

**FLORENCE COPPER INC.  
FLORENCE COPPER PROJECT  
FOURTH QUARTER 2005 MONITORING REPORT  
U.I.C. PERMIT AZ396000001  
AND  
A.P.P. PERMIT 101704**

**January 28, 2006**

**MERRILL MINING, LLC**  
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404-495-9577 Fax: 404-495-9578

**HUGH NOWELL**  
**CORPORATE COUNSEL**

**January 28, 2006**

Mr. Doug Liden  
Ground Water Office WTR-0  
US Environmental Protection Agency Region IX  
Water Management Division (WTR-9)  
75 Hawthorne Street  
San Francisco, California 94105-3901

**RE: MONITORING REPORT FOR UIC PERMIT NUMBER AZ396000001**  
**FOURTH QUARTER 2005 REPORT**

Dear Mr. Liden:

This report is submitted in accordance with the reporting requirements of Parts II.G.2.(a) through (j) of the referenced permit. It pertains to monitoring activities conducted at the Florence In-Situ Mine Site from October 1 through December 31, 2005. Copies of records required by Part II.G.1 are maintained at the Mine Site along with other information that is summarized below.

Florence Copper is subject to the requirements of Underground Injection Control (UIC) Permit No. AZ396000001 issued by the United States Environmental Protection Agency (USEPA) on May 1, 1997, and Aquifer Protection Permit (APP) No. 101704 issued by the Arizona Department of Environmental Quality (ADEQ) on June 9, 1997, and last amended on July 16, 2004.

As you are aware, Florence Copper discontinued hydraulic control on September 1, 2004, in order to conduct groundwater quality tests in accordance with Part II.H.2 of the APP and Part II.I.2 of the UIC Permit. A report of the results has been provided to ADEQ and USEPA for review. The pumping wells remain off during the evaluation process. As a result, no extraction flows are reported under Section (b) below, and the water level measurements that are reported in Section (b) reflect natural conditions, not hydraulic control.

**(a) A map showing the current status of the mine.**

Figure 1 shows the current monitoring area including the Point of Compliance (POC) wells and the wellfield. Figure 2 shows the approximate layout of the wellfield and denotes the four well pairs. There are four injection/recovery wells and nine pumping wells. Five observation wells were installed to demonstrate net inward hydraulic gradient for the 90 days required by the permit. Solution injection began on October 31, 1997, and ceased on February 8, 1998.

- (b) **A table and graph showing daily cumulative injection flows and extraction flows in each active mine block over the reporting period.**

Hydraulic control was discontinued on September 1, 2004, for purposes of collecting groundwater samples following a 90-day period of no hydraulic control, and remains discontinued for evaluation of results. Accordingly there are no injection or extraction flows to report.

- (c) **A table and graph comparing average daily head in the four observation wells.**

Although hydraulic control was not maintained during this reporting period, water level measurements were continued by manual measurements in the four observation wells and their nearest inward neighbors. Figure 1 of Attachment 1 and the supporting data show the groundwater elevations in the four well pairs.

- (d) **A table showing POC monitoring wells analytical results and alert levels.**

The attached report *Florence Project Quarterly Compliance Monitoring Report – Fourth Quarter 2005* by Brown and Caldwell and sealed by Ms. Tekla King, Registered Professional Geologist (Attachment 2), contains the POC monitoring records and results. Brown and Caldwell, along with Project personnel, conducted compliance sampling on October 4 through October 6 and October 21, 2005.

Quarterly parameters were conducted for 29 of the 31 POC monitoring wells. POC monitoring wells M32-UBF and M33-UBF were dry and could not be sampled. All results were below the Alert Levels (ALs) or Aquifer Quality Limits (AQLs). The results are discussed in the report.

During the Third Quarter 2005, biennial parameters listed in Part IV, Table III.C. were analyzed. Gross alpha in well O19-GL was reported at  $15.7 \pm 2.1$  picocuries per liter (pCi/L), which is nominally above the AL of 15 pCi/L established in the APP. The sample was analyzed a second time to determine the possible range of laboratory variability. This result was  $13.1 \pm 1.9$  pCi/L, below the AL.

Verification sampling for O19-GL was conducted during the Fourth Quarter 2005 and the result of  $6.3 \pm 1.1$  pCi/L was below the AL and therefore the exceedance was not verified. No further sampling will be required.

- (e) **Results of the monthly analyses of organic in the injectate.**

Organic analyses are not required because no solution was injected during the reporting period.

**(f) Results of monitoring required by 40 CFR 146.33 (b)(1).**

No solution was injected.

**(g) Results of the mechanical integrity tests.**

No mechanical integrity test was required.

**(h) Results of the annular conductivity monitoring.**

Although injection ceased in early 1998, annular conductivity measurements have continued to the present time. A graph showing measurement results for this reporting period is presented in Attachment 1, Figure 2. No unusual conditions were noted.

**(i) Well and core hole plugging and abandonment.**

None of the existing wells and core holes were abandoned during the report period.

**(j) A summary of closure operations during the reporting period.**

There were no closure operations during the reporting period.

Florence Copper, Inc., believes that you will find this report complete and in compliance with all permit conditions. Please contact me at (404) 495-9577 should you have any questions regarding this report.

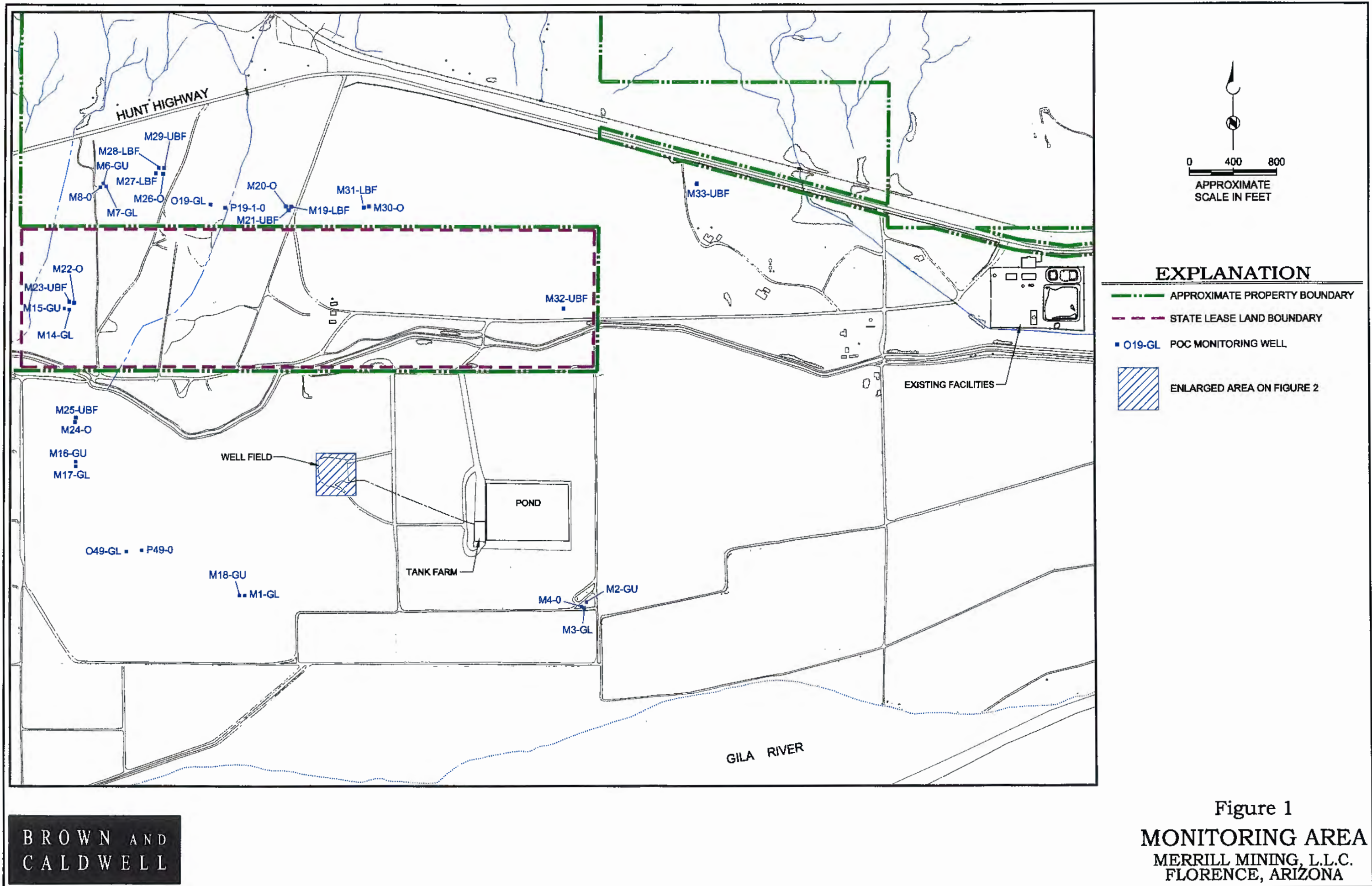
Sincerely,



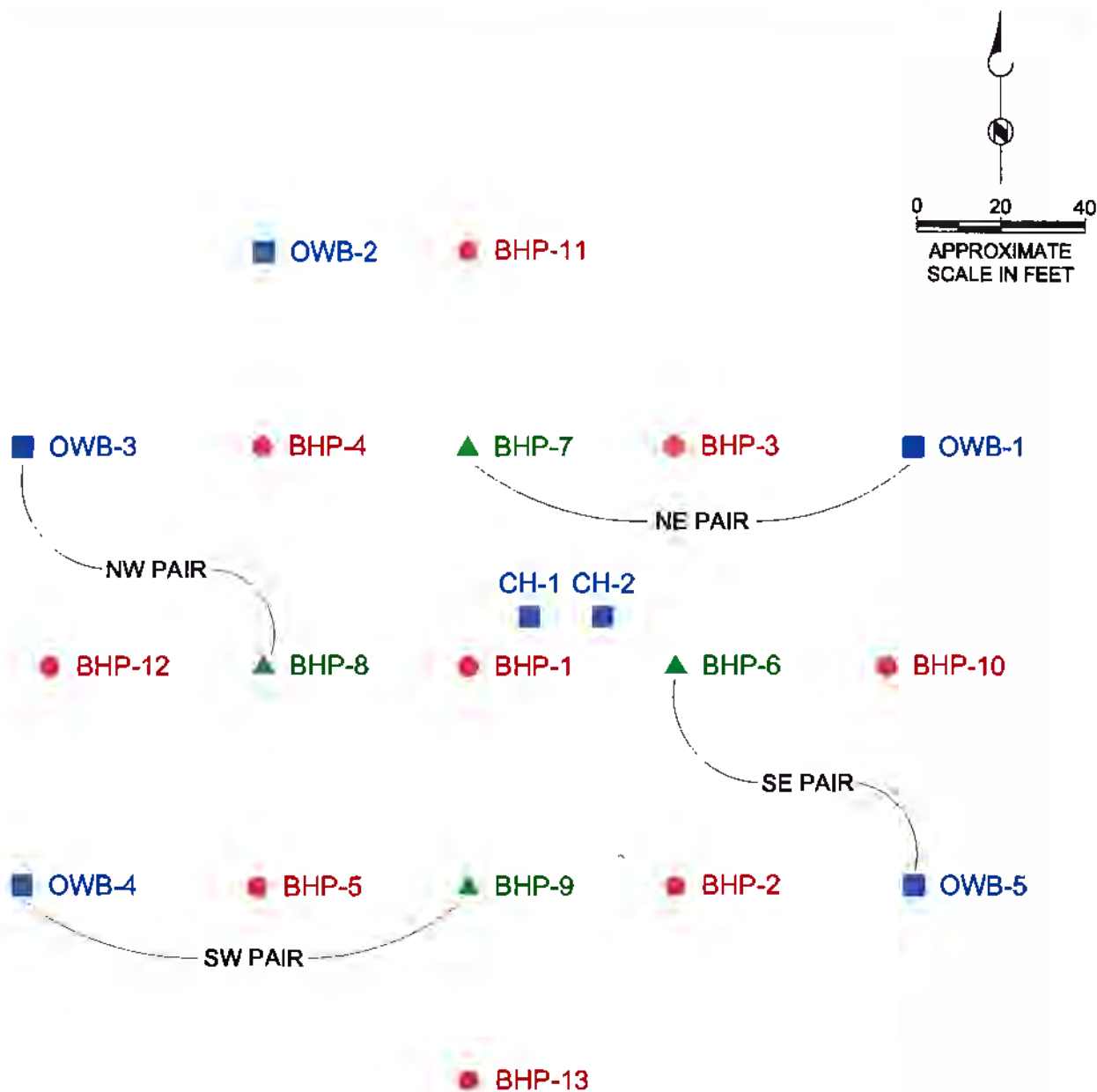
Hugh Nowell  
Corporate Counsel

BAS:lld  
Attachments

cc: Florence Copper File



**BROWN AND  
CALDWELL**



### EXPLANATION

- **BHP-10** PUMPING WELL (CURRENTLY INACTIVE)
- **OWB-2** OBSERVATION WELL
- ▲ **BHP-8** INJECTION / RECOVERY WELL  
(RECOVERY MODE SINCE 1998)

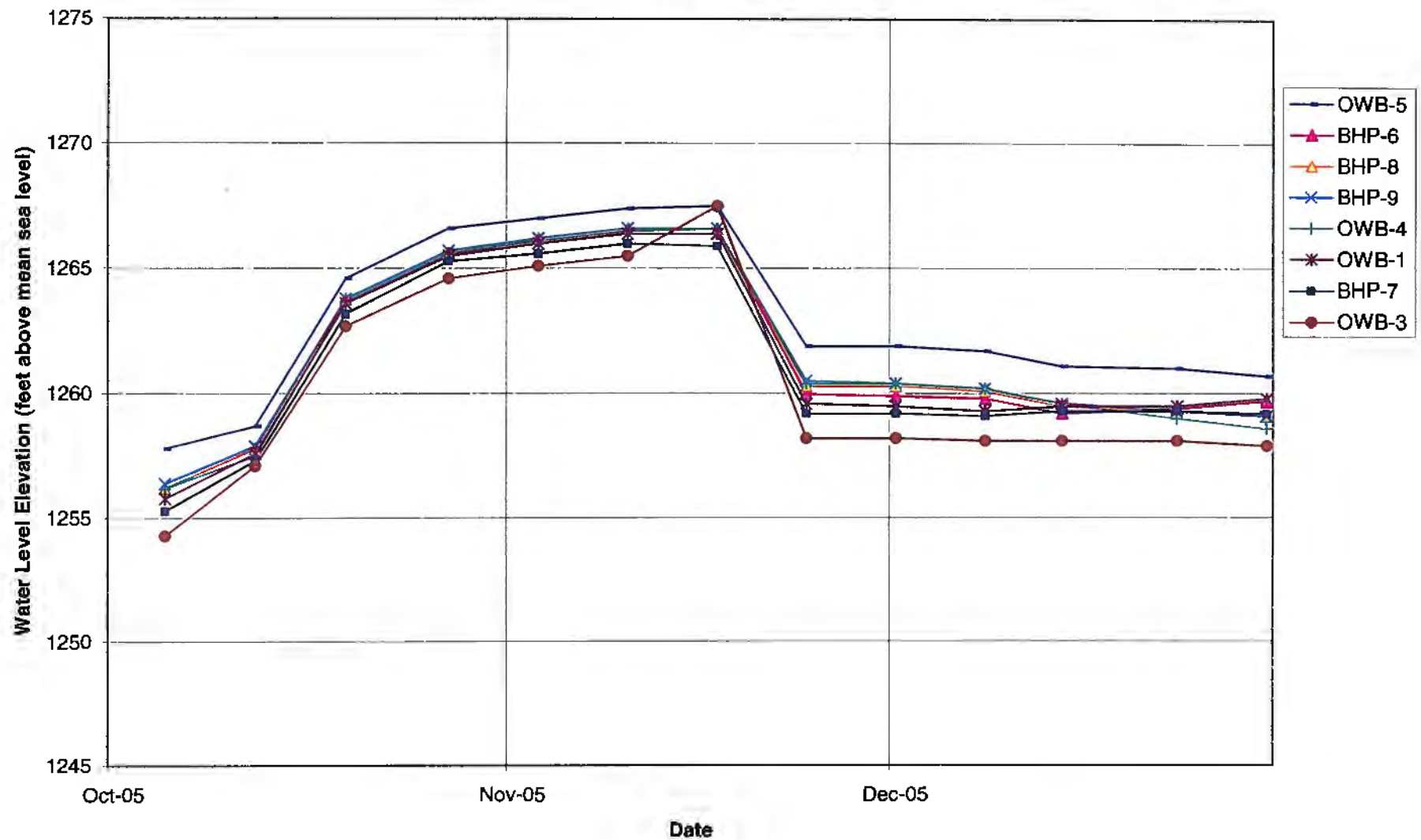
BROWN AND  
CALDWELL

Figure 2  
**WELLFIELD LAYOUT**  
MERRILL MINING, L.L.C.  
FLORENCE, ARIZONA

**ATTACHMENT 1**  
**MINE OPERATIONS MONITORING**



**Figure 1 - Well Field Water Elevations  
Fourth Quarter 2005**

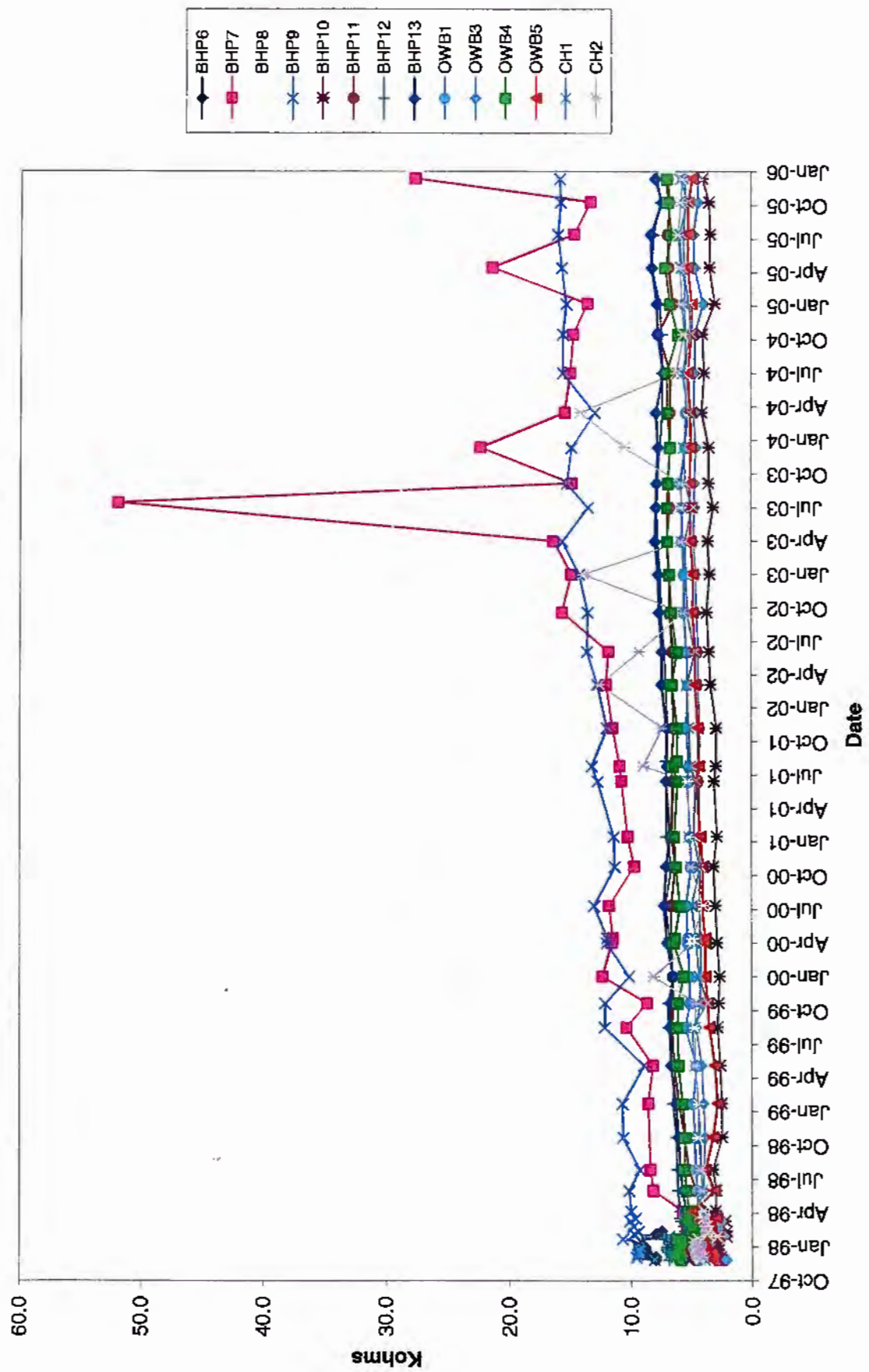




**Well Field Water Elevations  
Fourth Quarter 2005**

Date	BHP-6	BHP-7	BHP-8	BHP-9	OWB-1	OWB-3	OWB-4	OWB-5
10/5/05	1256.2	1255.3	1256.2	1256.4	1255.8	1254.3	1256.2	1257.8
10/12/05	1257.8	1257.3	1257.8	1257.9	1257.6	1257.1	1257.5	1258.7
10/19/05	1263.8	1263.2	1263.8	1263.8	1263.6	1262.7	1263.7	1264.6
10/27/05	1265.5	1265.3	1265.6	1265.7	1265.5	1264.6	1265.6	1266.6
11/3/05	1266.2	1265.6	1266.2	1266.2	1266.0	1265.1	1266.1	1267.0
11/10/05	1266.6	1266.0	1266.6	1266.6	1266.4	1265.5	1266.5	1267.4
11/17/05	1266.6	1265.9	1266.6	1266.6	1266.4	1267.5	1266.6	1267.5
11/24/05	1260.0	1259.2	1260.3	1260.5	1259.6	1258.2	1260.4	1261.9
12/1/05	1259.9	1259.2	1260.3	1260.4	1259.5	1258.2	1260.4	1261.9
12/8/05	1259.8	1259.1	1260.1	1260.2	1259.3	1258.1	1260.2	1261.7
12/14/05	1259.2	1259.3	1259.5	1259.6	1259.5	1258.1	1259.6	1261.1
12/23/05	1259.4	1259.3	1259.3	1259.3	1259.5	1258.1	1259.0	1261.0
12/30/05	1259.7	1259.2	1259.1	1259.1	1259.8	1257.9	1258.6	1260.7
Water Level Elevations (feet AMSL)								

Figure 2 - Annular Resistivity in Kohms



**ATTACHMENT 2**

**POC QUARTERLY COMPLIANCE MONITORING REPORT**

**FLORENCE COPPER PROJECT  
QUARTERLY COMPLIANCE MONITORING REPORT  
FOURTH QUARTER 2005**

***Primary Sampling Activities***

Quarterly compliance monitoring was conducted for the Florence Copper project on October 4 through October 6 and October 21, 2005 (Fourth Quarter 2005). Groundwater sampling and analysis was conducted in accordance with the requirements of Aquifer Protection Permit (APP) Permit Number 101704, Part III.3.d (Compliance Monitoring). Quarterly parameters, as listed in Part IV Table III.B of the APP, were analyzed from the designated Point of Compliance (POC) wells. The quarterly parameters are magnesium, sulfate, fluoride, and total dissolved solids (TDS).

During the Fourth Quarter 2005 sampling event, 29 POC wells were sampled and a total of 116 constituents were analyzed. Two POC wells, M32-UBF and M33-UBF, were dry and could not be sampled. Of the 116 constituents analyzed, none had reported concentrations exceeding the approved alert levels (ALs).

During the Fourth Quarter 2005, O19-GL was sampled a second time to verify a possible exceedance of the radiochemical, gross alpha. The four quarterly parameters were also analyzed.

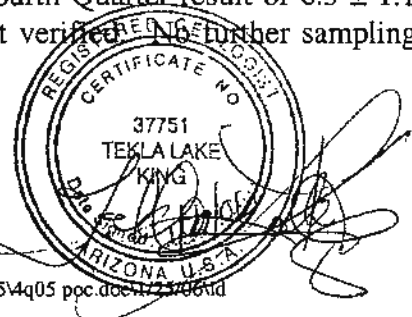
Analyses of the samples were conducted by Aerotech Environmental Laboratories (Aerotech). Analytical results for the POC wells for the quarterly parameters are provided in Table 1 and field parameters measured during sampling are indicated in Table 2.

***AL Exceedances and Verification Sampling***

Part II.F.4 of the APP (AL, Aquifer Quality Limit [AQL], and Discharge Limit [DL] Contingencies) requires verification sampling for an AL exceedance. There were no AL exceedances during this quarterly sampling. No verification sampling was required.

The Third Quarter of 2005 was the biennial sampling event during which samples are analyzed for common ions, radiochemicals, organics, and trace metals. Gross alpha in well O19-GL was reported at  $15.7 \pm 2.1$  picocuries per liter (pCi/L), which is nominally above the AL of 15 pCi/L established in the APP. The sample was analyzed a second time to determine the possible range of laboratory variability. This result was  $13.1 \pm 1.9$  pCi/L, below the AL.

In order to verify that the concentration of gross alpha was below the AL in well O19-GL, the well was resampled during the Fourth Quarter of 2005. The Fourth Quarter result of  $6.3 \pm 1.1$  pCi/L was below the AL and therefore the exceedance was not verified. No further sampling will be required.



### ***Contingency Sampling Plan to be Implemented During First Quarter 2006***

There were no AL exceedances verified during this quarterly sampling. No contingency sampling plan is required during the First Quarter of 2006.

### ***Results of Contingency Sampling Plan Implemented from Third Quarter 2005***

Contingency sampling plans are only required in the event of verified exceedances occurring during the operational life of the mine. Since commercial operations have not begun, no contingency sampling plan was required during the Fourth Quarter of 2005.

### ***Issues***

There were no other issues to report during the Fourth Quarter 2005.