

## Field Monitoring Report -- Pebble Copper/Gold Exploration Project --

Personnel:	Inspection Date: 6/15/2010 and 6/16/2010
Kate Malloy, Ron Benkert - DF&G	Site Contact: Gary Deschutter
Jim Vohden, Stephanie Lovell - DNR	APMA #: A20106118
Gay Harpole, Kara Kusche - DEC	
<b>■ Inspection Type:</b> <input type="radio"/> Complete: Inspected one active drill rig and 11 abandoned sites (2 were abandoned the day of, or day prior, to site inspection). <input type="radio"/> Partial: <input type="radio"/> Follow-up: <input type="radio"/> Response to Public Complaint:	<b>■ Wildlife Observed:</b> <input type="radio"/> Bear: One brown bear during fly over between drill holes <input type="radio"/> Caribou: None <input type="radio"/> Moose: None <input type="radio"/> Waterfowl: Waterfowl observed at only the largest ponds; seems smaller ponds aren't being utilized <input type="radio"/> Fish: None <input type="radio"/> Other: None
<b>■ Weather Conditions:</b> <input type="radio"/> Temperature: Approximately 45F <input type="radio"/> Wind: Beaufort Scale 4 (approx. 15 mph) <input type="radio"/> Precipitation: Light rain on and off all day <input type="radio"/> Visibility: Moderate, 2-3 miles <input type="radio"/> Sky Conditions: Cloudy, overcast <input type="radio"/> Ground Conditions: Damp due to rain	<b>■ Water level at Frying Pan Lake:</b> <input type="radio"/> Observed inflow: Not observed <input type="radio"/> Observed outflow: Not observed
<p>Comments: Only one drill rig was active at time of inspection. The active rig, along with 11 abandoned drill holes, were inspected. Two of the abandoned drill holes were recently finished and reclamation was just beginning.</p> <p>The active drill was at depth of 928 ft., going to 1200 ft.; new fish screen in use - signs posted at water withdrawal site (Pre-water take id no. EX09-BB-W, Final water take id no. DDH-1048-W); totalizer on water withdrawal line - we estimated 20 gpm based on totalizer and stopwatch. At active drill site, drill water discharge line wasn't in use, but was slightly tangled and some leakage evident around connection joints from last time line was discharging. Driller was notified to untangle hose.</p> <p>Of the abandoned drill holes inspected, reclamation results varied. Dead vegetation was</p>	

observed at several reclaimed sites. It should be noted that the abandoned holes were reclaimed at different times and some sites may have had longer to recover than others.

Recommendations: PLP should consider reclamation procedures and try to identify what might have caused certain sites to yield better results than others. Improve reclaimed sites where vegetation has died and did not reestablish. Particular attention should be given to clean up DH 8412.

Actions Needed: Agencies should obtain reclamation completion dates for abandoned drill holes from PLP prior to, or at time of inspection. This may help explain observable differences in condition between the reclaimed drill sites.

Drill Hole/Site No.: 10480	Rig No.: 3
Activity: Drilling in progress	Date: 6/16/2010
<ul style="list-style-type: none"> <li>■ Condition of Drilling Site:</li> </ul>	<ul style="list-style-type: none"> <li>■ Sump Pit (continued):</li> </ul>
<ul style="list-style-type: none"> <li>○ Distance from waterbody: ~500'</li> </ul>	<ul style="list-style-type: none"> <li>○ Location and extent of discharged material: Sump pits located adjacent to drill; discharge contained within sump pits</li> </ul>
<ul style="list-style-type: none"> <li>○ Location of fuel storage: Adjacent to rig</li> </ul>	<ul style="list-style-type: none"> <li>○ Topsoil, muck, tundra stockpiled: Yes</li> </ul>
<ul style="list-style-type: none"> <li>○ Sorbent pads present: Yes</li> </ul>	<ul style="list-style-type: none"> <li>○ Location of secondary sump pit: In-line</li> </ul>
<ul style="list-style-type: none"> <li>○ Tundra mat: Yes</li> </ul>	<ul style="list-style-type: none"> <li>○ Hose color: White</li> </ul>
<ul style="list-style-type: none"> <li>○ Pipe off tundra: Yes</li> </ul>	
<ul style="list-style-type: none"> <li>○ Litter: None</li> </ul>	<ul style="list-style-type: none"> <li>■ Drill Water Supply:</li> </ul>
<ul style="list-style-type: none"> <li>○ Trash containment: Yes</li> </ul>	<ul style="list-style-type: none"> <li>○ Stream, lake, kettle pond: Stream</li> </ul>
<ul style="list-style-type: none"> <li>○ Sanitary facilities: Not verified</li> </ul>	<ul style="list-style-type: none"> <li>○ Location: ~800' from drill</li> </ul>
<ul style="list-style-type: none"> <li>○ Any spills or staining: None</li> </ul>	<ul style="list-style-type: none"> <li>○ Adequate water flow and depth for fish passage in streams: Yes</li> </ul>
<ul style="list-style-type: none"> <li>○ General impression: Good</li> </ul>	<ul style="list-style-type: none"> <li>○ Evidence of significant impacts to riparian vegetation or stream banks: No</li> </ul>
	<ul style="list-style-type: none"> <li>○ Relative water level: ~ 2/3 of bank full</li> </ul>
<ul style="list-style-type: none"> <li>■ Drilling Activity: Active</li> </ul>	<ul style="list-style-type: none"> <li>○ General impression of water body, i.e. clear, turbid, tannic: Clear</li> </ul>
<ul style="list-style-type: none"> <li>○ Drill additives in use: Not verified</li> </ul>	<ul style="list-style-type: none"> <li>○ Intake structure: Yes</li> </ul>
<ul style="list-style-type: none"> <li>○ Water recirculation: When possible</li> </ul>	<ul style="list-style-type: none"> <li>○ Structure clear of debris: Yes</li> </ul>
<ul style="list-style-type: none"> <li>○ Water discharged: No discharge from drill water discharge line at time of inspection</li> </ul>	<ul style="list-style-type: none"> <li>○ Mesh size: 1 mm x 12 mm (consistent with 0.04 inch mesh size for Group A fish)</li> </ul>
<ul style="list-style-type: none"> <li>○ Artesian zone encountered: None</li> </ul>	<ul style="list-style-type: none"> <li>○ Submerged: Yes</li> </ul>
	<ul style="list-style-type: none"> <li>○ Pump location to source: &gt; 100 ft</li> </ul>
<ul style="list-style-type: none"> <li>■ Sump Pit: Yes</li> </ul>	<ul style="list-style-type: none"> <li>○ Catch basin for fuel supply: Yes</li> </ul>
<ul style="list-style-type: none"> <li>○ Location: Approx. 20 ft. from drill rig</li> </ul>	<ul style="list-style-type: none"> <li>○ Sorbent pads: Present</li> </ul>
<ul style="list-style-type: none"> <li>○ Discharge trench: Adjacent</li> </ul>	<ul style="list-style-type: none"> <li>○ Hose color: Yellow</li> </ul>
<ul style="list-style-type: none"> <li>○ Dimensions of pit: 2 pits ~3'x8'</li> </ul>	
<ul style="list-style-type: none"> <li>○ In use: Yes</li> </ul>	



Figure 1. Drill Rig #3 on DH 10480. Note tundra pads, fuel containment and oil scrubbers (blue barrels).



Figure 2. Active drill currently at a depth of 928 feet, going to 1200 feet.



Figure 3. Sump pits (on left) and tundra stock pile being saved for reclamation (on right).

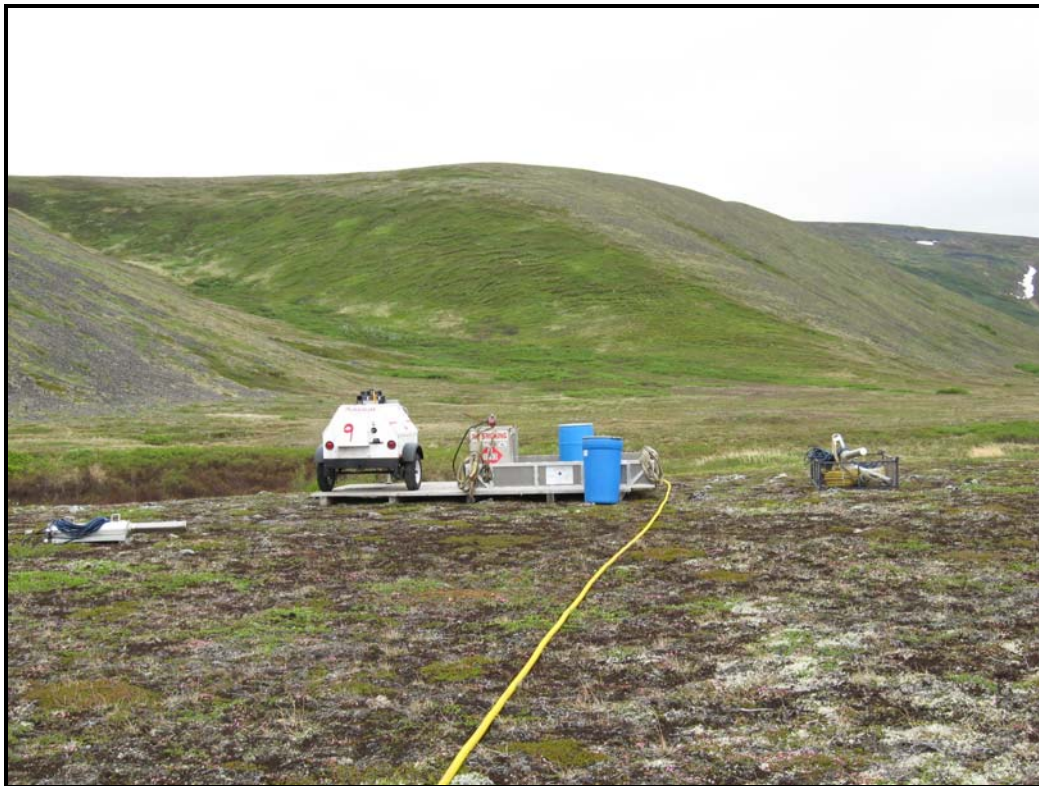


Figure 4. Water pump. Note fuel containment, with spill kit and oil scrubbers.



Figure 5. New totalizer that PLP is using to track water usage. During site visit, pumping rate was estimated at 20 gpm.



Figure 6. Water intake line extended from the upland down to the creek. Pump is visible in the water, as well as required sign indicating this is a water take location.



Figure 7. Close up of sign identifying this particular water take location and number.



Figure 8. Screened water intake structure.

Abandoned Drill Hole/Site No.: 8429	Date: 6/15/2010
<ul style="list-style-type: none"> <li>■ Plugged: Not observed</li> <li>■ Cemented: Not observed</li> <li>■ Standing pipe: Casing not visible</li> <li>■ Sump pit filled in: Yes</li> <li>■ Water discharge trench filled in: Yes</li> <li>■ Site revegetated: Site was reclaimed but vegetation is not growing well.</li> <li>■ Artesian water present: None</li> <li>■ Any spills or staining: None</li> <li>■ Comments/General impression: Dead vegetation was main indicator of past drill activity at this site.</li> </ul>	



Figure 9. Reclaimed drill site DH 8429; vegetation is not growing.



Abandoned Drill Hole/Site No.: 8432	Date: 6/15/2010
<ul style="list-style-type: none"> <li>■ Plugged: Not observed</li> <li>■ Cemented: Not observed</li> <li>■ Standing pipe: Casing not visible</li> <li>■ Sump pit filled in: Yes</li> <li>■ Water discharge trench filled in: Yes</li> <li>■ Site revegetated: Yes, site reclaimed but vegetation growth is limited and bare soil present.</li> <li>■ Artesian water present: None</li> <li>■ Any spills or staining: None</li> <li>■ Comments/General impression: Limited vegetation regrowth and bare soil was main indicator of past drill activity at this site.</li> </ul>	



Figure 10. Reclaimed drill site DH 8432; vegetation has not become reestablished in some areas.

Abandoned Drill Hole/Site No.: 9455	Date: 6/15/2010
■ Plugged: Not observed	
■ Cemented: Not observed	
■ Standing pipe: Casing not visible.	
■ Sump pit filled in: Yes	
■ Water discharge trench filled in: Yes	
■ Site revegetated: Yes, site reclaimed and vegetation is growing.	
■ Artesian water present: None	
■ Any spills or staining: None	
■ Comments/General impression: Site generally looked good, vegetation reestablishing.	



Figure 11. Reclaimed drill site DH 9455; vegetation is growing and filling in.

Abandoned Drill Hole/Site No.: 9466	Date: 6/15/2010
<ul style="list-style-type: none"> <li>■ Plugged: Not observed</li> <li>■ Cemented: Not observed</li> <li>■ Standing pipe: Casing not visible.</li> <li>■ Sump pit filled in: Yes</li> <li>■ Water discharge trench filled in: Yes</li> <li>■ Site revegetated: Yes, site reclaimed and vegetation is growing.</li> <li>■ Artesian water present: None</li> <li>■ Any spills or staining: None</li> <li>■ Comments/General impression: Vegetation growth appears slower here than other sites, but may be due to site specific conditions (i.e., harsher winds) or more recently reclaimed than other sites. It would be nice for agency to have reclamation completion dates at time of inspection.</li> </ul>	



Figure 12. Reclaimed drill site DH 9466; vegetation is growing and still filling in.

Abandoned Drill Hole/Site No.: 9470 and 9471	Date: 6/15/2010
<ul style="list-style-type: none"> <li>■ Plugged: Not observed</li> <li>■ Cemented: Not observed</li> <li>■ Standing pipe: Casing not visible.</li> <li>■ Sump pit filled in: Yes</li> <li>■ Water discharge trench filled in: Yes</li> <li>■ Site revegetated: Site reclaimed, but areas of exposed soil were observed were vegetation did not take.</li> <li>■ Artesian water present: None</li> <li>■ Any spills or staining: None</li> <li>■ Comments/General impression: Two drill holes located at same location.</li> </ul>	



Figure 13. Reclaimed drill site DH 9470 and DH 9471; site is reclaimed but areas of bare soil are present.

Abandoned Drill Hole/Site No.: 8427	Date: 6/16/2010
<ul style="list-style-type: none"> <li>■ Plugged: Not observed</li> <li>■ Cemented: Not observed</li> <li>■ Standing pipe: Casing not visible</li> <li>■ Sump pit filled in: Yes</li> <li>■ Water discharge trench filled in: Yes</li> <li>■ Site revegetated: Yes, vegetation is growing and site looks good.</li> <li>■ Artesian water present: None</li> <li>■ Any spills or staining: None</li> <li>■ Comments/General impression: Numbered drill post was only notable sign of past activity at this site.</li> </ul>	



Figure 14. Reclaimed drill site DH 8427; vegetation is growing in and reclamation efforts appear successful.

Abandoned Drill Hole/Site No.: 8412	Date: 6/16/2010
<ul style="list-style-type: none"> <li>■ Plugged: Partial (?)</li> <li>■ Cemented: Partial (?)</li> <li>■ Standing pipe: Yes</li> <li>■ Sump pit filled in: Yes</li> <li>■ Water discharge trench filled in: Yes</li> <li>■ Site revegetated: Vegetation is not regrowing at this site.</li> <li>■ Artesian water present: None</li> <li>■ Any spills or staining: None</li> <li>■ Comments/General impression: Site was messy and in poor condition. What appeared to be bentonite was present in clumps on the ground. Standing water around drill hole. The site did not look like reclamation was 100% complete.</li> </ul>	



Figure 15. DH 8412 has standing water and dead vegetation, indicating reclamation efforts are either incomplete or unsuccessful.



Figure 16. The ground surrounding DH 8412 was not clean and had, what appears to be, clumps of bentonite clay present.



Figure 17. Close up of bentonite like material.

Abandoned Drill Hole/Site No.: 8440	Date: 6/16/2010
<ul style="list-style-type: none"> <li>■ Plugged: Not observed</li> <li>■ Cemented: Not observed</li> <li>■ Standing pipe: Casing not visible.</li> <li>■ Sump pit filled in: Yes</li> <li>■ Water discharge trench filled in: Yes</li> <li>■ Site revegetated: Most of the vegetation is dead and not growing back.</li> <li>■ Artesian water present: None</li> <li>■ Any spills or staining: None</li> <li>■ Comments/General impression: Site was much cleaner than previously visited drill hole (8412), but revegetation effort was not successful.</li> </ul>	



Figure 18. Dead vegetation was observed at drill site DH 8440.



Abandoned Drill Hole/Site No.: 10478	Date: 6/16/2010
<ul style="list-style-type: none"> <li>■ Plugged: No</li> <li>■ Cemented: No</li> <li>■ Standing pipe: Yes</li> <li>■ Sump pit filled in: Partially, reclamation had just begun at time of inspection.</li> <li>■ Water discharge trench filled in: Yes</li> <li>■ Site revegetated: No, reclamation had just begun at time of inspection.</li> <li>■ Artesian water present: None</li> <li>■ Any spills or staining: None</li> <li>■ Comments/General impression: Drill rig was recently moved from site and reclamation had begun but was still early in the process at the time of inspection.</li> </ul>	



Figure 19. The drill rig was recently moved from this site and reclamation has just begun.

Abandoned Drill Hole/Site No.: 10479	Date: 6/16/2010
<ul style="list-style-type: none"> <li>■ Plugged: No</li> <li>■ Cemented: No</li> <li>■ Standing pipe: Yes</li> <li>■ Sump pit filled in: Partial</li> <li>■ Water discharge trench filled in: Yes</li> <li>■ Site revegetated: No, reclamation had just begun at time of inspection.</li> <li>■ Artesian water present: None</li> <li>■ Any spills or staining: None</li> <li>■ Comments/General impression: Drill rig was recently moved from site and reclamation had begun but was still early in the process at the time of inspection.</li> </ul>	



Figure 20. The drill rig was recently removed from this site and the sump pits are being filled in as the beginning stage of reclamation.