# Assertion by Management of the Government of Alberta, Software Delivery

We are responsible for designing, implementing, operating, and maintaining effective controls within the Government of Alberta, Department of Energy and Minerals' (Alberta Energy and Minerals) Petrinex System (Petrinex or System) throughout the period April 1, 2024, to March 31, 2025, to provide reasonable assurance that Alberta Energy and Minerals' service commitments and system requirements were achieved based on the trust services criteria relevant to security, availability, processing integrity, and confidentiality (applicable trust services criteria) set forth in TSP section 100, *2017 Trust Services Criteria for Security, Availability, Processing Integrity, Confidentiality, and Privacy,* in AICPA Trust Services Criteria. Our description of the boundaries of the system is presented in attachment A and identifies the aspects of the system covered by our assertion.

We have performed an evaluation of the effectiveness of the controls within the system throughout the period April 1, 2024, to March 31, 2025, to provide reasonable assurance that Alberta Energy and Minerals' service commitments and system requirements were achieved based on the applicable trust services criteria. Alberta Energy and Minerals' objectives for the system in applying the applicable trust services criteria are embodied in its service commitments and system requirements relevant to the applicable trust services criteria. The principal service commitments and system requirements related to the applicable trust services criteria are presented in attachment B.

There are inherent limitations in any system of internal control, including the possibility of human error and the circumvention of controls. Because of these inherent limitations, a service organization may achieve reasonable, but not absolute, assurance that its service commitments and system requirements are achieved.

We assert that the controls within the system were effective throughout the period April 1, 2024, to March 31, 2025, to provide reasonable assurance that Alberta Energy and Minerals' service commitments and system requirements were achieved based on the applicable trust services criteria.

**Government of Alberta, Software Delivery**

Alan.Sang Digitally signed by Alan.Sang
Date: 2025.05.28 10:52:26 -06'00'

Alan Sang for
Ting Zuge
Executive Director, Software Delivery
Digital Design and Delivery

May 19, 2025

Doane Grant Thornton

## Independent Service Auditors

To: The Government of Alberta, Software Delivery

## Scope

We have examined the Government of Alberta (GoA) accompanying assertion titled "Assertion by Management of the Government of Alberta, Energy and Minerals" (assertion), that the controls within the Petrinex System (Petrinex or System) were effective throughout the period April 1, 2024, to March 31, 2025, to provide reasonable assurance that GoA's principal service commitments and system requirements were achieved based on the criteria relevant to security, availability, processing integrity, and confidentiality (applicable trust services criteria) set forth in TSP section 100, 2017 Trust Services Criteria for Security, Availability, Processing Integrity, Confidentiality, and Privacy, in AICPA, Trust Services Criteria.

## Service organization's responsibilities

GoA is responsible for its service commitments and system requirements and for designing, implementing, and operating effective controls within the system to provide reasonable assurance that GoA's service commitments and system requirements were achieved. GoA has also provided the accompanying assertion about the effectiveness of controls within the system. When preparing its assertion, GoA is responsible for selecting, and identifying in its assertion, the applicable trust services criteria and for having a reasonable basis for its assertion by performing an assessment of the effectiveness of the controls within the system.

## Service auditor's responsibilities

Our responsibility is to express an opinion, based on our examination, on management's assertion that controls within the system were effective throughout the period to provide reasonable assurance that the service organization's service commitments and system requirements were achieved based on the applicable trust services criteria. Our examination was conducted in accordance with attestation standards established by the AICPA. Those standards require that we plan and perform our examination to obtain reasonable assurance about whether management's assertion is fairly stated, in all material respects. We believe that the evidence we obtained is sufficient to provide a reasonable basis for our opinion.

We are required to be independent and to meet our other ethical responsibilities in accordance with relevant ethical requirements relating to the engagement.

Our examination included:

- Obtaining an understanding of the system and the service organization's service commitments

and system requirements;

- Assessing the risks that controls were not effective to achieve GoA's service commitments and system requirements based on the applicable trust services criteria; and

- Performing procedures to obtain evidence about whether controls within the system were effective to achieve GoA's service commitments and system requirements based on the applicable trust services criteria.

Our examination also included performing such other procedures as we considered necessary in the circumstances.

## Inherent Limitations

There are inherent limitations in the effectiveness of any system of internal control, including the possibility of human error and the circumvention of controls.

Because of their nature, controls may not always operate effectively to provide reasonable assurance that the service organization's service commitments and system requirements were achieved based on the applicable trust services criteria. Also, the projection to the future of any conclusions about the effectiveness of controls is subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies and procedures may deteriorate.

## Opinion

In our opinion, management's assertion that the controls within Alberta Energy and Minerals' Petrinex system were effective throughout the period April 1, 2024, to March 31, 2025, to provide reasonable assurance that GoA's service commitments and system requirements were achieved based on the applicable trust services criteria is fairly stated, in all material respects.

Doane Grant Thornton LLP

Doane Grant Thornton LLP

Chartered Professional Accountants

Edmonton, AB

May 19, 2025

## Attachment A:

## Alberta Energy and Minerals' Description of the Boundaries of Petrinex

**Services Provided**

Petrinex is a centralized, repository of volumetric, infrastructure, and other petroleum-related information for Alberta's, British Columbia's, Manitoba's, and Saskatchewan's upstream, midstream and downstream oil and gas industries. The information reported in Petrinex is used to assess and calculate royalties owed to the Crowns and enforce compliance with regulatory requirements of the four western Canadian provinces, and for Indian Oil and Gas Canada's (IOGC) assessment and collection of royalties owed to First Nations bands in Alberta and Saskatchewan.

Petrinex serves three distinct functions:

- Central database for all of the royalty, regulatory, volumetric and infrastructure data related to Alberta's, British Columbia's, Manitoba's, and Saskatchewan's upstream, midstream and downstream oil and gas industries;
- A communication tool enabling the Government of Alberta, the Government of British Columbia, the Government of Manitoba, the Government of Saskatchewan, IOGC, the Alberta Energy Regulator (AER), the British Columbia Energy Regulator (BCER) and Industry stakeholders to exchange and analyze accurate information quickly and efficiently; and
- As an analysis tool, Petrinex avoids common mathematical errors by saving the information in its most basic form and then performing calculations as required to ensure the entire system remains in balance and business/regulatory rules are applied correctly for each jurisdiction.

The following is a brief summary of the activities that can be performed within Petrinex (whether it be online, batch or both):

- Volumetric Reporting
- Stream Allocation/Owner Allocation Reporting
- Pipeline Split and Transportation Allowance Reporting
- Infrastructure Reporting (Wells, Facilities, Business Associates, Production Entity, etc.)
- Raw Gas Allocations Reporting
- Allowable Cost Reporting
- Crude By Rail Reporting
- Alberta Petroleum Marketing Commission (APMC) Reporting (Shipper's Balance, Tariff, and Equalization)
- Oil Forecast Tool
- Drilling and Completion Cost Reporting
- Report requests on dozens of pre-defined reports
- Download Ministry Statements and Reports
- Information Download capabilities (Bulletin Board, Public Data)
- Changes to user profiles by the respective User Security Administrator
- Valuation (Oil, NGL, and Gas)

- Producer Cost of Service
- Royalty Tax Attributes
- Royalty Tax Payer
- Enhanced Production Audit Program (EPAP)
- Enhanced Production Valuation Program (EVAP)
- Production Allocation Discrepancy (PAD).

Petrinex facilitates the activities outlined above by means of data uploads, downloads, and e-mail communication. Petrinex provides the tools and data primary users need for two-way communication with governments and regulators, working-interest owners, pipeline companies, shippers, purchasers, and other business associates.

Petrinex is accepted as the single, authoritative petroleum-related data source: the data it houses is considered the "data-of-record" for all stakeholders. All data are available in one place. Since all stakeholders have access to Petrinex data, and since the same data can be used for a variety of purposes, Petrinex eliminates the need for multiple or duplicative submissions by and to multiple stakeholders.

**Infrastructure**

Petrinex is a secured web application. Petrinex uses an Active Directory Service (ADS) for authentication. There are three separate environments for Development, Testing and Production. All jurisdictions and the Development, Acceptance Testing and Production environments are distinct.

**Software**

Petrinex uses a web-based system for its automated business functions and processes that facilitate fast, standardized, safe and accurate management/exchange of key volumetric, regulatory, royalty and commercial information associated with the upstream petroleum sector.

Petrinex interacts with Ministry and Industry business systems through secure system interfaces. It makes data available through Internet access via browsers, web services, lookup tools, and reports. Petrinex's web-based interface provides users with online access to information.

**People**

Petrinex is a joint strategic organization supporting western Canada's upstream, midstream and downstream oil and gas industry, and streamlines the way petroleum producers exchange information with the AER, the Alberta Ministry of Energy and Minerals (AEM), the British Columbia Ministries of Finance (BCFIN) and Energy and Carbon Solutions (BCECS), BCER, the Saskatchewan Ministry of Energy and Resources (SER), the Manitoba Ministry of Business, Mining, Trade and Job Creation (MBMTJC), Indian Oil & Gas Canada (IOGC), Statistics Canada, and Industry partners. Petrinex is owned and operated by the Government of Alberta, and jointly governed with Saskatchewan, British Columbia, Manitoba, IOGC, and industry.

Petrinex is composed of several key functional units tightly integrated to enable quality performance from the Petrinex application and to ensure the needs of Petrinex's stakeholders are met. The Petrinex

team is jointly funded by the Governments of Alberta, Saskatchewan, British Columbia, and Manitoba, the AER, and IOGC, in exchange for which Alberta provides full time resources and contractors to work exclusively on Petrinex on behalf of all stakeholders. This is a unique precedent set by Petrinex in which all stakeholders groups can interact with each other on a continual basis to address any emerging issues of mutual interest that may arise.

Overseeing the entire operations of Petrinex is the Chief Executive Officer, who is accountable to ensure that the immediate operational needs of Petrinex stakeholders are met, and that the strategic direction of Petrinex, as set by the Petrinex Executive Board, is advanced within the respective functional units of Petrinex.

The following is a brief summary of the distinct functional units within Petrinex:

- **Petrinex Business Desk:**
  - Reporting to the Petrinex Business Operations Director , the Business Desk is the first point-of-contact for Industry, AER, BCER, and the Governments of Alberta, British Columbia, Manitoba and Saskatchewan, and IOGC users regarding the use of Petrinex.
  - All incidents submitted by Industry, AER, BCER, the Governments of Alberta, British Columbia, Manitoba or Saskatchewan, or IOGC users are recorded within the Alberta ServiceNow system.
  - Incidents are prioritized based upon their business impact as defined in the Petrinex Business Change Management Process.
  - The Business Desk attempts to resolve the majority of incidents themselves.
  - A Knowledge Database is collectively maintained by the Petrinex Business Desk team and the Petrinex Subject Matter Experts.
  - Regular daily and weekly statistical reporting on events, operational issues and performance metrics.
  - The Petrinex Business Desk leads and manages the Petrinex Daily Operations meetings (Petrinex team, Industry, AER, BCER, and the Governments of Alberta, British Columbia and Saskatchewan).
- **Petrinex Change Management Team:**
  - Headed by the Petrinex Business Operations Director, the Change Management Team meets on a weekly basis and is composed of members from respective stakeholder groups (Petrinex, AER, the Governments of Alberta, British Columbia, Manitoba and Saskatchewan, IOGC and Industry).
  - The Change Management team employs a rigorous change management process to assure that all change items are adequately vetted, prioritized, scheduled, tested and implemented.
  - The Change Management team is responsible to ensure that the System Delivery Lifecycle methodology is consistently applied to all change items.
- **Petrinex Application Maintenance and Support (AMS) Team:**
  - Headed by the AMS Service Delivery Manager, the AMS team is responsible to ensure that Petrinex consistently meets stakeholder performance/processing expectations (as per the documented list of Key Performance Indicators) not only on a day-to-day basis, but also on an hour-to-hour basis.

- The AMS team manages the day-to-day activities of Petrinex, with hardware, network and general system support provided by the Alberta Technology and Innovation Production Support Team.
- The AMS Service Manager is responsible to ensure that the team of application developers, DBA's, Production Operations analysts and Change Management analysts are immediately available to address any issue that may arise, in addition to being responsible to ensure that the operational needs of Petrinex are addressed.
- The AMS team adopts practices for securing web applications as recommended by the Open Web Application Security Project (OWASP).

- **Petrinex Communications and Stakeholder Coordinator:**
  - The Petrinex Communications and Stakeholder Coordinator is responsible to ensure that timely communications (tips/alerts/broadcast messages, links to relevant documents) are provided to Petrinex stakeholders on the Petrinex website.
  - The targeted communications are intended to be concise, accurate and provide enough information to be useful to the intended audience.
- **Petrinex Learning Coordinator:**
  - The Petrinex Learning Coordinator is responsible to ensure that Petrinex's comprehensive online training system (which includes individual training modules for all jurisdictions) is available to all its registered users. The modules are to be constantly reviewed (in light of any change items implemented that have an impact to the modules) to keep the information current, informative and accurate.

**Data**

Petrinex is a central, electronic repository of royalty, regulatory, volumetric and infrastructure data related to Alberta's, British Columbia's, Manitoba's, and Saskatchewan's upstream, midstream and downstream oil and gas industries. Petrinex contains records of wells, facilities, business associates, operators of record, and company contacts. It replaced, and streamlined, many previous methods of exchanging volumetric, allocation, valuation, and pipeline split information.

Data is reported into Petrinex by clients securely logging in to the web application and submitting data in one of two main ways: online or batch. The data is validated by Petrinex and then sent to the appropriate Ministry and/or regulator for further use in their business processes. The outputs from the applicable Ministry or regulator is then sent back to Petrinex for the end-user to access at specified periods in the submission cycle.

Information is validated before it is accepted into Petrinex. Once it is posted, all stakeholders can "read from the same page." That is, they can access the same view of the data at the same time. If there are errors, or if data are missing, operators receive prompt, electronic notification. This gives them the opportunity to correct mistakes and avoid potential compliance penalties or provisional assessments.

To avoid mathematical calculation errors, Petrinex data is stored in the most granular form. Petrinex is capable of making calculations and deriving other types of information on the basis of these granular elements. For example, Petrinex users submit allocation factors to Petrinex. Petrinex applies these factors to total volumes in order to derive the volumes for which particular owners are responsible. It

calculates sum totals and locates cross-references. This provides mathematical accuracy and assures that all data in Petrinex remains "in balance."

**Processes and Procedures**

Petrinex has incorporated the following procedures, some of which are carried out by the Ministry of Technology and Innovation on behalf of Petrinex:

- Incident Response Procedures
- Change Management Procedures
- Emergency Response Procedures
- Business Resumption and Disaster Recovery Procedures
- Security administration and monitoring procedures
- Security auditing and log analysis procedures
- Performance monitoring procedures
- Interest Expressed from Outside Parties Procedures
- Founding Stakeholder Initiated Enhancement Procedures
- Petrinex Central Security Administrator Procedures
- Petrinex Document Release Protocol Procedures
- Communication Procedures, including Media Contact Procedures
- Enhanced Production Audit Program (EPAP)
- Enhanced Production Valuation Program (EVAP)

**Subservice Organizations**

Alberta Energy and Minerals uses subservice organizations to perform certain functions to improve operating and administrative effectiveness. The description of the boundaries of the system does not extend to the services provided by the subservice organizations. This report and the description of the boundaries of the system only cover the trust services criteria related to controls at Alberta Energy and Minerals and exclude related or supplemental controls.

**Complementary User Entity Controls**

Complementary user entity controls that are suitably designed and operating effectively are necessary, along with controls at Alberta Energy and Minerals, to achieve Alberta Energy and Minerals' service commitments and system requirements based on the applicable trust services criteria.

## Attachment B:

## Alberta Energy and Minerals' Principal Service Commitments and System Requirements for Petrinex

Alberta Energy and Minerals designed Petrinex processes and procedures to facilitate efficient, standardized, secure and accurate management/exchange of "data of record" information essential to the operation of the petroleum sector. Those objectives are based on the service commitments that Alberta Energy and Minerals make to user entities, the laws and regulations that govern the provision of Petrinex services, and the financial and operational requirements that have been established to deliver those services.

Security, confidentiality, processing integrity and availability commitments to user entities are documented and communicated in the description of the service offering provided online. These commitments are standardized and include, but are not limited to, the following:

- Security and confidentiality commitments:
    - Security principles implemented within Petrinex are designed to permit system users to access only the information they need based on their role in the system, while restricting them from accessing information not needed for their role. Security protocols are designed to ensure that proprietary/confidential data is accessible only to authorized users. Shared data is accessible and usable by authorized Industry, regulator and Ministry stakeholders only. Access to data in the public record is unrestricted.
    - Encryption technologies are used to protect the confidentiality of user data in transit.
    - Proprietary/confidential data is retained and/or disposed of in accordance with:
        - applicable Government of Alberta policies, directives, and standards, or
        - as directed by the Governments of British Columbia, Manitoba or Saskatchewan, or IOGC (when applicable).
- Expectations of service provision and availability: Petrinex services are generally available 15 hours a day, Monday to Saturday, with occasional Sunday openings. These services are not available 24 hours a day due to regular maintenance activities. Petrinex users are encouraged to view the exact hours of operation on a given day/month within the "Business Desk" area of the Petrinex website.
- Processing integrity commitments: Petrinex includes built-in edit and error checking to enable consistent and timely processing of data submissions, and consistent automated calculations based on granular data to enable mathematical accuracy.

Alberta Energy and Minerals establishes operational requirements that support the achievement of its system commitments and adhere to relevant legislation, policies and directives. Such requirements are effected by Alberta Technology and Innovation on behalf of Alberta Energy and Minerals and include the development of system policies and procedures, system design documentation, and any relevant contracts with vendors.

Operational policies define an organization-wide approach to how systems and data are protected, administered, maintained and made available. These include policies around how the service is designed and developed, how the system is operated, how the system and network are managed and maintained, and how employees are hired and trained. In addition to these policies, standard operating procedures

have been documented on how to carry out specific manual and automated processes required in the operation, development, and maintenance of Petrinex.