APPENDIX E

GEOLOGIC BLOCK MODEL

The Lynne open pit design involves eleven mining benches, each 40 feet in height, proceeding to a total depth of approximately 440 feet. The geologic model is consequently based on blocks 40 feet in height with sides 20 feet across. The model was revised on several occasions to improve the interpolation of metal values and tonnage factors in the high grade core of the orebody, which is associated with an inflection in the strike of the deposit. Revisions were also made to account for the flat-lying domain in the western part of the proposed open pit, and for the flaring out of mineralized zones to the west. Both of the latter characteristics are influenced by the tonalite promontory which emerges on the 1200 bench on section 9900E.

In the heart of the orebody where drill hole azimuths intersect the strike of the mineralized units at angles of 45 to 50 degrees, the distance between correlative intercepts on adjacent sections is on the order of 135 feet rather than 100 feet. The greater distance causes the interpolation to be very sensitive to the orientation of the major axis. This problem is not as critical in the eastern and western parts of the deposit, where the drilling azimuths cut the strike at angles of 60 to 72 degrees. The major and intermediate axes of the search

ellipsoids were extended to 150 feet to account for the greater strike length, and to account for the wide spacing between intercepts in several of the early holes.

The geologic model was most recently revised in January 1992 with the cooperation of John Boyce and Dan Niosi. As described below, the model describes the deposit in terms of three fundamental orientations. A fourth subdomain accounting for the flat-lying block in the western part of the orebody impinges on the central and western domains.

Domain	Grid Location	Elevation	Strike, Dip	Plunge
East:	10150 -10700E	Inclusive	120 , 32	12 E
Center:	9850 -10150E	Inclusive*	133 , 44	--
West:	9300 - 9850E	Inclusive*	108 , 48	10 ENE
Flat:	9550 - 9940E, 10940N-11050N	1200-1300'	108 , 0	15 ESE

This model was used to calculate the mineable reserves reported in the following section. As anticipated, the revisions improved the interpolation of metal values and tonnage factors in the core of the deposit. For a variety of reasons, some mineralized units in the upper levels of the deposit were not interpolated. Some narrow units were not interpolated because they do not pass through the center point of a block. Modeling of the uppermost levels is also complicated by the flat lying or south facing orientation of units on the top and south flank of the orebody, and the abundance of disseminated mineralization where units narrow or flare out. Inclusion of these units in the mineable reserve would result in an estimated increase of 55,000 to perhaps 85,000 tons.

The drilling of two additional holes on sections 9800E and 10,000E should be considered prior to the completion of a detailed mining plan. On section 10,000E, the mineralized intercepts between holes LYN90-1 and -2 are separated by 130 to 160 feet. An additional hole between these two would better define the limits of mineralization in the uppermost and footwall domains, and would improve interpolation of metal values and tonnage factors in the high-grade core. On section 9,800E, the intercepts between LYN90-4 and -6 are 156 to 172 feet apart. The high grade core of the orebody appears to project between these two holes; an additional hole might identify an appreciable increase in tonnage and grade in that domain.

The tonnage calculated by the block model interpolation is similar to that calculated for the geologic reserve, but the metal grades are appreciably lower. For example, the zinc grade of 9.34% calculated by the block model is six to seven percent lower than the 9.97% Zn calculated on a sectional basis for the geologic reserves. Discrepancies in grade are common between these types of reserve calculations. It is uncertain to what extent the difference in calculated grades at Lynne may be attributable to difficulties in modeling the deposit caused by the oblique nature of the drill intercepts and the consequent separation of 115 to 135 feet between correlative intercepts.