone: 867-668-7807
   Fax: 867-668-7762

2. Pelly Construction Ltd.
   Whitehorse, YT Y1A 2T7
   Phone: 867-667-6161

Each of the contractors may have some equipment within the Faro regional area and they should be contacted if response plans dictate the need for their resources, which may include operators for the equipment.

For all equipment, fuel and oil will be required for their operation. It is assumed that an appropriate amount of both is located on site and that additional required amounts can be moved from the Town of Faro.

In addition to mobile equipment and operators, equipment, materials and supplies will be required to implement the various response plans reviewed earlier. Table 2 outlines some of the potential requirements:

Table 2 Potential Equipment, Materials and Supplies for Emergency Response

Article	Purpose	Commentary/Location
Rip rap	Repair of eroded areas and protection of channels and dam faces.	Cobbles and boulders exist in the granular borrow areas: • North Fork Rose Creek Quarry • west of the Cross Valley Dam and • in the quarry area at the Vangorda dump. A stockpile of angular riprap is located both near the Faro Valley Dumps on the Faro Side of the property and at the Grum quarry on the Vangorda side of the property. Old rockfill quarries are located on the south side of the RCDC. Extensive amounts of rip rap would be problematic. Large fragments from the rock dumps could be possibly used, but material may be acid-generating. Figures 5, 6 and 7 provide more detailed information.
Rockfill and general fill	Backfill for settled areas. Construction of access roads, pads, dikes and buttress berms.	As noted above. Borrow pits also located along the mine site access road coming from the Town of Faro. Large amounts of till located on the Vangorda Plateau with accessible amounts overlooking the Vangorda Pit slopes. Figures 5, 6 and 7 provide more detailed information.
Sand	Required for bedding and covering of liners. May be required for filters and drainage layers.	Granular borrow areas as noted above. Significant granular deposits located just above the north abutment of the Intermediate Dam. If critical, tailings could also be used but metals leaching and ARD concerns would result. Figures 5, 6 and 7 provide more detailed information.
Geotextile	Required for separation and/or filtration for filters and drainage layers.	Relatively heavy-duty non-woven geotextile would likely be required for separation purposes. 10 rolls of inventory currently at site.

Article	Purpose	Commentary/Location
Geocomposite liner (GCL)	Required to control seepage by reducing seepage input and leakage from channels.	GCL products are named Bentofix and Bentomat and are installed with overlapping seams only. Powdered bentonite required for seam overlaps. 15 rolls of Bentomat currently at site. Additionally on site are 1.5 rolls of Asphalt Liner and 1 roll of "enviro" liner.
Siphon pipes	Required to lower pond levels rapidly when so needed.	Various lengths of 8, 16, 20 and 24-inch plastic pipe located on site. Starting siphon pipes requires valves or cranes to fill the pipe ends. In addition, small suction pumps and pipe tie-in locations required to evacuate trapped air.
Light plants	Required to assist night time operations and operations during winter time periods	Three light plants will be required at site, one should be dedicated to the guardhouse, one mounted on wheels for towing and the other to be man-portable. These need to be purchased.
Pumps	Required to handle and transfer water and to remove air from siphon pipes.	Various types and sizes of pumps will be required. Pumps will need to be portable and hence gasoline or diesel driven may be the most useful, dependent upon electrical services in the area.

As introduced in Section 4.4, frozen material with higher moisture levels (e.g., till and sand versus riprap) will be difficult to excavate from borrow pits. Consideration should be given to developing stockpiles of material that would allow some drainage to occur, hopefully preventing hard, frozen conditions. If rainfall occurs immediately preceding snowfall and freeze-up, even stockpiles may be frozen solid. Figures 5, 6 and 7 show the location of rock and soil borrow sites in the mine site area.

For several of the noted materials and equipment, site staff should undertake an inventory of the current quantities and conditions. If additional quantities are required, then they should be sourced, delivered and stored appropriately at site.

8.0 RECOMMENDATIONS FOR ADDITIONAL WORK

8.1 Site Staff Training on ERP Content

Copies of the ERP must be distributed by the site manager to appropriate site staff who will also be responsible for ensuring that site staff are trained appropriately and have the latest version. The telephone numbers and names of contact persons should be updated on a regular basis; at least annually as noted by CDA (2007).

Training is necessary to ensure that all mine site personnel as well as individuals involved in the ERP are thoroughly familiar with all the elements of the ERP, the availability of equipment and their responsibilities and duties. Mine site staff that may have limited geotechnical and dam experience, should be trained in identification of problems, evaluation and selection of appropriate remedial measures for all incident levels. The training needs to cover all levels of responsibility, beginning with on-site observations through to site management and Interim Receiver personnel. Training should cover a sufficient number of people to ensure adequate coverage at all times (CDA, 2007). The training seminar can be put on CD for the training of new staff. This is an on-going requirement.

8.2 Site Drill for Emergency Response

An important component of the ERP is testing the plan through site drills to ensure that the contents of the document and the training of the individuals and involved parties are adequate (CDA, 2007). Initially, testing can be done as a table-top exercise to review the identification and initial response to various incident levels. Larger scale simulations should include notification of external emergency response agencies and regulators and full-scale emergency simulations including multiple failure events. The purpose of these simulations is to identify problems with communications, resources and logistics so that deficiencies in the ERP and an associated EPP can be improved. An important component in the simulation drills is to give the site staff the experience and confidence with respect to dealing with emergencies and having a good understanding of the time involved in responding to various incidents.

8.3 Borrow Materials

As outlined in Section 3, some of the response measures will require placing various types of fill materials such as till, sand and gravel, crushed rock and rockfill. Figures 5, 6 and 7 show the locations of various soils and rock borrow areas and quantities around the mine site area. An assessment should be made to determine the need for creating stockpiles of various materials close to dams, so that they will be readily available in case of an emergency. Consideration needs to be given to ensuring that the material is thermally protected from becoming frozen and remains in a dry or drained condition at all times.

8.4 Light Plants

As mentioned in section 7, three light plants should be purchased to aid in the response measures. One light plant to be used at the guard house, one that is wheel mounted to be moved by truck, and one that is man-portable.

8.5 Secondary Tailings Dam

In order to have a site wide ERP that includes all Dams that present a significant hazard, the ERP should be updated to include the Secondary Tailings Dam in the next revisions of the manual. The Secondary Tailings Dam contains dry tailings from the primary and secondary impoundments.

9.0 CLOSURE

This ERP has been prepared for the Intermediate, Cross Valley and Little Creek Dams and the two main pit diversion channels at Faro and Vangorda as well as the Rose Creek Diversion. This ERP should be considered to be a "living document" that must be constantly reviewed and updated to reflect current site conditions and information. At a minimum the equipment lists and contact should be updated yearly.

We trust that this information meets with your requirements at this time. Please do not hesitate to contact the undersigned if you have any questions or require additional information.

Respectfully submitted,
BGC ENGINEERING INC.
Per:

Ashton Friesen, EIT
Mining Engineer

PROFESSIONAL ENGINEER
YUKON TERRITORY
GERALD FERRIS
NOV. 25, 2008

Gerry Ferris, M.Sc., P.Eng.
Geotechnical Engineer

Reviewed By:

Holger Hartmaier, M.Eng., P.Eng. (AB)
Senior Geotechnical Engineer

PERMIT TO PRACTICE
Signature
Date NOV. 25, 2008
PERMIT NUMBER: PP092
Association of Professional Engineers of Yukon

10.0 REFERENCES

BGC Engineering Inc. 2001. Qualitative Risk Assessment of the Down Valley Tailings Area, Faro Mine, Yukon. Report submitted to Deloitte and Touche Inc., Project No. 0257-004, November 2001.

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Gartner Lee Limited 2003. 2004-2008 Water Licence Renewal Application Report, Anvil Range Mining Corporation (Interim Receivership), Prepared May 2003.

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Klohn Crippen Berger Ltd. 2008 Anvil Range Mining Complex 2007 Dam Safety Review for Cross Valley, Intermediate and Little Creek Dams. Report submitted to Deloitte and Touche Inc., March 2008.

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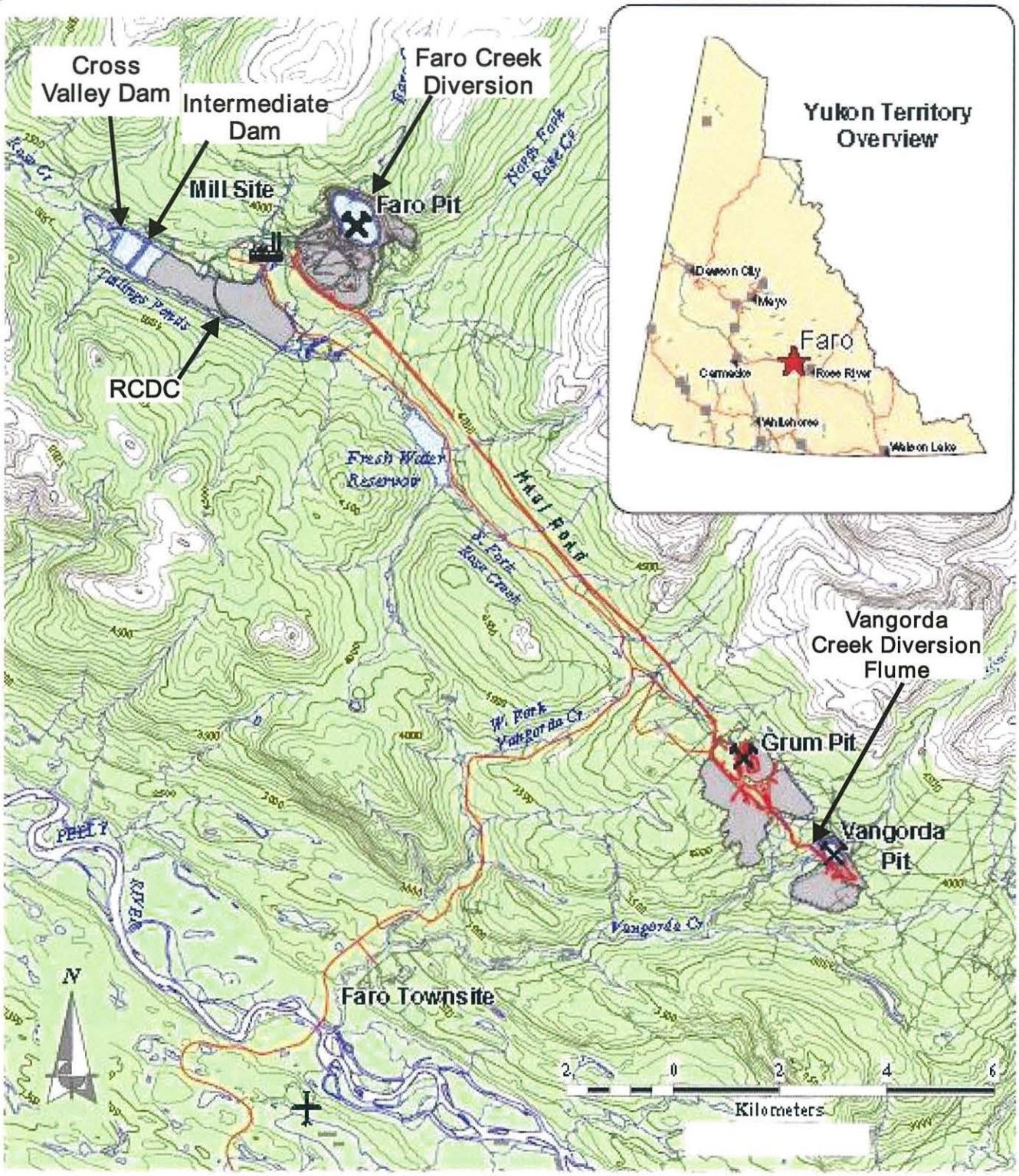
FIGURES



Note: Base map figure provided by Gartner Lee Limited

SCALE:	AS SHOWN	DESIGNED:	ALF
DATE:	NOVEMBER 2008	CHECKED:	GWF
DRAWN:	SLF	APPROVED:	HHH

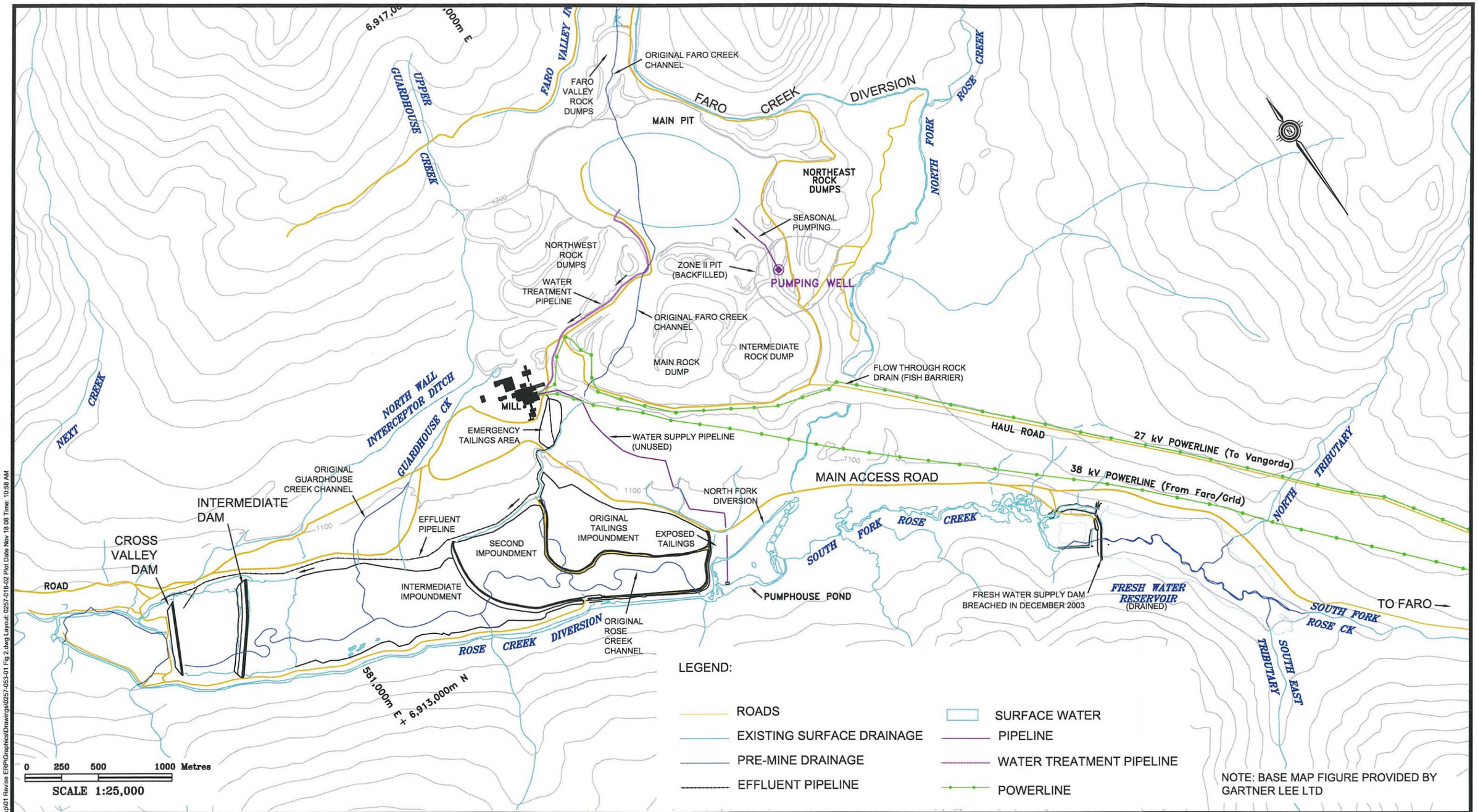
BGC ENGINEERING INC.
AN APPLIED EARTH SCIENCES COMPANY

PROJECT:
ANVIL RANGE ERP FOR DAMS AND WATER DIVERSION STRUCTURES

TITLE:
SITE LOCATION PLAN

CLIENT: Deloitte & Touche

PROJECT No.:	FIGURE No.:	REV.:
0257-053-01	1	0



REV.	DATE	REVISION NOTES	DRAWN	CHECK	APPR.

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DATE:	NOV 2008
DRAWN:	JL
DESIGNED:	ALF
CHECKED:	GWF
APPROVED:	HHH

PROFESSIONAL SEAL:

BGC ENGINEERING INC.
AN APPLIED EARTH SCIENCES COMPANY

CLIENT: Deloitte & Touche

PROJECT: ANVIL RANGE ERP FOR DAMS AND WATER DIVERSION STRUCTURES

TITLE: FARO MINE SITE OVERVIEW

PROJECT No.:	FIG No.	REV.:
0257-053-01	2	0

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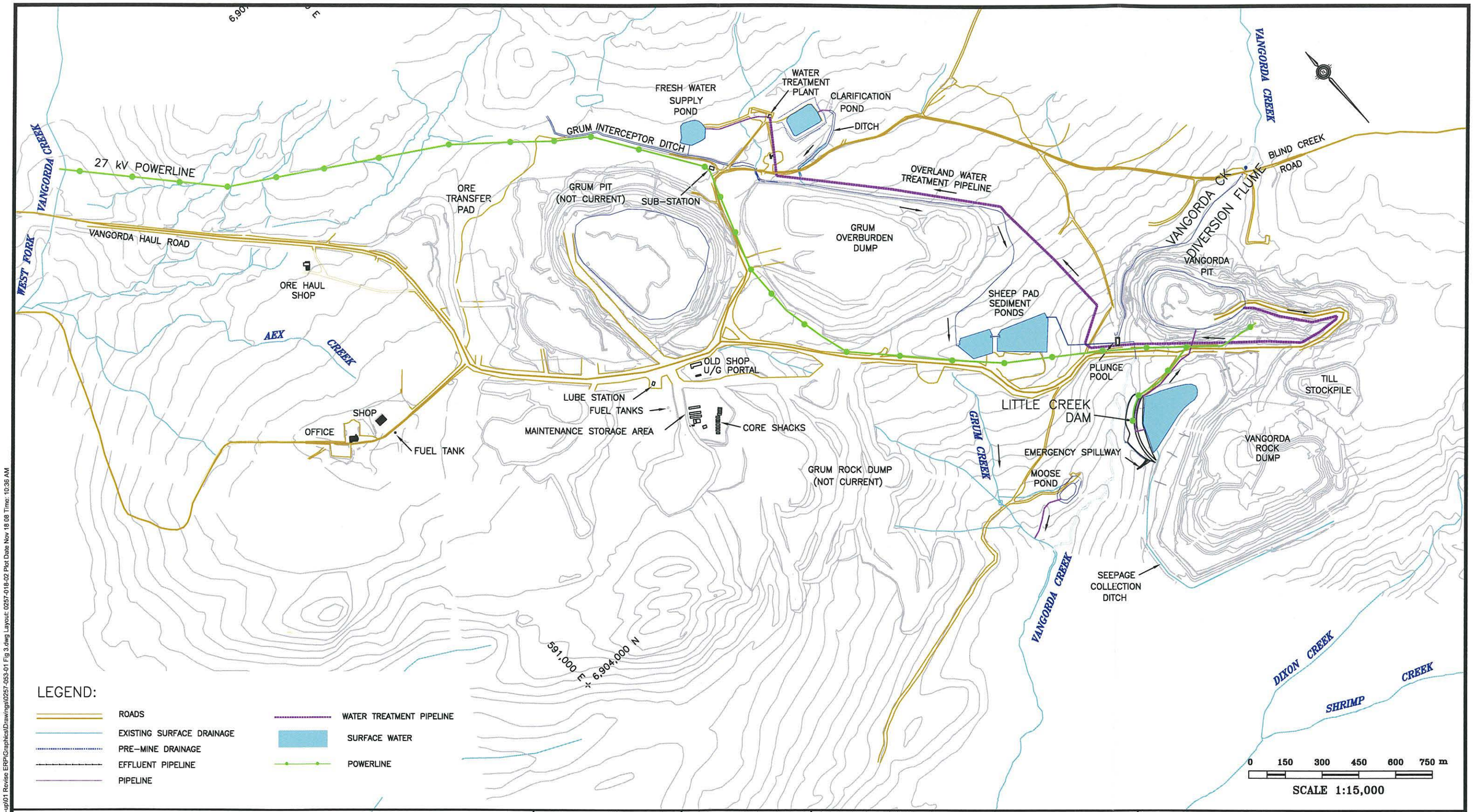

REV.	DATE	REVISION NOTES	DRAWN	CHECK	APPR.

SCALE:	AS SHOWN
DATE:	NOV 2008
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DESIGNED:	ALF
CHECKED:	GWF
APPROVED:	HHH

PROFESSIONAL SEAL:

BGC ENGINEERING INC.
AN APPLIED EARTH SCIENCES COMPANY

CLIENT: Deloitte & Touche

PROJECT: ANVIL RANGE ERP FOR DAMS AND WATER DIVERSION STRUCTURES

TITLE: VANGORDA PLATEAU MINE SITE OVERVIEW

PROJECT No.:	FIG No.	REV.:
0257-053-01	3	0

DWG TO BE READ WITH BGC MEMO TITLED " A REPORT TITLE" DATED SEPT 2007

K:\Projects\0257 D&T\053 Dam Safety Follow-up\01 Revise ERP\Graphics\Drawings\0257-053-01 Fig 3.dwg Layout: 0257-018-02 Plot Date Nov 18 08 Time: 10:36 AM

Notes:
Contact numbers for:
Anvil Range Staff
Deloitte and Touch
Downstream interests are located in Appendix A.
All contacts numbers for the parties on this sheet are located in Section 6.2 of the main report.

OBSERVED EMERGENCY OR FAILURE INCIDENT

ENSURE PERSONAL SAFETY AND THE SAFETY OF OTHERS

CONTACT ANVIL RANGE SITE MANAGER OR ALTERNATIVE

CONTACT DELOITTE AND TOUCHE

EMERGENCY OR FAILURE INCIDENT

Failure Incident

NOTIFY ALL DOWNSTREAM INTERESTS

CONTACT KEY TECHNICAL CONSULTANT

IMPLEMENT FAILURE RESPONSE PLAN

Emergency Incident

CONTACT DELOITTE AND TOUCHE

CONTACT KEY TECHNICAL CONSULTANT

4

SPILLING NON COMPLIANT WATER TO ENVIRONMENT

Yes

REGULATIONS

No

IMPLEMENT EMERGENCY RESPONSE PLAN

DOES INCIDENT PROGRESS TO FAILURE LEVEL

Yes

No

MONITORING INCIDENT UNTIL NORMAL CONDITION RETURN

SCALE:	N/A	DESIGNED:	ALF
DATE:	NOVEMBER 2008	CHECKED:	GWF
DRAWN:	SLF	APPROVED:	HHH

BGC ENGINEERING INC.
AN APPLIED EARTH SCIENCES COMPANY

CLIENT: Deloitte & Touche

PROJECT: ANVIL RANGE ERP FOR DAMS & WATER DIVERSION STRUCTURES

TITLE: DECISION PATH FOR SITE PERSONNEL

PROJECT No.:	FIGURE No.:	REV.:
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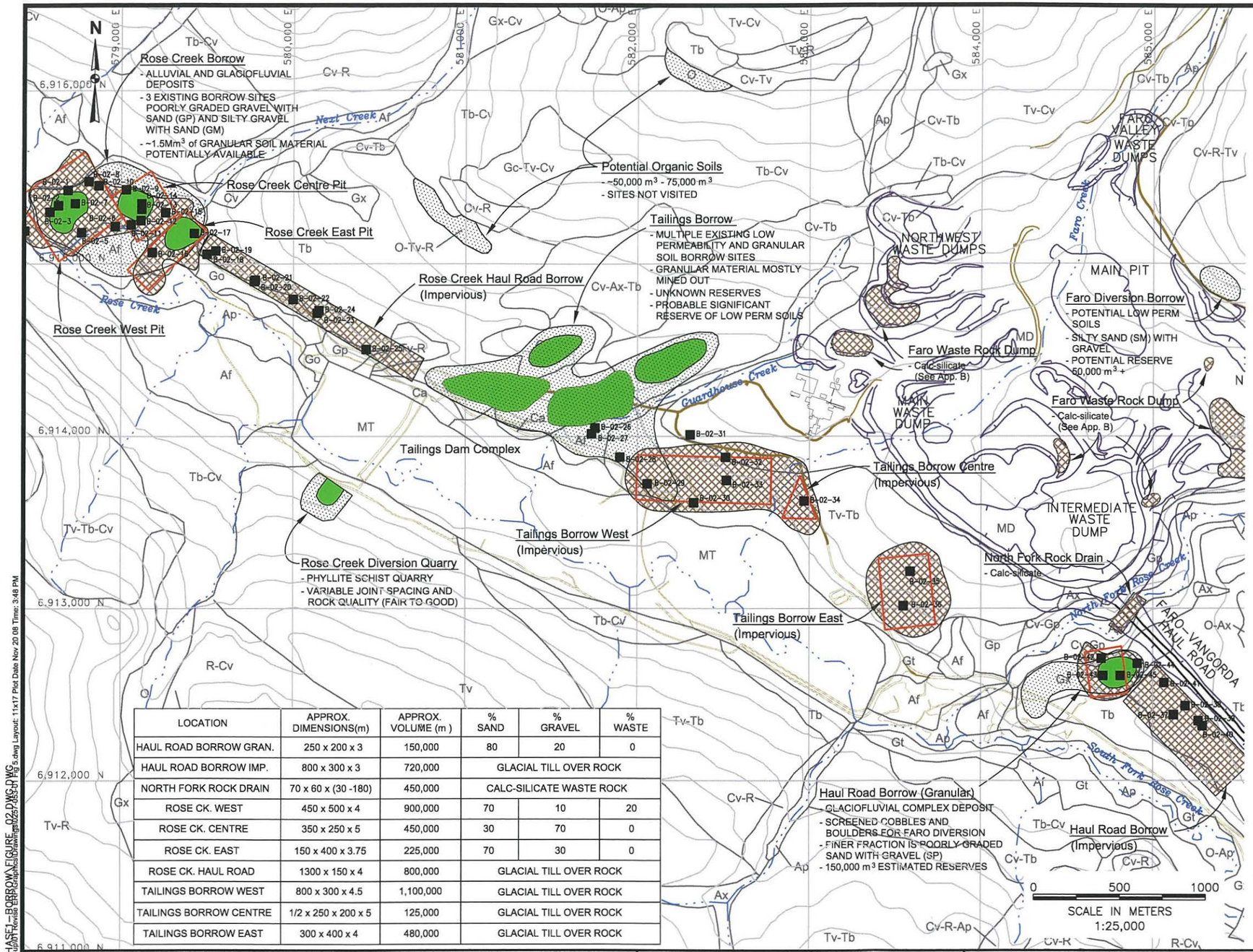

LOCATION	APPROX. DIMENSIONS(m)	APPROX. VOLUME (m)	% SAND	% GRAVEL	% WASTE
HAUL ROAD BORROW GRAN.	250 x 200 x 3	150,000	80	20	0
HAUL ROAD BORROW IMP.	800 x 300 x 3	720,000	GLACIAL TILL OVER ROCK		
NORTH FORK ROCK DRAIN	70 x 60 x (30 -180)	450,000	CALC-SILICATE WASTE ROCK		
ROSE CK. WEST	450 x 500 x 4	900,000	70	10	20
ROSE CK. CENTRE	350 x 250 x 5	450,000	30	70	0
ROSE CK. EAST	150 x 400 x 3.75	225,000	70	30	0
ROSE CK. HAUL ROAD	1300 x 150 x 4	800,000	GLACIAL TILL OVER ROCK		
TAILINGS BORROW WEST	800 x 300 x 4.5	1,100,000	GLACIAL TILL OVER ROCK		
TAILINGS BORROW CENTRE	1/2 x 250 x 200 x 5	125,000	GLACIAL TILL OVER ROCK		
TAILINGS BORROW EAST	300 x 400 x 4	480,000	GLACIAL TILL OVER ROCK		

LEGEND (from Bond, 1999)

QUATERNARY

HOLOCENE

MINE DISTURBANCE

MD- mine disturbance; consisting of an open-pit and stripped till and bedrock accumulations. Bedrock and surficial sediments exposed in open-pit.

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Ax - complexes of Ap and Af undivided. Common when a stream is unconfined and also in narrow valleys where side-entry alluvial fans cannot be differentiated from an alluvial plain.

PLEISTOCENE AND HOLOCENE (UNDIVIDED)

COLLUVIAL DEPOSITS

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Lb - glaciolacustrine blanket; 1- 40 m thick.

GLACIOFLUVIAL DEPOSITS

Gp - glaciofluvial plain; 3 - 10 m thick.

Gt - glaciofluvial terrace; <10 m thick.

Gx - glaciofluvial complex; 1 - 30 m thick, composed of deposits of outwash, glaciolacustrine and minor till deposited in an ice contact environment. Hummocky topography is associated with this depositional setting. Crevasse fillings were mapped in the upper part of Vangorda Creek valley.

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LOWER CAMBRIAN TO CRETACEOUS

BEDROCK

R - bedrock; common on plateau summits and ridges on Mt. Mye and Sheep Mountain.

- EXISTING QUARRY OR BORROW
- POTENTIAL QUARRY OR BORROW
- AREA IDENTIFIED IN PHASE 1 (REJECTED IN PHASE 2)
- MINE INFRASTRUCTURE
- EXISTING ACCESS ROAD
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REFERENCE

ORIGINAL MAP: SRK (2003) FIGURE 4

BOND, J.D. (OPEN FILE 1999-8)

SURFICIAL GEOLOGY MAP OF MOUNT MYE AND FARO (105K/3&6 W), CENTRAL YUKON TERRITORY

REV.	DATE	REVISION NOTES	DRAWN	CHECK	APPR.

SCALE:	AS SHOWN
DATE:	NOV 2008
DRAWN:	JL
DESIGNED:	ALF
CHECKED:	GWF
APPROVED:	HHH

PROFESSIONAL SEAL:

BGC ENGINEERING INC.
AN APPLIED EARTH SCIENCES COMPANY

CLIENT: Deloitte & Touche

PROJECT: ANVIL RANGE ERP FOR DAMS AND WATER DIVERSION STRUCTURES

TITLE: FARO MINE SITE - SURFICIAL GEOLOGY SOIL AND ROCK BORROW LOCATIONS

PROJECT No.:	FIGURE No.	REV.:
0257-053-01	5	0

K:\Projects\0257 dir\053 Dam Safety Follow-up\Flowing ERP\Drawings\0257-053-01 Fig 5.dwg Layout: 11x17 Plot Date: Nov 20 08 Time: 3:48 PM
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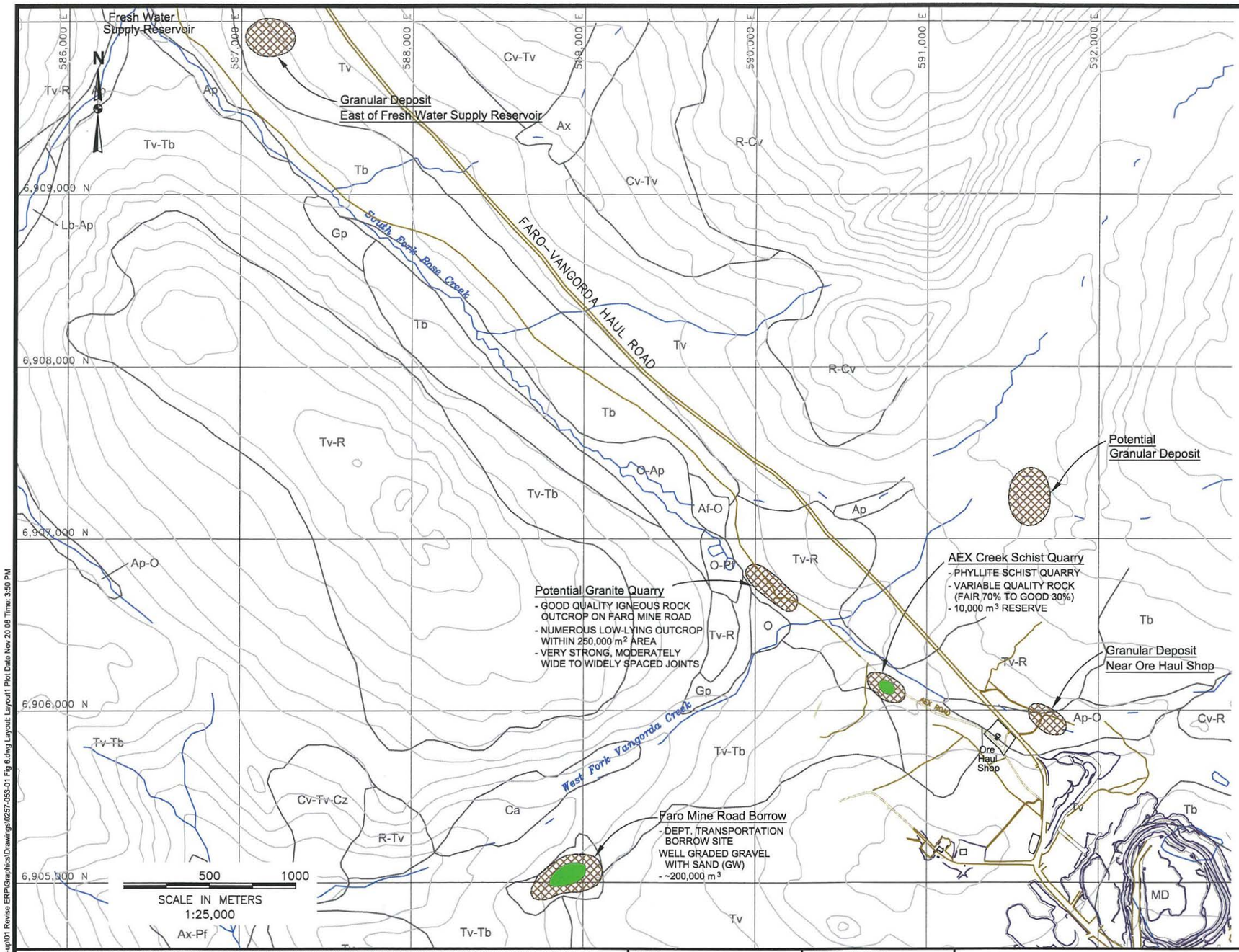

LEGEND (from Bond, 1999)

QUATERNARY

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(105K/3&6 W), CENTRAL YUKON TERRITORY

REV.	DATE	REVISION NOTES	DRAWN	CHECK	APPR.

SCALE:	AS SHOWN
DATE:	NOV 2008
DRAWN:	JL
DESIGNED:	ALF
CHECKED:	GWF
APPROVED:	HHH

PROFESSIONAL SEAL:

BGC ENGINEERING INC.
AN APPLIED EARTH SCIENCES COMPANY

CLIENT: Deloitte & Touche

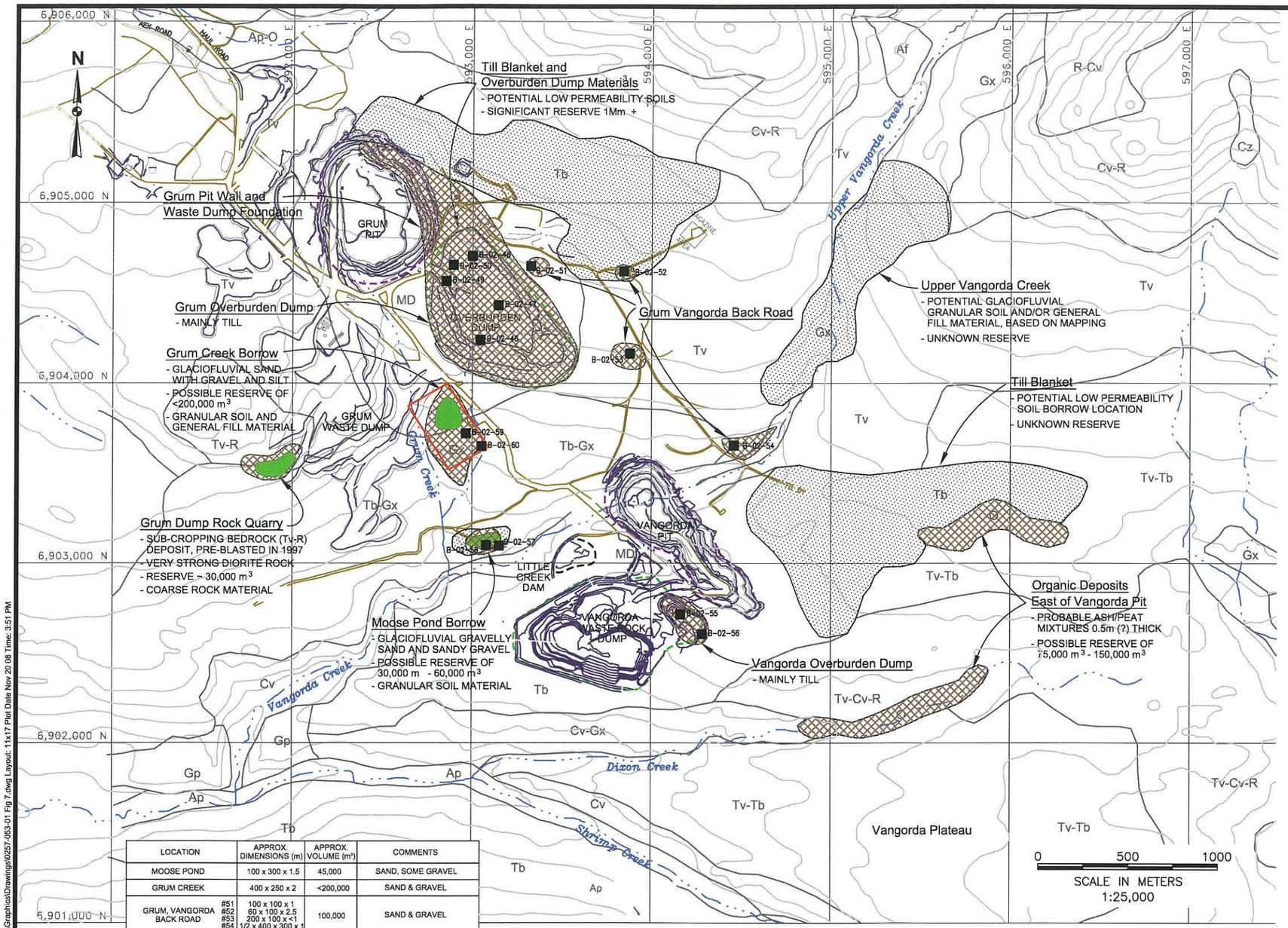
PROJECT: ANVIL RANGE ERP FOR DAMS AND WATER DIVERSION STRUCTURES

TITLE: FARO - VANGORDA HAUL ROAD SURFICIAL GEOLOGY SOIL AND ROCK BORROW LOCATIONS

PROJECT No.:	FIGURE No.	REV.:
0257-053-01	6	0

K:\Projects\0257 D&T\053 Dam Safety Follow-up\01 Revise ERP\Graphics\Drawings\0257-053-01 Fig 6.dwg Layout: Layout1 Plot Date: Nov 20 08 Time: 3:50 PM

DWG TO BE READ WITH BGC MEMO TITLED " A REPORT TITLE" DATED SEPT 2007



LOCATION	APPROX. DIMENSIONS (m)	APPROX. VOLUME (m³)	COMMENTS
MOOSE POND	100 x 300 x 1.5	45,000	SAND, SOME GRAVEL
GRUM CREEK	400 x 250 x 2	<200,000	SAND & GRAVEL
GRUM, VANGORDA BACK ROAD	#51 100 x 100 x 1 #52 60 x 100 x 2.5 #53 200 x 100 x <1 #54 1/2 x 400 x 300 x 1	100,000	SAND & GRAVEL
VANGORDA OVB DUMP	200 x 200 x 10	400,000	GLACIAL TILL
GRUM OVERBURDEN DUMP	1000 x 700 x 12	8,000,000	GLACIAL TILL
ORGANIC DEPOSITS EAST OF VANGORDA PIT	800 x 150 x .5 1100 x 150 x .5	150,000	PEAT

LEGEND (from Bond, 1999)

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REFERENCE

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SCALE: AS SHOWN
DATE: NOV 2008
DRAWN: JL
DESIGNED: ALF
CHECKED: GWF
APPROVED: HHH

PROFESSIONAL SEAL:

BGC ENGINEERING INC.
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CLIENT: Deloitte & Touche

PROJECT: ANVIL RANGE ERP FOR DAMS AND WATER DIVERSION STRUCTURES

TITLE: VANGORDA - GRUM AREA SURFICIAL GEOLOGY SOIL AND ROCK BORROW LOCATIONS

PROJECT No.:	FIGURE No.	REV.:
0257-053-01	7	0

DWG TO BE READ WITH BGC MEMO TITLED " A REPORT TITLE" DATED SEPT 2007

K:\Projects\0257 D&T\053 Dam Safety Follow-up\01 Revise ERP\Graphics\Drawings\0257-053-01 Fig 7.dwg Layout: 11x17 Plot Date Nov 20 08 Time: 3:51 PM

APPENDICES

APPENDIX A
FARO MINE CONTACT LIST

Ambulance / Medical Services

Faro Nursing Station	994-4444	994-2157
Faro Ambulance Service	994-4444	994-2673
Whitehorse Hospital	1-867-393-8700	
Poison Control Center	1-800-267-1373	

Fire Services

Faro Fire Department	994-2222	994-2704
Forest Fire Reporting	1-888-798-3473	
Forest Fire Information Line	1-800-826-4750	
Russel Blackjack	994-5555	
Faro Conservation Officer	994-2862	
T J Granthan	994-2006	

Yukon Energy Corporation

YEC - Faro	994-3013	
YEC - Gary Jones	994-2640	
YEC After Hours	1-800-676-2843	
YEC - Guy Morgan	1-867-393-5366	
YEC - SCC WHT HRS.	1-867-393-5355	

Anvil Range Mining

Line 1	994-2315	Fax: 994-2378
Line 2	994-2319	Fax: 994-2378
Line 3	994-2348	Fax: 994-2378
Line 4	994-2352	Fax: 994-2378
Line 5	994-2600	Fax: 994-2378
Dana Haggar	Ext. 101	
Ken Alderson	Ext. 102	
Mike Bryson	Ext. 103	
Dan Duivenvoorden	Ext. 104	
Security / Main Gate	Ext. 105	
Anvil Lab	Ext. 106	
First Aid Room	Ext. 107	
242 Dawson Drive (GH)	994-2459	Fax: 994-3483
638 Yates Crescent (GH)	994-2058	

Deloitte & Touche

Greg Stevens	1-403-267-1724	(403) 260-4066
Lorry Descheneau	1-403-267-0580	(403) 267-3283
Angela McCulloch	1-403-267-1825	(403) 920-9212

External Laboratories

ALS Environmental	1-604-253-4188	1-800-665-0243
Cantest Limited	1-604-734-7276	1-604-639-2605

Engineering Contacts

BGC - Jim Cassie	(56-2) 206-9458	Santiago, Chile
BGC - Gerry Ferris	1-403-250-5185	Ext. 101
BGC - Holger Hartmaier	1-403-250-5185	Ext. 113
SRK - Peter Healey	1-604-601-8420	1-604-687-5532
SRK - Cam Scott	1-604-601-8425	1-604-687-5532
SRK - Dylan MacGregor	1-604-681-4196	1-604-687-5532
SRK Joesf Miskolczi	1-604-681-4196	1-604-687-5532
SRK - Maritz Rykaart	1-604-681-4196	1-604-687-5532
AECOM - Jay Cherian	1-867-633-6474	1-867-633-6321
AECOM - Greg Bull	1-867-633-6474	Ext. 5734
AECOM - Elise Babyn	1-867-633-6474	1-867-633-6321

Employee Home Phone Numbers

Adam Miller	994-3310	
Adam Minder	994-2326	
Amos Benoit	994-2672	
Bernice Pardy	994-2234	
Jovita (Betty) Murphy	994-3288	
Bill Power	994-2168	
Bill Wesche	994-2129	
B J Wesche	994-2129	
Craig McKinnon	994-2500	
Chris Wilkinson	994-3289	
Dana Haggar	994-2647	1-867-333-4767
Dan Duivenvoorden	994-3111	Sues: 994-2520
Doc Forbes	994-2307	
Glenda Benoit	994-2672	
Jim Cheater	994-2001	
Karen Parsons	994-3339	
Karie Branner	994-2341	
Ken Alderson	994-3223	
Leo Hackett	994-2337	
Lester Boyle	994-2069	
Linda Wondga	994-3223	
Lloyd Johb	994-2804	
Marlin Johb	994-2804	
Mike Bryson	994-2579	
Michael Heigl	994-2612	
Paul Kelly	994-3485	
Paul Minder	969-2901	
Ralph Anderson	994-2022	
Ray Henderson	994-2104	
Ray Jones	994-2415	
Rhonda Haggar	994-3328	
Richard Wilkinson	994-3257	
Robert Fuller	335-1403	
Robert Raymond	994-2204	
Robert Rogers	994-2735	
Robert Shaw	994-2055	
Ron Meers	994-2379	
Ron Neyele	994-2339	
Rory McGivern	994-2424	

Extra Space

Don Bissonette	1-604-596-6003	AA's
Laberge Environ. Ser.	1-867-668-6838	Bonnie B / Ken N
White Mountain Env.	1-867-399-7019	Paul Sparling

Town of Faro / Government Services

Town Office	994-2728	
Town Maintenance	994-2758	
Faro Rec Center	994-2375	
Faro Arena	994-2776	
Interpretive Center	994-2288	
Faro Library	994-2684	
Faro Territorial Agent	994-2724	
Faro Post Office	994-2759	
Yukon College	994-2832	

Bed & Breakfast / Hotel's

Anne's Home B & B	994-2210	
Bear's Den B & B	994-2103	
Blue House B & B	994-2106	
Northstar B & B	994-2243	
Valley B & B	994-2122	
Faro Studio Hotel	994-3003	
Faro Hardware Store	994-3357	
Discovery Store	994-2470	

Local Services / Business

Bill Woods	994-2425	
TD Bank	994-2629	
Studio Restaurant	994-3133	
Studio Lounge	994-3003	
Faro Real Estate	994-2009	
Murray Hampton	994-3443	
Trans North Helicopters	994-3330	

Local Contractors

Canol Mobile Welding	1-867-969-2827	
McLeod C Contracting	1-867-969-2364	
Tim Moon Construction	1-867-969-2519	994-2080
Vanio Construction	994-3460	

Extra Space

A-1 Delivery	1-867-668-8140	
YES Surveying - Marshall	1-867-668-2000	Fax 1-867-667-2220
Gomm Envir.Eng.Consult.	1-867-334-7237	

APPENDIX B
FARO MINE SITE PERSONNEL ERP PULL OUT

Dam Emergency Identification and Incident Levels

Dam Overtopping

Alert:	Dam is at normal operating level and starts to rise to maximum operating level.
Emergency:	Resevoir level starts to rise above maximum operating level but not over the water retaining element. Overtopping may occur if pond levels are not reduced.
FAILURE:	Resevoir levels have reached and exceeded the water retaining level of the dam. Depending on the design the dam could be overtopping at this point or there could be sufficient freeboard available Overtopping is iminent if water levels continue to rise and erosion of the crest occurs.

Dam Embankment Instability

Alert:	Appearance of new cracks or opening of existing cracks in crest or faces of the dam. Warming trend in thermisters, increasing pore pressures in piezometers or high one time reading of a piezometer.
Emergency:	New cracks continue to grow in length and width and the displacement increases. Thermister data continues to show warming trend, piezometric levels continue to rise, other instruments start to show these effects. Head scarp is located on downstream face of the dam and/or toe bulges are noted.
FAILURE:	Continued and accelerated displacements of new cracks. Head scarp reaches dam crest or breaches upstream side of dam. All instabilities on the upstream side of the dam are considered potential failure level conditions.

Piping

Alert:	Changes in the location of seepage water or rate of flow. Seepage flow may be affected by precipitation, snow melt or thawing of ground ice. May be associated to a warming trend in thermisters
Emergency:	Any change from clear seepage to seepage containing suspended sediment or turbidity. Development of surface depressions or sinkholes on upstream face of dam or base of resevoir upstream of dam. Development of "boils" or cavities on downstream side of dam or in foundation downstream of dam. Significant changes in pore pressure of adjacent piezometers may be noted.
FAILURE:	Progressive or rapid development or enlargement of boils or soil cavities, leading to uncontrolled seepage flows increasing in flow rate and amount of transported sediment. May be associated with slope instabilities due to erosion of materials by high gradient seepage flow. Formation of settlement troughs between reservoir and seepage points. Entire reservoir may be discharged through pipe cavity, without breaching of dam, or pipe may progress upgradient with increasing erosion leading to dam breach and release of remaining reservoir due to dam failure.

Seismic Instability and Large Earthquake Events

Alert:	Site staff should inspect all dams after a seismic event has been felt at the site, regardless of the size of the event. Pore pressure readings should be taken on all piezometers.
Emergency:	Following a seismic event, visual inspection reveals the presence of new cracks, settlement of the dam crest, increased seepage flow from existing seepage points or development of new zones of seepage or both. Any deformation of the dam or adjacent abutments and foundation areas.
FAILURE:	The crest may settle below reservoir operating level, resulting in overtopping. Cracking of the impervious core or liner may lead to uncontrolled release of water from the reservoir. Liquefaction of the foundation may affect the stability of the entire dam and abutments. Liquefaction of tailings stored behind a dam may impose an increased load on the dam, leading to embankment instability. Signs of embankment instability in the form of headscarps, increasing deformations on cracks, ongoing settlement, development of a toe bulge and increased seepage (typically muddy) may be observed.

Channel Overtopping

Alert:	Normal channel flow conditions. Water levels below the lowest bank level. No active erosion of channel bed or sides
Emergency:	As flow levels rise and velocities increase, there is greater potential for erosion of the channel bed and sides as the design hydraulic capacity of the channel is reached. Although overtopping has not yet occurred, continued erosion at low points may result in breaching of the channel. If water levels continue to rise, overtopping will occur.
FAILURE:	The banks containing the diversion flow are breached or overtopped. The amount of flow out of the channel may range from relatively minor overbank spillage to complete loss of the channel and the downhill retention. Minor overbank spillage may cause erosion into the bank and increase in volume, even if channel water levels remain constant, potentially leading to a complete breach situation.

Channel Slope Instability

Alert:	Routine maintenance of the slopes above the channel should be carried out to scale and remove loose rock and overburden that may slide or fall into the channel. The channel should be upgraded to alert level anytime removal of material from the channel is needed.
Emergency:	Periodic visual inspection has revealed the presence of cracks or other evidence of deformation in the slopes above the channel, or in the bank between the channel and an adjacent slope or excavation. A minor slide has partially blocked the channel, but no overtopping is expected to occur.
FAILURE:	Relatively rapid development of surface instability, which threatens to completely block the channel or result in a breach in the channel sides.