

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

| | |
|--|---|
| Personnel: Rick Fredericksen (DNR/MLW) | Inspection Date: August 25, 2011 |
| Gerry Brown (DEC/Water) | Site Contact: Jeff Norberg |
| Brent Goodrum (DNR/MLW) | APMA #: A116118 |
| | |
| <ul style="list-style-type: none"> ■ Inspection Type: | <ul style="list-style-type: none"> ■ Wildlife Observed: |
| <ul style="list-style-type: none"> ○ Complete: All Four Drills & 2 old sites | <ul style="list-style-type: none"> ○ Bear: |
| <ul style="list-style-type: none"> ○ Partial: | <ul style="list-style-type: none"> ○ Caribou: |
| <ul style="list-style-type: none"> ○ Follow-up: | <ul style="list-style-type: none"> ○ Moose: |
| <ul style="list-style-type: none"> ○ Response to Public Complaint: | <ul style="list-style-type: none"> ○ Waterfowl: swans at Big Wiggley Lake |
| | <ul style="list-style-type: none"> ○ Fish: |
| <ul style="list-style-type: none"> ■ Weather Conditions: | <ul style="list-style-type: none"> ○ Other: ground dwelling mammals; ptarmigan flock of about a dozen; observed a raptor diving for fish in one of the ponds |
| <ul style="list-style-type: none"> ○ Temperature: 55° F | |
| <ul style="list-style-type: none"> ○ Wind: 5 to 10 mph | |
| <ul style="list-style-type: none"> ○ Precipitation: minor at project site | |
| <ul style="list-style-type: none"> ○ Visibility: 10 miles | |
| <ul style="list-style-type: none"> ○ Sky Conditions: overcast | |
| <ul style="list-style-type: none"> ○ Ground Conditions: damp | |
| | |
| | |
| <ul style="list-style-type: none"> ■ Comments: | |
| <ul style="list-style-type: none"> ■ Recommendations: Site 11-533 will require extra attention during reclamation as the site was occupied for a considerable period of time and some vegetation was trampled | |
| <ul style="list-style-type: none"> ■ Actions Needed: | |

| | |
|---|---|
| Drill Hole/Site No.: 11531 | Date: August 25, 2011 |
| Rig No.: 3 (near staging area) | Time: 10:45 am |
| Activity: approx 2458 feet deep; stopped for water sampling. | |
| <ul style="list-style-type: none"> ■ Condition of Drilling Site: | <ul style="list-style-type: none"> ■ Sump Pit (continued): |
| <ul style="list-style-type: none"> ○ Distance from waterbody: | <ul style="list-style-type: none"> ○ Location and extent of discharged material: |
| <ul style="list-style-type: none"> ○ Location of fuel storage: | <ul style="list-style-type: none"> ○ Topsoil, muck, tundra stockpiled: Yes |
| <ul style="list-style-type: none"> ○ Sorbent pads present: | <ul style="list-style-type: none"> ○ Hose color: gray suction/black discharge |
| <ul style="list-style-type: none"> ○ Tundra mat: Yes | |
| <ul style="list-style-type: none"> ○ Pipe off tundra: Yes | <ul style="list-style-type: none"> ■ Drill Water Supply: |
| <ul style="list-style-type: none"> ○ Litter: None | <ul style="list-style-type: none"> ○ Stream, lake/pond: lake (15 gpm) |
| <ul style="list-style-type: none"> ○ Trash containment: Yes | <ul style="list-style-type: none"> ○ Location: 0.6 mi (measured by gps) |
| <ul style="list-style-type: none"> ○ Sanitary facilities: two available -- privy and portable facility | <ul style="list-style-type: none"> ○ Adequate water flow and depth for fish passage in streams: Yes |
| <ul style="list-style-type: none"> ○ Any spills or staining: None | <ul style="list-style-type: none"> ○ Evidence of significant impacts to riparian vegetation or stream banks: minor trampling of vegetation by foot traffic |
| <ul style="list-style-type: none"> ○ General impression: Good | <ul style="list-style-type: none"> ○ General impression of water body (i.e. clear, turbid, tannic): clear |
| | <ul style="list-style-type: none"> ○ Intake description: Johnson screen |
| <ul style="list-style-type: none"> ■ Drilling Activity: | <ul style="list-style-type: none"> ○ Structure clear of debris: Yes |
| <ul style="list-style-type: none"> ○ Drill additives in use: Extreme One; bentonite; Quicktrol | <ul style="list-style-type: none"> ○ Mesh size: (standard 0.1 mm) |
| <ul style="list-style-type: none"> ○ Recirculation tank: Yes | <ul style="list-style-type: none"> ○ Submerged: Yes |
| <ul style="list-style-type: none"> ○ Water discharged: | <ul style="list-style-type: none"> ○ Fuel/generator location to source: 200 ft |
| <ul style="list-style-type: none"> ○ Artesian zone encountered: None noted | <ul style="list-style-type: none"> ○ Catch basin for fuel supply: Yes (dry) |
| | <ul style="list-style-type: none"> ○ Sorbent pads: Yes |
| <ul style="list-style-type: none"> ■ Sump Pit: | <ul style="list-style-type: none"> ○ Hose color: yellow |
| <ul style="list-style-type: none"> ○ Location: 30 feet from rig | |
| <ul style="list-style-type: none"> ○ Discharge trench: 30 ft x 12 in. deep | <ul style="list-style-type: none"> ■ Other Comments: upland disposal site |
| <ul style="list-style-type: none"> ○ Dimensions of pit: 6 ft x 3 ft x 5 ft deep | <ul style="list-style-type: none"> had no significant discharge of cuttings |
| <ul style="list-style-type: none"> ○ In use: Yes | |

| | |
|--|--|
| Drill Hole/Site No.: GH 11-260 S | Date: August 25, 2011 |
| Rig No.: 5 | Time: 11:55 am |
| Activity: Sonic Drilling of alluvium and Weathered bedrock. | |
| ■ Condition of Drilling Site: | ■ Sump Pit (continued): |
| ○ Distance from waterbody: 250-300 ft | ○ Location and extent of discharged material: None |
| ○ Location of fuel storage: at rig | ○ Topsoil, muck, tundra stockpiled: Yes |
| ○ Sorbent pads present: Yes | ○ Hose color: 6" Black |
| ○ Tundra mat: Yes | |
| ○ Pipe off tundra: Yes | ■ Drill Water Supply: |
| ○ Litter: None | ○ Stream, lake/pond: Lake |
| ○ Trash containment: Yes | ○ Location: 400 ft from drill rig |
| ○ Sanitary facilities: Yes | ○ Adequate water flow and depth for fish passage in streams: Yes |
| ○ Any spills or staining: None | ○ Evidence of significant impacts to riparian vegetation or stream banks: None |
| ○ General impression: very good | ○ General impression of water body (i.e. clear, turbid, tannic): Clear |
| | ○ Intake description: Johnson screen |
| ■ Drilling Activity: | ○ Structure clear of debris: Yes |
| ○ Drill additives in use: bentonite pellets | ○ Mesh size: 0.1 mm |
| ○ Recirculation tank: None | ○ Submerged: Yes |
| ○ Water discharged: very little | ○ Fuel/generator location to source: 200 ft |
| ○ Artesian zone encountered: None | ○ Catch basin for fuel supply: Yes (dry) |
| | ○ Sorbent pads: Yes |
| ■ Sump Pit: | ○ Hose color: yellow |
| ○ Location: 10 ft from drill rig | |
| ○ Discharge trench: 2.5 ft | ■ Other Comments: black discharge hose to |
| ○ Dimensions of pit: 5 ft x 3.5 ft x 3.5 ft deep | hill 300 ft away; no significant discharge |
| ○ In use: Yes | |

| | |
|---|---|
| Drill Hole/Site No.: 11-533 | Date: August 25, 2011 |
| Rig No.: 2 | Time: 12:40 pm |
| Activity: tearing down for move; drilled east at -80° to approx. 4812 ft | |
| ■ Condition of Drilling Site: | ■ Sump Pit (continued): |
| ○ Distance from waterbody: 100 ft | ○ Location and extent of discharged material: 300 ft from rig, 20'x30' area |
| ○ Location of fuel storage: at drill | ○ Topsoil, muck, tundra stockpiled: Yes |
| ○ Sorbent pads present: Yes | ○ Hose color: 6" White |
| ○ Tundra mat: Yes but could have used more | |
| ○ Pipe off tundra: Yes | ■ Drill Water Supply: |
| ○ Litter: None | ○ Stream, lake/pond: water well (overflown) |
| ○ Trash containment: Yes | ○ Location: 0.3 miles |
| ○ Sanitary facilities: Yes | ○ Adequate water flow and depth for fish passage in streams: N/A |
| ○ Any spills or staining: None | ○ Evidence of significant impacts to riparian vegetation or stream banks: N/A |
| ○ General impression: site shows use from 2 months of occupation | ○ General impression of water body (i.e. clear, turbid, tannic): Clear |
| | ○ Intake description: Well Pump/Screen |
| ■ Drilling Activity: | ○ Structure clear of debris: N/A |
| ○ Drill additives in use: Extreme One | ○ Mesh size: Unknown |
| ○ Recirculation tank: Yes; empty -- on its side | ○ Submerged: Yes |
| ○ Water discharged: Yes | ○ Fuel/generator location to source: 200' |
| ○ Artesian zone encountered: None | ○ Catch basin for fuel supply: Unknown |
| | ○ Sorbent pads: Unknown |
| ■ Sump Pit: | ○ Hose color: yellow |
| ○ Location: 20 to 40 ft downhill | |
| ○ Discharge trench: series of 5 trenches | ■ Other Comments: 4 sumps added uphill |
| ○ Dimensions of pit: ea. 10 ft x 5 ft x 4 ft deep | with material transported in totes. Sediment |
| ○ In use: Yes | BMP measures (straw bales) placed by water as a precaution. |

| | |
|---|--|
| Drill Hole/Site No.: Pre-Drill SH 11 - AU | Date: August 25, 2011 |
| Rig No.: 4 | Time: 1:27 pm |
| Activity: Mud Rotary pre-collar being drilled to 25 feet | |
| ■ Condition of Drilling Site: | ■ Sump Pit (continued): |
| ○ Distance from waterbody: 0.6 mi | ○ Location and extent of discharged material: 300' from rig: 20'x30' area |
| ○ Location of fuel storage: at drill rig | ○ Topsoil, muck, tundra stockpiled: Yes |
| ○ Sorbent pads present: Yes | ○ Hose color: 6 " White |
| ○ Tundra mat: Yes | |
| ○ Pipe off tundra: Yes | ■ Drill Water Supply: |
| ○ Litter: None | ○ Stream, lake/pond: lake (overflow) |
| ○ Trash containment: Yes | ○ Location: 0.6 mile |
| ○ Sanitary facilities: Yes | ○ Adequate water flow and depth for fish passage in streams: Yes |
| ○ Any spills or staining: None | ○ Evidence of significant impacts to riparian vegetation or stream banks: None from aerial view. |
| ○ General impression: clean & orderly | ○ General impression of water body (i.e. clear, turbid, tannic): Clear |
| | ○ Intake description: Johnson |
| ■ Drilling Activity: | ○ Structure clear of debris: |
| ○ Drill additives in use: Quick-Gel | ○ Mesh size: 0.1 mm |
| ○ Recirculation tank: Yes | ○ Submerged: Yes |
| ○ Water discharged: incidental | ○ Fuel/generator location to source: 200' |
| ○ Artesian zone encountered: None | ○ Catch basin for fuel supply: Unknown |
| | ○ Sorbent pads: Unknown |
| ■ Sump Pit: | ○ Hose color: Yellow |
| ○ Location: 20 ft from collar | |
| ○ Discharge trench: 20 ft x 8 in x 10 in | ■ Other Comments: Incidental discharge to |
| ○ Dimensions of pit: 6 ft x 4 ft x 4 ft deep | Tundra from sump. See Photo. |
| ○ In use: Yes | |

| | |
|--|-----------------------|
| Abandoned Drill Hole/Site No.: DH5-328 | Date: August 25, 2011 |
| | Time: 12:10 pm |
| <ul style="list-style-type: none"> ■ Plugged: not observable; no noticeable subsidence ■ Cemented: not observable ■ Standing pipe: None; only post ■ Sump pit filled in: Yes ■ Water discharge trench filled in: Yes ■ Site revegetated: Yes ■ Date revegetated/reclaimed: 2005 ■ Artesian water present: None ■ Any spills or staining: None ■ Comments/General impression: General natural landscape is approximately 50 % barren. Area around abandoned well 75 % barren. | |

| | |
|---|-----------------------|
| Abandoned Drill Hole/Site No.: 4191 | Date: August 25, 2011 |
| | Time: 11:15 am |
| ■ Plugged: not observable; no noticeable subsidence | |
| ■ Cemented: not observable | |
| ■ Standing pipe: None; only post | |
| ■ Sump pit filled in: Yes | |
| ■ Water discharge trench filled in: Yes | |
| ■ Site revegetated: Yes | |
| ■ Date revegetated/reclaimed: 2004 | |
| ■ Artesian water present: None | |
| ■ Any spills or staining: None | |
| ■ Comments/General impression: very successful reclamation/revegetation. Little evidence of the drilling activity is observable. Healthy blueberry patches growing at site. | |

| | |
|---|-----------------------|
| Abandoned Drill Hole/Site No.: DDH 7-384 | Date: August 25, 2011 |
| | Time: 1:02 pm |
| ■ Plugged: not observable; no evidence of subsidence around drill hole location | |
| ■ Cemented: not observable | |
| ■ Standing pipe: None; only post to mark location | |
| ■ Sump pit filled in: Yes | |
| ■ Water discharge trench filled in: Yes | |
| ■ Site revegetated: Yes | |
| ■ Date revegetated/reclaimed: records indicate site reclaimed in 2007 | |
| ■ Artesian water present: None | |
| ■ Any spills or staining: None | |
| ■ Comments/General impression: Some grasses from original revegetation still growing in proximity to the collar location. Native grasses and mosses growing over approximately 25% of the original pad location; not yet fully recovered as these plants grow slowly. | |



Water supply for DDH-11531; note use of Johnson well screen



Sump and stockpiled soils and tundra at site DDH-11531



Foundex Sonic Drill at site GH 11-260 S



Fuel supply, fuel containment, and spill packages at site GH 11-260 S



Site DDH 11-533. Note medical tent, portable sanitary facility; site being readied for rig move.



Site DDH 11-533. Uphill addition of additional sludge pits; undergoing reclamation. Mounding of fill is to allow for settling of the pits. Reclamation is not complete.



Site DDH 11-533. Straw bales placed and staged around 5 sumps for precaution.



Foundex Mud Rotary drilling operation to drill the pre-collar at site SH-AU



Site SH- AU. Portable trash containment and privy. Wings are for stabilization when being slung by helicopter.



Site SH-AU. Incidental Discharge.



Site SH-AU. Aerial



Abandoned and reclaimed drill site DDH-4191.



Abandoned and reclaimed drill site DDH-7384.



Abandoned Site DDH-5328.