Technical Review of Recent Exploration Activities on the Dixie Lake Project, Red Lake, Ontario

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Executive Summary

The Dixie Lake Property is a gold exploration property in the Red Lake mining district of Ontario, currently held under a 50% Joint Venture agreement between Alberta Star Development Corporation, as the funding partner, and Fronteer Development Group Inc., as the operator. SRK Consulting has prepared this report to document recent exploration activities and geological modeling on the property, following the guidelines of the National Instrument 43-101 “Standards of Disclosure for Mineral Projects”.

Alberta Star has incurred expenditures in excess of $1,170,000, in completing three programs of drilling (Fall 2003, Winter 2004, Spring 2004) and exploration work on the Dixie Lake property, for a total of 6,594 metres in 22 drillholes. Additional work includes a ground magnetometer survey, and collection of MMI soil samples that remain to be analyzed. Recent work has focused on the 88-04 Zone, originally discovered by Mutual Resources Ltd in 1988, while testing a coincident Max-Min conductor and magnetic anomaly. The zone is also characterized by strong chargeability and high resistivity anomalies.

The Dixie Lake property is underlain by rocks assigned to the Heyson thoeiitic sequence of the Confederation assemblage by recent investigators from the Geological Survey of Canada (Sanborn-Barrie et al., 2001; 2004). This sequence consists of thick felsic volcanics, including tuffs, rhyolite flows and flow breccias, interlayered with pillowed mafic flows, quartz-feldspar crystal tuff and plagioclase-phyric basaltic andesites, with local, argillaceous interflow sediments associated with varying amounts of quartz-magnetite iron formation.

Alberta Star and Fronteer successfully predicted and confirmed, through the use of structural measurements in oriented drill core, that the 88-04 zone contains a gold-enriched shoot, coinciding with enhanced silicification and thickness, that plunges sub-parallel to the dominant stretching lineation. Their work unequivocally demonstrates a strong, predictable, structural control on the mineralization. Visible gold is not uncommon within this zone and several of the best assay results exceed 36 g/t Au over true widths of approximately 0.3 to 0.7 metres, but also include wider intercepts, up to 2.6 metres true width, averaging better than 13 g/t Au.

3D geological modeling, in conjunction with structural interpretation of airborne and ground magnetic data indicate that the 88-04 zone is a narrow, slightly curved body entrained in a wide D2 high strain zone. Fabric relationships show that the zone is transposed by this deformation, rather than sheared by it, and that enhanced silicification, thickness, and gold mineralization are most likely controlled by dilational processes occurring within a minor fold hinge along the 88-04 zone. This model constrains the targeting focus to larger fold hinges occurring at either end of the 88-04 zone, as well as, along an adjacent unit with similar magnetic characteristics to the 88-04 zone.

3D grade interpolations generated by Leapfrog software indicate that the gold distribution within the silicified shoot is coherent and well-defined within the 1 and 2 g/t Au isosurfaces. At 2 g/t Au the shoot is pipe-like and at >3 g/t Au the grade distribution is discontinuous down the plunge of the shoot. No further work on the silicified shoot is recommended at this time, rather, a strategic focus on the higher priority targets defined by the new folding model should form the basis of future work.
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