

2024 TECHNOLOGY TRANSFER AWARD WINNER

LEVERAGING EPRI'S SITING GUIDE FOR NEW NUCLEAR DEVELOPMENT

SALT RIVER PROJECT AGRICULTURAL IMPROVEMENT AND POWER DISTRICT

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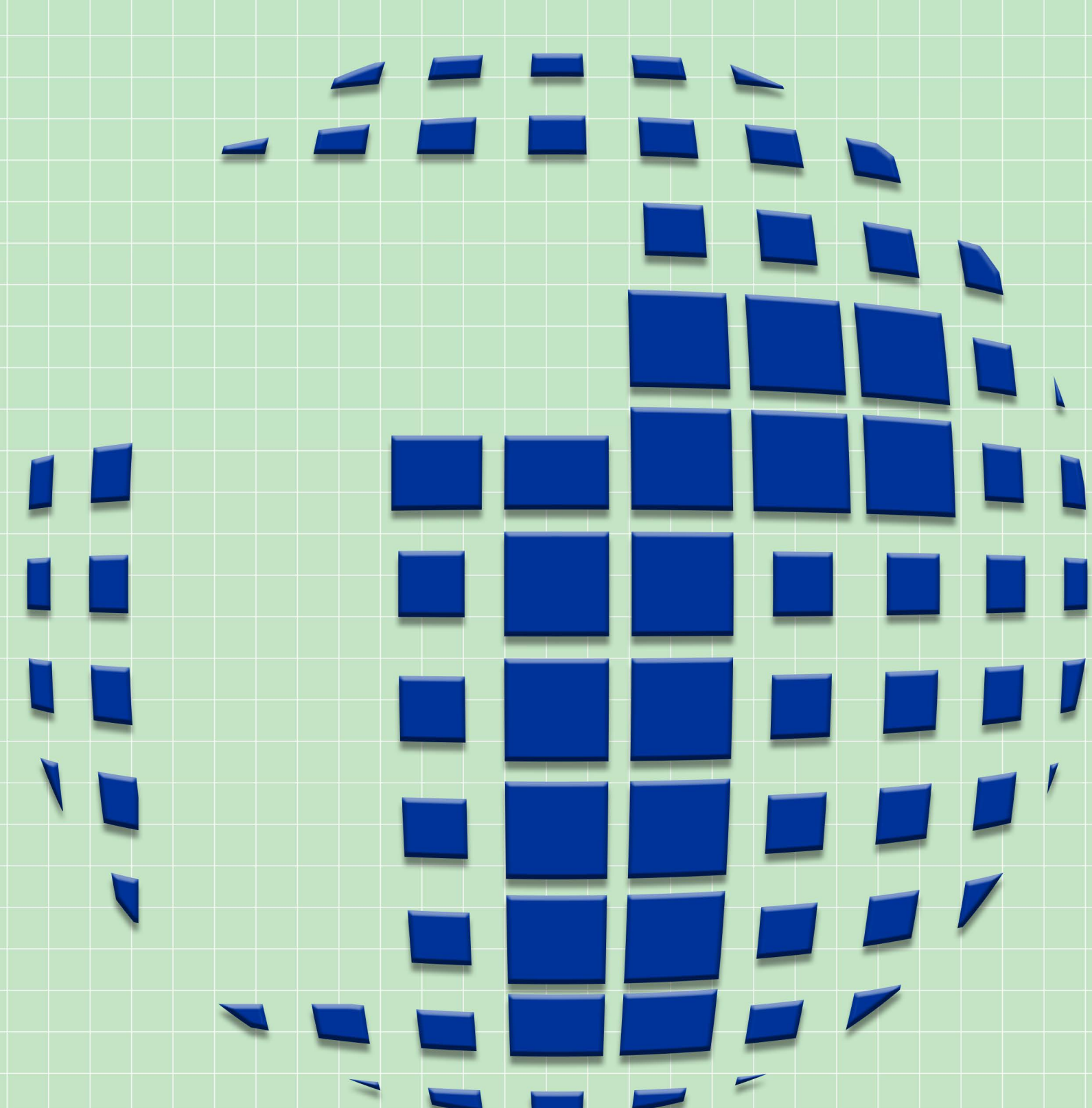
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TECHNOLOGY TRANSFER AWARD

Bruce Power and Salt River Project Apply EPRI's Siting Guide for New Nuclear Development



The deployment of commercial nuclear energy facilities requires rigorous approval processes for site preparation, construction, and operation by regulatory authorities. Central to this process is the selection of a site that meets stringent regulatory requirements, aligns with business objectives, and undergoes an alternative means assessment informed by engagement with Indigenous Nations and Communities and the public. Recognizing the complexities of this process, two utilities, Bruce Power and Salt River Project (SRP), collaborated with EPRI to apply its advanced methodologies to support nuclear site selection to inform regulatory processes. This structured, scientifically rigorous framework helped innovate site selection with a focus on sustainability, environmental stewardship, and engagement.

Benefits

Using EPRI's Siting Guide, Bruce Power conducted thorough analyses, integrating technical, environmental, socio-economic criteria, and cultural considerations into its decision-making process. The process provides fundamental information to support engagement with Indigenous Nations and Communities, the public and regulators. As the first nuclear project in Canada to enter into the federal impact assessment process, Bruce Power has utilized EPRI's Siting Guide to support regulatory requirements, and provide fundamental information to support engagement.

For SRP, adhering to the methodologies in EPRI's Siting Guide and Technology Assessment Guide helped save significant time and resources as it evaluated advanced nuclear reactor technology as a replacement for its coal-fired Coronado Generating Station, avoiding the need to create new evaluation processes. SRP's findings, made publicly available, provide a replicable model for other utilities, fostering transparency and enabling efficient transitions to cleaner energy sources. In addition, this project contributed to a new EPRI guide focused on coal-to-nuclear transitions, further advancing industry practices.

Application

Bruce Power collaborated with EPRI to conduct comprehensive site evaluations, addressing regulatory, environmental, social, and cultural considerations. With EPRI's support, the team has progressed a multi-criteria analysis, leveraging Geographic Information System (GIS) to ensure compliance with regulatory requirements. This approach has enabled valuable knowledge transfer and has established a replicable model for future nuclear site projects.

EPRI's structured guides provided a critical foundation that helped SRP assess advanced nuclear reactors as part of its coal-to-nuclear transition, achieving efficient evaluations that contributed to the development of new tools for industry-wide use. This project advanced the transition from coal to nuclear energy, establishing a practical approach for utilities navigating similar transitions.

Both projects exemplify how EPRI's rigorous methodologies and collaborative efforts drive innovation and facilitate sustainable energy transitions across the nuclear sector. The related research is available to all EPRI members interested in these applications:

- Advanced Nuclear Technology: Site Selection and Evaluation Criteria for New Nuclear Energy Generation Facilities (Siting Guide), 3002023910
- Advanced Nuclear Technology: Owner-Operator Reactor Technology Assessment Guide, 3002025344
- From Coal to Nuclear: A Practical Guide for Developing Nuclear Energy Facilities in Coal Plant Communities, 3002026517

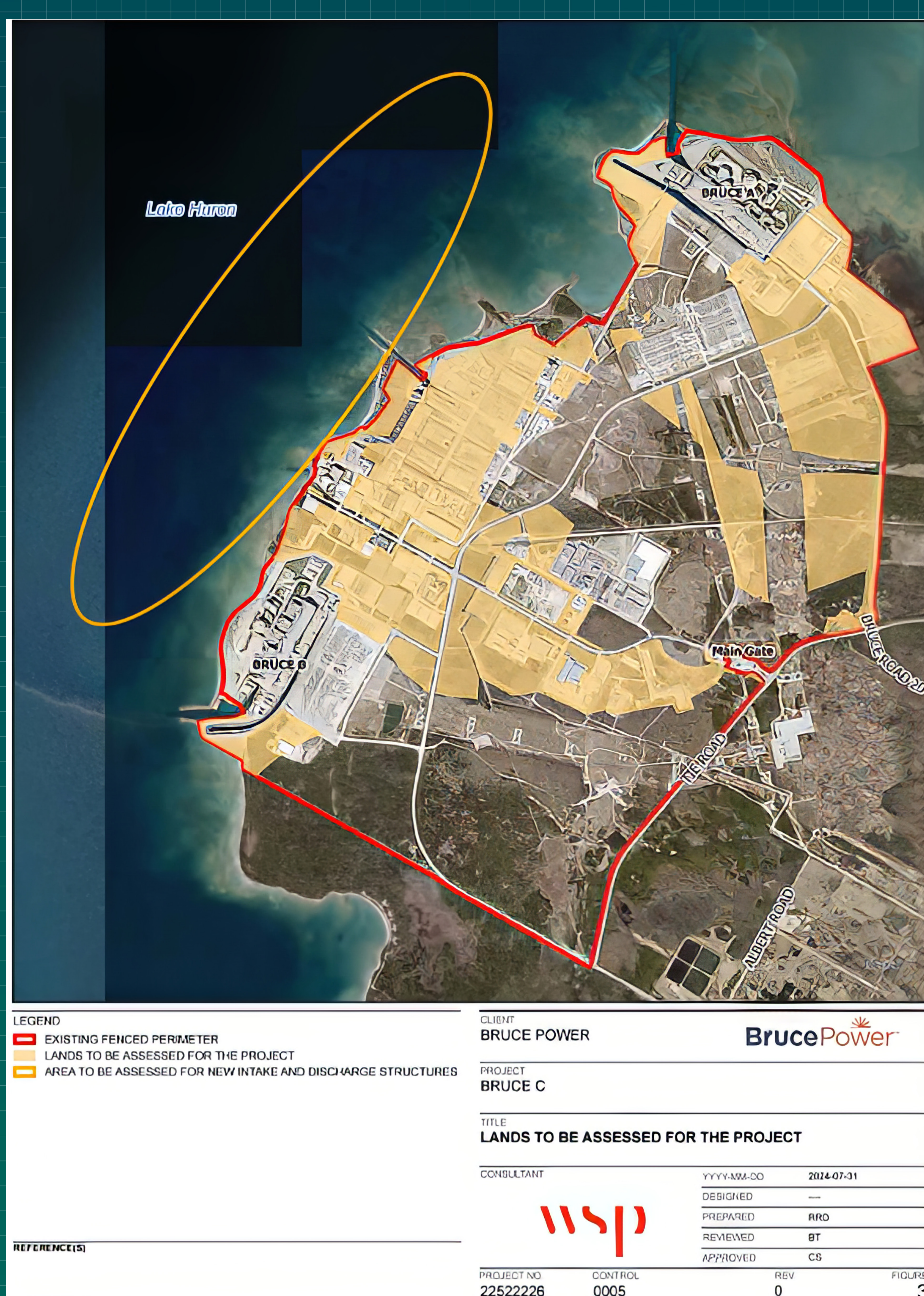


Figure 1
Bruce Power proposed site

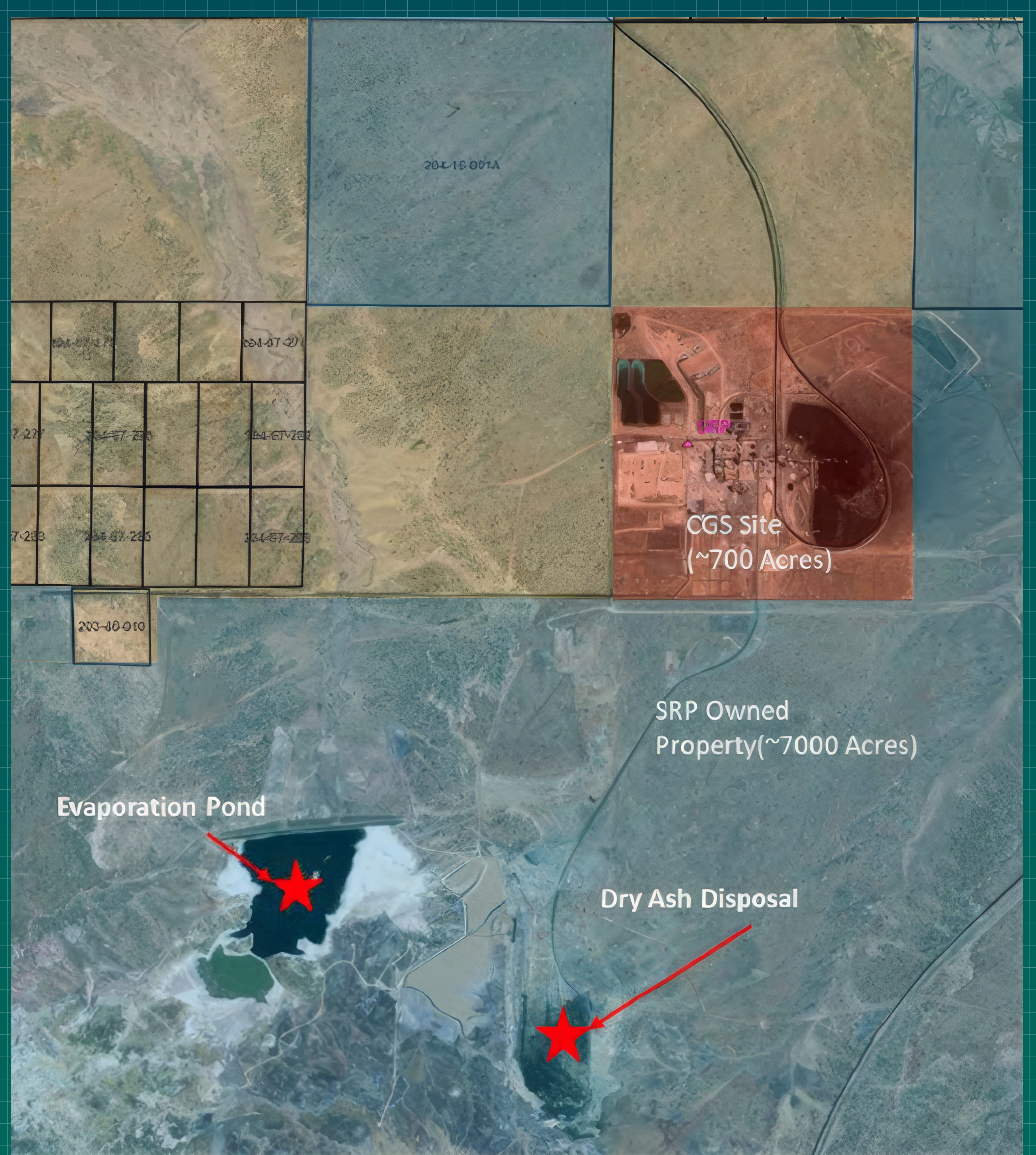


Figure 2
Salt River Project proposed site

