Dan McCarthy – EarthSoft Account Manager

- Hydrogeologist/Environmental Consultant for 25 years

- 30+ years working with environment data management systems

- Implemented data governance programs for environmental, asset liability and product stewardship management systems

- Member of ITRC's Environmental Data Management Best Practices Team

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Agenda

- Overview
  - What is data governance?
  - What are the elements of a data governance program?
  - What is data governance for EQuIS?
  - How can EarthSoft help?

- Lessons Learned Examples
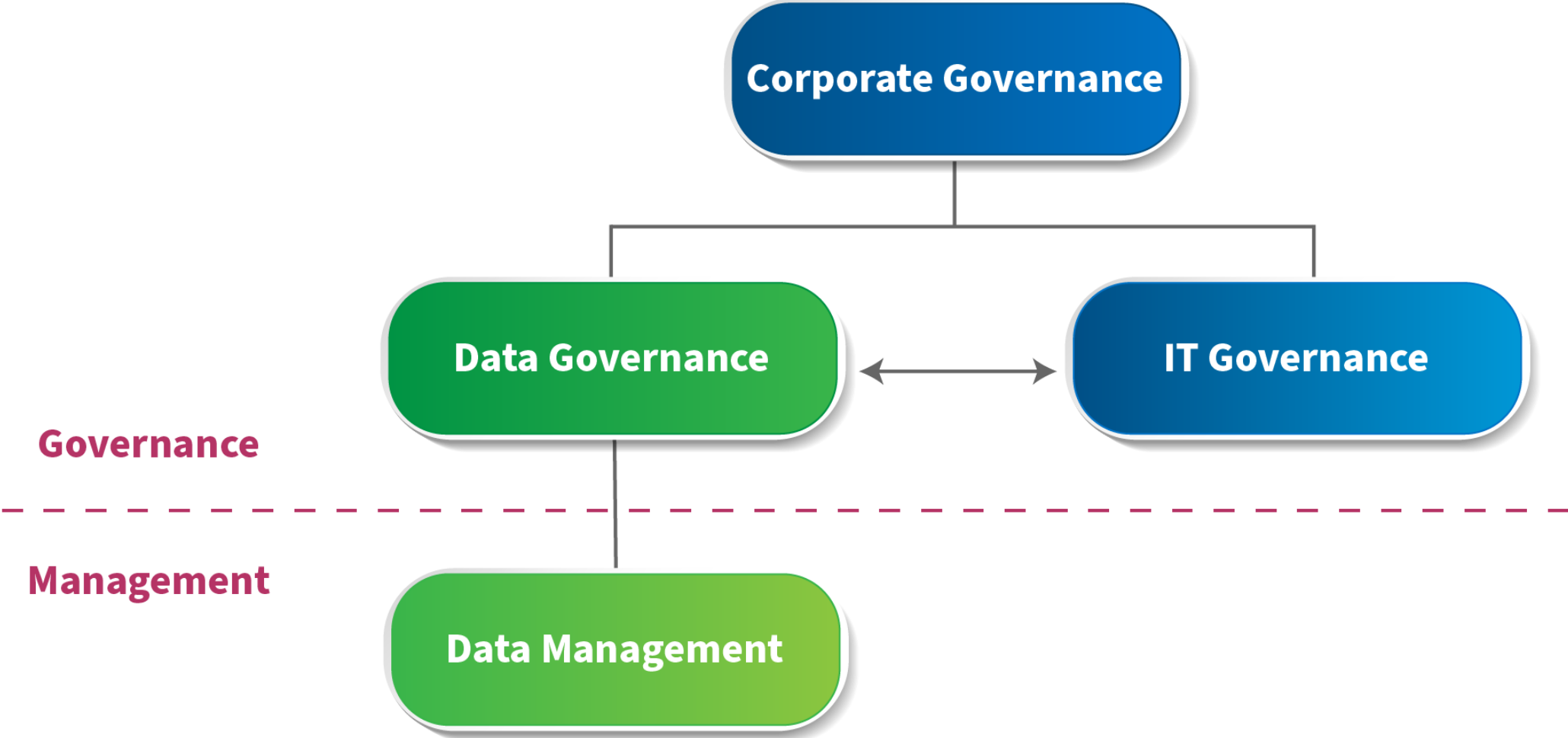
- EQuIS Data Governance

EQuIS Data Governance – What Is It?

Planning, monitoring, and enforcement for EQuIS Implementations.
EQuIS data assets must be protected and managed.

Data Governance
Ensuring that Data
Are Managed

Data, Information, and Content Lifecycles

Data Management
Managing Data
to Achieve Goals

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Elements of Data Governance Program

Business Goals & Drivers

Principles

Policies

Standards & Procedures

Metrics

Issues & Change Management

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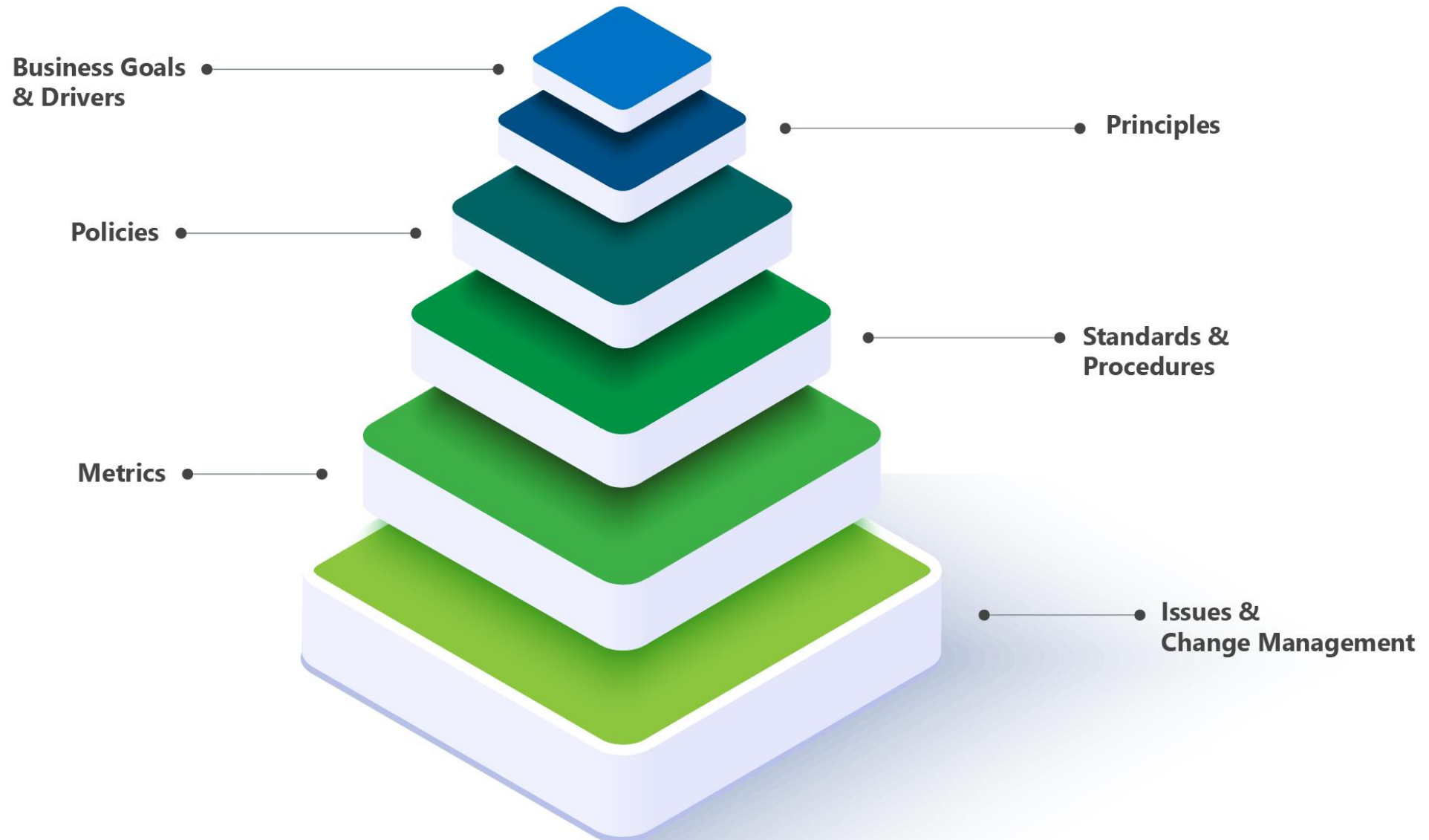
Data Governance Business Drivers

➢ **Growth / Business Agility** – Arrive at decisions and recommendations faster with increased efficiency and accuracy.

➢ **Lower Cost / Operational Efficiency** – Streamline workflows and automate data-related business processes.

➢ **Risk Management / Compliance and Security** – Define data standards, policies, and processes with clear roles and responsibilities to ensure compliance internal and external policies and regulations.

➢ **Improve Quality** – Ensure data are accurate, complete, timely, consistent with all requirements and business rules, and relevant for a given use.

➢ **Sustainability** of the investment.

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EarthSoft Business Drivers for EQuIS Data Governance

➢ **Growth / Business Agility** – EarthSoft wants to help our EQuIS end users grow their operations with increased efficiency and accuracy.

➢ **Lower Cost / Operational Efficiency** – EarthSoft seeks to streamline EQuIS workflows and automate EQuIS data-related business processes.

➢ **Risk Management / Compliance and Security** – Want successful EQuIS implementations to reduce risks and ensure compliance with internal and external policies and regulations.

➢ **Improve Quality** – Quality is in our name and a key value-add of our software…Quality data, quality implementations, quality reports…

➢ **Sustainability** of our clients' EQuIS investment.

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Lesson 1: Regulated Utility

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Challenges

- Multiple business units

- Inconsistent approach to valid values

- Existing field processes were optimized for data collection, but had significant office labor post field event to roll up to management

- Laboratory Program in place created resistance to change

Solutions

- ✓ Committee to align valid values

- ✓ Engage with field personnel early

- ✓ Demonstrate time and cost savings to Lab Program

Lesson Learned: A team is stronger than an individual champion

Lesson 2: Government Research Facility

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Challenges

- Lots of legacy data, with ownership of that data

- Highly structured EDMS in place, but was bespoke and few understood the schema

- Data Quality program had unique vocabulary

- Significant number of nuanced laboratory contracts

- Programs had nuanced sampling requirements

Solutions

- ✓ Document valid values with meaningful descriptions

- ✓ Provide a path for the bespoke experts for the future

- ✓ Plan for course-correction during EDMS implementation

Lesson Learned: Change will happen. Leave no one behind. Plain language.

**Lesson 3:
Oil and Gas
(Among Others)**

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Challenges

- Implementation went OK

- Systems were monitored by a single individual

- Individual left, governance languished, and program ground to a halt

Solutions

- ✓ Design governance plans with fault tolerance

- ✓ Make data providers own the quality of their deliverables

- ✓ Socialize location of governance documents

Lesson Learned: Governance is bigger than one person

**Lesson 4:
Mining Company**

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Challenges

- No centralized platform for management or analytics

- Lack of consistency in data standards (collection methods, QA/QC, validation)

- Existing systems did not integrate well

- Majority of operations and surveillance performed remotely by third parties

- Lack of efficiency in sample collection/time burned on sample planning

- "We are very good at having standard processes and procedures for H + S but fall short on the E"

Solutions

- ✓ Keep solutions simple

- ✓ Invite everyone to the party (avoid myopia)

- ✓ Start develop governance approach early

- ✓ Find the right tool to visualize metrics

Lesson Learned: See the big picture (transactional vs. data as asset)

Lessons Learned Summary

- ✓ A team is stronger than any individual champion. Governance is bigger than one person or department.

- ✓ Leave no one (department) behind

- ✓ Standards are needed

- ✓ Change Management

- ✓ Use plain language

- ✓ See the big picture (transactional vs. data as asset)

- ✓ Select the right Metrics

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Ongoing

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Data Governance

EQuIS Data Governance Documents

- Covers some of same topics as ITRC, but specific to EQuIS nomenclature and products

- Suggested Master Data and Reference Data
  - Sample Planning Module
  - Data Qualification Module

- Establish Format Specifications

- Guidelines for Generating High Quality Data

- Business Intelligence / Metrics

- Historical Data Migration Best Practices and Tools
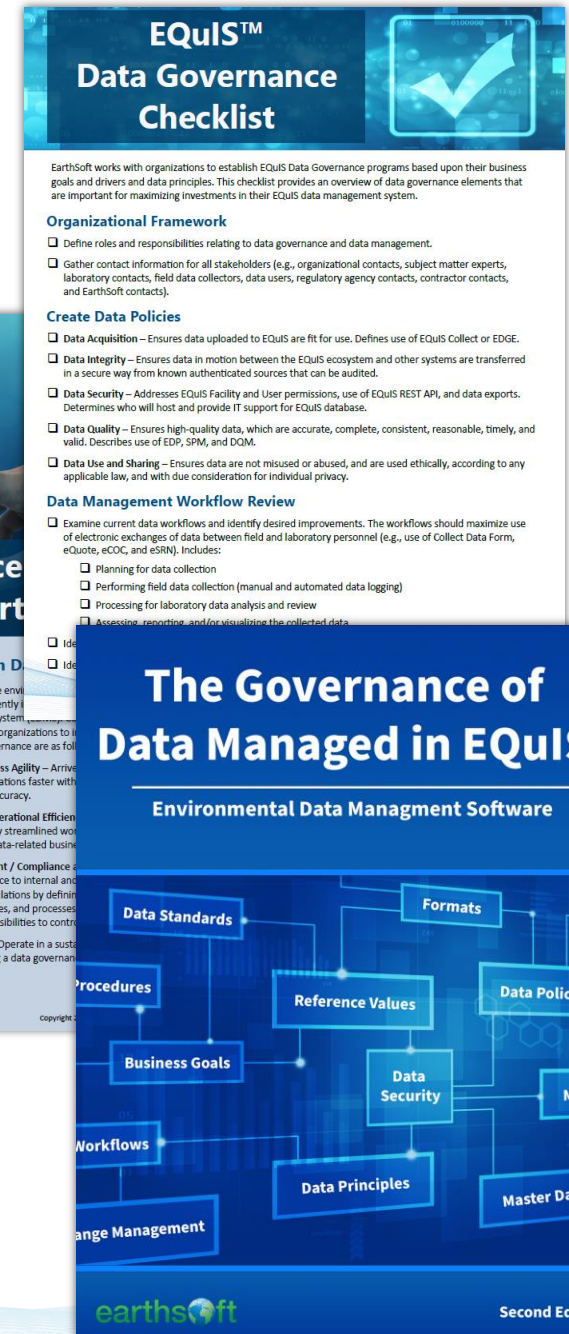
EQuIS Data Governance

- **Most data governance issues are data quality issues**

- Releasing Second Edition of
  The Governance of Data Managed in EQuIS

- Phased Distribution

Named Recipients

Collaborating Industrials and Government Clients

Business Partners

Preferred Lab Program Partners

Client members ITRC, ICEDM, etc.

General Release

The Governance of Data Managed in EQuIS™

Environmental Data Managment Software

Data Standards | Formats
Procedures | Reference Values | Data Policies
Business Goals | Data Security | Metrics
Workflows | Data Principles
...ange Management | Master Data

earthsoft | Second Edition

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Preferred Laboratory Program

➢ Framework for analytical data workflows

➢ Standardize data governance workflows and processes

➢ Establish protocols and documented best practices

➢ Standardize workflows for situations with multiple labs and consultants

➢ Lab and Field Team Scorecards
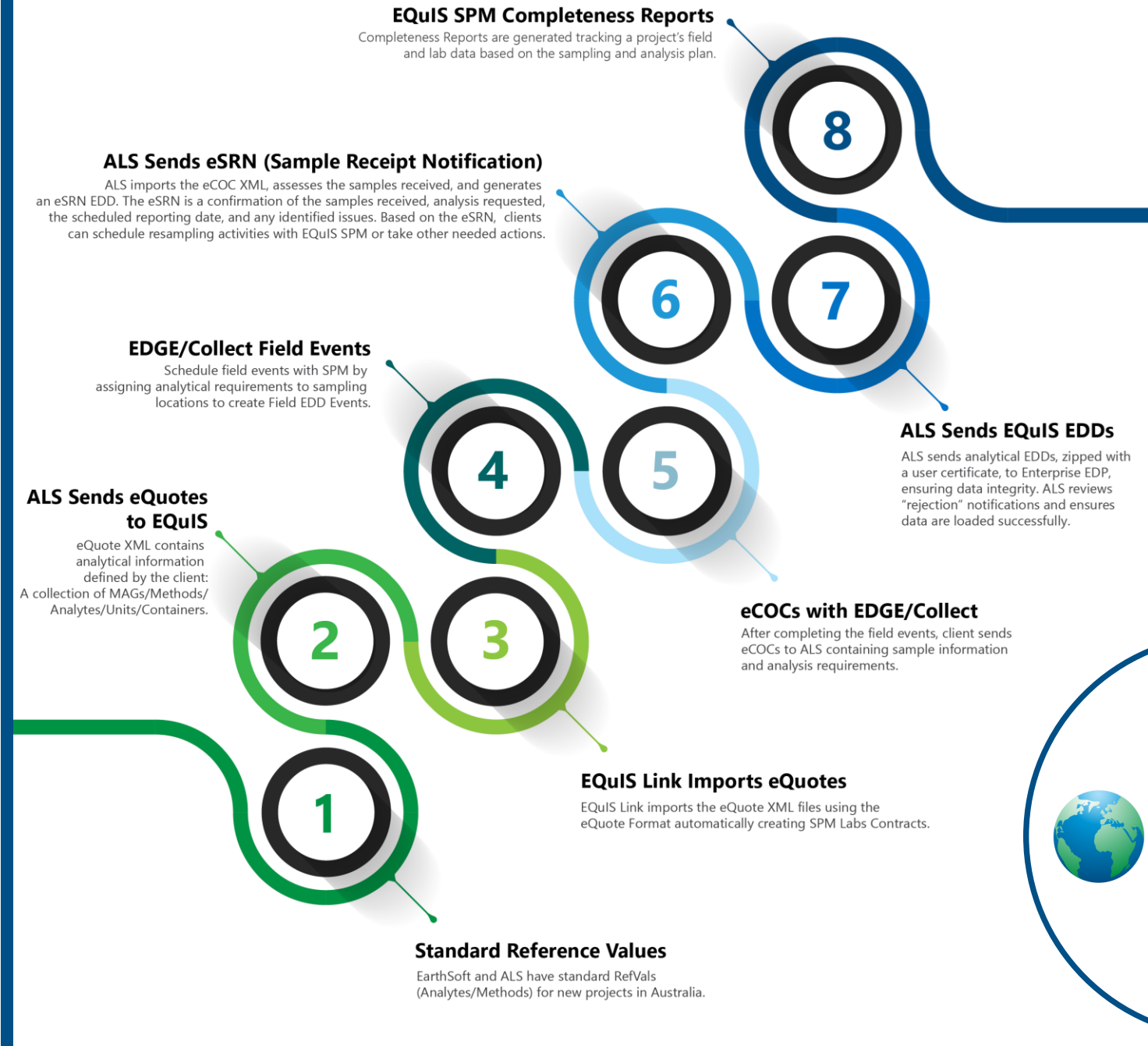
- Compare Lab A with 1/100 failed EDDs to Lab B with 3/1,000 failed EDDs
- Rank Reasons for Failing EDDs

Australia Example

EQuIS Analytical Data Workflow

EQuIS SPM Completeness Reports
Completeness Reports are generated tracking a project's field and lab data based on the sampling and analysis plan.

ALS Sends eSRN (Sample Receipt Notification)
ALS imports the eCOC XML, assesses the samples received, and generates an eSRN EDD. The eSRN is a confirmation of the samples received, analysis requested, the scheduled reporting date, and any identified issues. Based on the eSRN, clients can schedule resampling activities with EQuIS SPM or take other needed actions.

EDGE/Collect Field Events
Schedule field events with SPM by assigning analytical requirements to sampling locations to create Field EDD Events.

ALS Sends EQuIS EDDs
ALS sends analytical EDDs, zipped with a user certificate, to Enterprise EDP, ensuring data integrity. ALS reviews "rejection" notifications and ensures data are loaded successfully.

ALS Sends eQuotes to EQuIS
eQuote XML contains analytical information defined by the client: A collection of MAGs/Methods/Analytes/Units/Containers.

eCOCs with EDGE/Collect
After completing the field events, client sends eCOCs to ALS containing sample information and analysis requirements.

EQuIS Link Imports eQuotes
EQuIS Link imports the eQuote XML files using the eQuote Format automatically creating SPM Labs Contracts.

Standard Reference Values
EarthSoft and ALS have standard RefVals (Analytes/Methods) for new projects in Australia.

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Preferred Laboratory Program

Questions?

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