PEBBLE PROJECT

DRAFT ENVIRONMENTAL BASELINE STUDIES
PROPOSED 2008 STUDY PLANS

CHAPTER 8. GEOCHEMICAL CHARACTERIZATION

DRAFT

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8. GEOCHEMICAL CHARACTERIZATION

The study for geochemical characterization and metal leaching/acid rock drainage (ML/ARD) for the Pebble Project mine site is led by SRK Consulting (Canada) Inc. The objectives and scope of study is described in Chapter 8 of the 2005, 2006, and 2007 Study Plans. Laboratory tests conducted on samples taken from previous years will continue for samples collected in 2008.

8.1 2008 Sampling Program

A recent assessment of the distribution of sulphur in the Tertiary Cover Rocks showed that most lithologies were associated with two distinct sub-populations. To ensure that samples included in the characterization program to-date covered the complete range of sulphur characteristics shown by the Tertiary lithologies, attributes of the Tertiary samples selected for inclusion in humidity cell test work were compared to attributes of these sub-populations. For the most part, the selected samples were considered representative of both sulphur sub-populations identified. However, in the case of the dacite (TD) and mudstone (TY), the samples do not fully represent the high-sulphur populations. For this reason, two extra samples have been identified for inclusion in a 2008 sampling program. Table 8.1 summarizes the program tasks being performed in 2008. Figure 8.1 shows the program sample locations.
## TABLE 8-1
Pebble Project Environmental Studies
Study Summary for Geochemical Characterization and Metals Leaching/Acid Rock Drainage, 2004-2008
Consultant: SRK Consulting

<table>
<thead>
<tr>
<th>Discipline</th>
<th>2004 Data Collected or Tasks</th>
<th>2005 Data Collected or Tasks</th>
<th>2006 Data Collected or Tasks</th>
<th>2007 Data Collected or Tasks</th>
<th>2008 Data Collected or Tasks</th>
<th>Tasks to be Completed</th>
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</thead>
<tbody>
<tr>
<td>ML/ARD Mine Study Area</td>
<td>Selection of samples for static testing</td>
<td>Initiation of humidity cells on rock samples</td>
<td>Continued kinetic testing on rock samples</td>
<td>Continue kinetic testing on Pebble West rock samples</td>
<td>Continue kinetic testing on Pebble West rock samples</td>
<td>Continue kinetic testing on Pebble West rock samples</td>
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<tr>
<td>Static testing</td>
<td>Initiation of humidity cells on tailings samples</td>
<td>Continued kinetic testing on tailings samples</td>
<td>Continue kinetic testing on Pebble West tailings samples</td>
<td>Continue kinetic testing on Pebble West tailings samples</td>
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<tr>
<td>Selection of samples for kinetic testing</td>
<td>Initiation of column tests on rock samples</td>
<td>Additional static testing on rock samples</td>
<td>Mineralogical characterization of element occurrence in Tertiary rock</td>
<td>Mineralogical characterization of element occurrence in Tertiary rock</td>
<td>Mineralogical characterization of element occurrence in Tertiary rock</td>
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<tr>
<td>Visit to site to review logging practices</td>
<td>Initiation of column tests on tailings samples</td>
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<tr>
<td>Selection of drill-holes for mine walls</td>
<td>Additional static testing on mine-wall drill-holes</td>
<td>Commence field weathering (barrel) tests</td>
<td>Continue field weathering (barrel) tests and parallel laboratory studies</td>
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<td>Specific characterization of Tertiary rock samples</td>
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<td>2004 progress report</td>
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</tbody>
</table>

- **ML/ARD Mine Study Area**
- **Static testing**
- **Selection of samples for kinetic testing**
- **Visit to site to review logging practices**
- **Selection of drill-holes for mine walls**
- **Specific characterization of Tertiary rock samples**
- **2004 progress report**

- **Consultant:** SRK Consulting
- **Study Summary:** Geochemical Characterization and Metals Leaching/Acid Rock Drainage, 2004-2008

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Figure 8-1
Collars of Diamond Drill-holes Sampled for Humidity Cell Testwork and Subaqueous Column Testwork, 2008

DRILL HOLES SAMPLED FOR
- HUMIDITY CELL TESTWORK
- SUBAQUEOUS COLUMN TESTWORK
- OTHER DRILL HOLES

Scale as shown
Alaska State Plane Zone 5 (units feet)

File: PEB_DrillPlan_SRK_Humidity_Subaqueous_Samples_2008_WOE