Institutional Control of Mine Wastes in Saskatchewan, Canada

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Abstract

Many jurisdictions around the world require mining operations to prepare closure plans and to post a bond or other financial assurances of sufficient value to cover the cost of closure. However, not all jurisdictions address the conditions under which they would accept the return of such properties, once the operator has fulfilled their obligations and is requesting release from further financial bonding.

In Saskatchewan, a consultant led a team of provincial government departments in a process to develop an effective institutional control program (ICP). This required extensive consultations with industry, Aboriginal traditional users and other stakeholders to gain their support and inclusion.

The program addresses all aspects of conventional closed mines, as well as uranium specific issues of radioactive waste management, requirements of the Canadian Nuclear Safety Commission, and applicable provincial Acts and regulations. The entire policy development process culminated in 2007 with the implementation of the Reclaimed Industrial Sites Act and Regulations.

Cameco Corporation was the first company to successfully register a decommissioned gold site, as well as five former uranium sites into the program. Following acceptance of a site into the program and a financial deposit from the operator, each site is monitored and maintained under provincial responsibility.

Introduction

For the past two decades, the Government of Saskatchewan has consistently stated that once the operator of a mining facility has fulfilled its decommissioning and reclamation obligations and demonstrated, by transition phase monitoring, that the site is chemically and physically stable; it would accept custodial responsibility of the property. The development of the Institutional Control Program (ICP) by the province fulfils that commitment and provides the regulatory framework to manage that responsibility.

The ICP development was initiated in 2005 with the establishment of an interdepartmental Institutional Control Working Group (ICWG) of representatives from the Departments of Environment, Energy and Resources, Northern Affairs, Justice, Finance and Executive Council. The ICWG were granted approval in principle to develop a framework and undertake stakeholder consultation. The ICWG developed a detailed background paper, a public discussion paper and entered consultations with stakeholders. Key stakeholders included mining companies and related industries, northern communities, Environmental Quality Committees, northern First Nations and Métis communities, federal regulators and various environmental and NGOs. Consultations included multiple public and northern meetings, federal regulator meetings, in particular the Canadian Nuclear Safety Commission, and the establishment of an industry/government working committee. The results of the meeting and committee discussions were incorporated into the final development and implementation of the ICP. Meetings and discussions with government departments and with industry continued through to 2007 when The *Reclaimed Industrial Sites Act* (RISA) and Regulations were approved.

In the context of the ICP, institutional control consists of those actions, mechanisms and arrangements implemented in order to maintain control or knowledge of a remediated site after project closure and custodial transfer to some form of responsible authority. This control may be active (e.g. by means of monitoring, surveillance, remedial work, fences, etc.) or passive (e.g. land use restrictions, markers, records, etc.). Activities undertaken by the custodian (i.e. the province is the responsible authority) could range from the simple act of permanently recording the location of a remediated site all the way to conducting regular inspections and sampling and the forecast maintenance of the property.

For the Government of Saskatchewan the responsible custodian is the ICP and the ministry or ministries assigned the responsibility of implementing and managing the ICP. The RISA provides the legislative authority to implement and enforce the ICP. It has been designed so that one or more ministers and their respective ministries can be granted that responsibility. Saskatchewan Energy and Resources is the provincial ministry that has been assigned the responsibility for managing the ICP.

The primary objectives of the ICP are to:

- Protect human health and safety;
- Protect the environment;
- Ensure future generations are not burdened with the costs of long-term monitoring and maintenance for current mining development;
- Be sustainable; and
- Recognize federal jurisdiction regulatory roles and responsibilities for national and international obligations.

It should be noted that the ICP does not manage the responsibility for the decommissioning and reclamation regulatory process, it manages the steps that follow. A site cannot be accepted into the ICP until the remediation activities have taken place and regulatory authorities have issued a release. The ICP has been implemented as being specific to, and restricted to, remediated mine and/or mill sites on provincial Crown land. However, the institutional control framework has been designed to be able to manage a broader scope of sites, such as private land or industrial sites in the future.

Regulatory Process for Mine/Mill Development

In Saskatchewan, throughout the life of a mine, from construction, to operation, to final remediation, mine/mill operations are carefully governed under environmental regulation, beginning with an environmental assessment. The *Project Specific Guidelines for the Preparation of an Environmental Impact Assessment*, issued by Saskatchewan Environment for a proposed mine and/or mill, will require the proponent of the project to include a conceptual decommissioning and reclamation plan in its environmental impact statement. A proposed mine and/or mill may also require a review under federal regulation through the Canadian Environmental Assessment Agency (CEAA), and specifically for uranium mines and/or mills, the process is undertaken through the Canadian Nuclear Safety Commission (CNSC). A flowchart of the regulatory process is shown in Figure 1.

Once ministry approval for the proposed mine and/or mill is received under the *Environmental Assessment Act*, the *Mineral Industry Environmental Protection Regulations, 1996* issued pursuant to the *Environmental Management and Protection Act*, (EMPA) require that any person seeking an approval to operate a pollutant control facility, mine or mill submit a detailed decommissioning and reclamation plan for review and approval by the Minister and a financial assurance instrument to ensure the completion of the decommissioning and reclamation for the mine site has been approved by the Minister and established by the operator. Those same regulations require the operator of the facility to conduct a detailed review of the decommissioning plan and the financial assurance at least once every five years, whenever requested to do so by the Minister or within the 12 months preceding the permanent closure of a facility.

After mining has ceased and the operator has completed the approved decommissioning and reclamation activities, the site enters a period of 'transition phase monitoring'. During this period, the operator is required to continue monitoring and maintaining the site, as per the requirements in the plan, at their own expense; and maintain financial assurances sufficient to cover the cost of the remaining obligations outlined in the plan and any monitoring and maintenance requirements for the balance of the transitional period as well as a contingency, to be negotiated, for any unexpected occurrences. During the period, the Province and, in the case of uranium facilities, the CNSC continue to conduct periodic regulatory inspections and review of monitoring results. Also during this period, the operator continues to remain fully liable for any impacts the site may have on the environment, surrounding communities and the public safety both provincially as per the requirements of EMPA and federally.

If the site performs in accordance with the decommissioning and reclamation plan and achieves the predicted stability during the transition phase monitoring period, the operator may then make an *Application for a Release from Decommissioning and Reclamation (Release)* in order to obtain a release from further monitoring and maintenance responsibilities and from the obligation to maintain financial assurances. Having received the *Release*, the operator may then proceed to apply for and receive a release from its surface lease. The release from the surface lease would allow the transfer of custodial responsibility for the property from the operator to the ICP *(i.e.* the *Institutional Control Registry*).

Further information on the environmental approval process is available from Saskatchewan Environment, and federally through CEAA and in the case of uranium, the CNSC.

Uranium Mine/Mill Properties

National and International Obligations

It must also be recognized that the national and international regulatory framework surrounding the institutional control of radioactive wastes (and therefore uranium mining and milling facilities) has changed significantly since uranium was first mined. The Government of Canada is a member of the

International Atomic Energy Agency (IAEA) of the United Nations, and party to their safeguards and protocols. In 1998 Canada became a "Contracting Party" to the *Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management* (*Convention*). As a Contracting Party to the *Convention*, Canada is required to take the steps to ensure that an appropriate institutional control framework is in place to address the long-term management of decommissioned uranium mine/mill facilities in Saskatchewan. The responsible federal authority for the Government of Canada's obligations under the Convention is the CNSC.

Federal Regulatory Oversight

The Government of Canada's regulatory framework as it applies to mining and milling facilities is exercised through a number of departments and agencies and the legislation that empowers them. A site is required to meet the environmental objectives required by those authorities, in addition to provincial authorities, in the completion of their decommissioning and reclamation plans prior to a site being considered for entry into the ICP. Once a site has entered the ICP it will be required to maintain those objectives. Federal authorities that provide objectives and regulatory oversight over the development of a mine or mill facility can include:

- Canadian Environmental Assessment Agency (environmental assessment);
- Environment Canada (environmental monitoring);
- Department of Fisheries and Oceans (mining effluent regulation), and
- Human Resources Development Canada (health and safety).

Canada has also promulgated the *Nuclear Safety and Control Act* (NSCA) and associated regulatory framework as it applies to uranium mining/milling facilities. This grants constitutional jurisdictional authority to the federal government. The responsible federal authority for the NSCA and Regulations is the CNSC. The *Institutional Control Registry*, in conjunction with the monitoring prescribed by the *Registry*, has been designed to be comparable to an active "licence" issued by the CNSC. The *Registry* has also been designed to meet Canada's obligations under the IAEA's *Convention*. The CNSC will decide on the exemption from licensing on a site-by-site basis. If a site/site holder does not receive consent for exemption from the CNSC, the site will not be accepted into the ICP and *Registry*.

Institutional Control Program Regulatory Process

The *Reclaimed Industrial Sites Act* (RISA) grants Saskatchewan Energy and Resources (SER) the legislative power to establish the Institutional Control Program (ICP). The stated purposes of the ICP are:

- to set out the conditions by which the Government of Saskatchewan will accept responsibility for land that, in consequence of development and use, requires long-term monitoring and, in certain circumstances, maintenance;
- to ensure that the required monitoring and maintenance are carried out on that land;
- to provide a funding mechanism to cover costs associated with the monitoring and maintenance on that land; and
- to ensure that certain records and information are preserved with respect to that land.

The ICP has two primary components, the *Registry* and the Institutional Control Funds, namely the Monitoring and Maintenance Fund (ICMMF) and the Unforeseen Events Fund (ICUEF). *The Reclaimed Industrial Sites Regulations* (RISR) prescribe the conditions under which SER will accept a closed site into the ICP, the requirements of the ICP to monitor and maintain a closed site, the funding method and the enforcement of the preservation of records and information.

A site holder wishing to transfer a closed site into the ICP will be required to submit an application to SER. SER will review the application, and in discussion with the site holder determine the amount to be deposited into the ICMMF and the ICUEF. Once the application is approved the site holder is required to submit a registration fee and the prescribed fund deposits. The documentation required to be submitted by a site holder such as site information, site holder information, inclusion of release or eligibility to be released from all licenses, permits and leases will undergo a straightforward review by the *Registry*. This review is directed at ensuring all required documentation has been included.

The monitoring and maintenance plan and the present value of the future costs associated with the monitoring and maintenance obligations will undergo a detailed review to ensure they are sufficient and appropriate to meet the long-term environmental, health and safety objectives required of the closed site. Companies may find it beneficial to develop such plans as part of their detailed decommissioning and reclamation plans and submit them at the time of application for a *Release.* During the initial years of the ICP, the *Registry* does not anticipate employing full time technical expertise to complete this review. SER will consult and act on the recommendations of Saskatchewan Environment and Saskatchewan Finance in making the decision to accept a closed site into the *Registry* and what the appropriate fund deposits and registration fee will be for the site to be accepted.

Financial Requirements
Institutional Control Monitoring and Maintenance Fund

One of the prescribed conditions to be accepted into the *Registry* is that a site holder must have submitted a monitoring and maintenance plan that identifies the monitoring and maintenance obligations that need to be undertaken once the site is accepted into the ICP and the present value of future costs associated with those obligations. SER has established the Institutional Control Monitoring and Maintenance Fund (ICMMF) and will manage the funds as monies separate from the province's General Revenue Fund.

The contribution to the ICMMF must be of a value to generate revenue sufficient to pay those future costs in perpetuity. The contribution should be calculated based on the "net present value" of the obligation at a forecast inflation rate and based on forecast investment return rates. The calculation should be made as follows:

Total ICMMF Contribution = the sum of the individual contributions of each monitoring and maintenance obligation at the site.

For a future cost that has been submitted in current dollars, the future value of an individual obligation in the year it occurs is calculated as follows:

Individual Obligation Future Value = Individual Obligation Cost times Future Value Ratio

where the Future Value Ratio (FVR) = (1 plus the Rate of Inflation (%)) to the power of the number of years in the future the obligation occurs.

> The Rate of Inflation is determined by SER and assigned following an application by a site holder. The present method is to calculate the rate of inflation as a 10 year average based on annual values reported by the Bank of Canada.

and Individual Obligation Contribution = Individual Obligation Future Value times Discount Rate Ratio

where the Discount Rate Ratio (DRR) = 1 divided by ((1 plus Rate of Return (%)) to the power of the number of years in the future the obligation occurs)

The Rate of Return is defined as the interest rate applied at the time the site is accepted into the *Registry*. The rate is determined by SER and assigned following an application by a site holder. The present method is to establish the Rate of Return in reference to the Rate of Inflation (i.e. Rate of Inflation + X%). A sample calculation table for a site is attached as Table 1.

SER will manage the ICMMF in its entirety, but each site specific deposit on account will be tracked individually. SER can only access site specific monies for site specific monitoring and maintenance. SER cannot access monies on deposit for one site to fund expenditures at a separate site. Responsibilities include:

(a) maintenance costs anticipated at the time the closed site is accepted into the Institutional Control Program and for any other general costs that should have reasonably been anticipated at the time the closed site was accepted into the Institutional Control Program; and

(b) costs incurred for the purpose of determining the required monitoring and maintenance of the closed site.

A comprehensive monitoring and maintenance plan with sound cost estimates significantly reduces the risk of a cost overrun on monitoring and maintenance activities. Should such an event occur, a root-cause analysis should be performed to determine cause and responsibility. Funding sources for such events may include the Institutional Control Unforeseen Events Fund, a financial assurance, the former site holder or the province.

Understandably, concerns were raised by stakeholders, and in particular industry, that the fund be prudently managed and that their site specific monies were not expended elsewhere subjecting them to cost liabilities at a future date having made initial deposits in good faith. The RISA grants SER the authority to invest moneys in an account of the ICMMF, that are not presently required for the purposes of that account, in any security or class of securities authorized for investment pursuant to *The Pension Benefits Act, 1992*. SER will initially use the resources of Saskatchewan Finance to manage the monies. Finance has recommended that in the initial years the ICMMF be invested in bonds rather than mutual funds to ensure site specific fund management and target a specific return. Once the fund builds to a sufficient level to bear administrative costs of third party management, the longer term investment strategy will be to include a diversified portfolio of bonds, equities and assets, prudently managed to meet investment objectives.

Institutional Control Unforeseen Events Fund

In addition to the contribution to the Institutional Control Monitoring and Maintenance Fund (ICMMF), a site holder must include a contribution to the Institutional Control Unforeseen Events Fund (ICUEF). The contribution to the ICUEF must be of sufficient value to generate revenue to pay the costs of future unforeseen events and release a site holder from a financial assurance requirement. The contribution is calculated as follows:

(a) for a closed site without tailings or engineered structures, 10% of the Total ICMMF Contribution; and

(b) for a closed site with tailings or engineered structures, 20% of the Total ICMMF Contribution.

The calculation and assignment of percentages was determined in negotiation with industry. In short, it is based on the assumption that a site with an engineered structure presents twice the risk of a site without a structure and that the contribution had to be at such a monetary level as to provide growth potential.

It is difficult to accurately forecast or estimate the extent of unanticipated future costs at any individual decommissioned property. However, modern mine decommissioning and reclamation strategies are based on the implementation of passive control methods wherever possible. These methods significantly reduce the potential for such costs to arise. Unforeseen events can include failure of a containment dyke, pit wall collapse, shaft cover degradation and change in regulatory requirements. The ICUEF will fund these contingent events.

However, a site holder cannot be granted complete absolution from site responsibility. The *Environmental Management and Protection Act* (EMPA) provides for absolute liability of a person responsible for a discharge to continue indefinitely. The authority to waive this liability does not rest with the Minister of Environment as no such authority is provided in the EMPA. It is for this reason that neither the Minister of Environment nor the Minister of Energy and Resources can issue a deed of custodial transfer that states that the operator is completely absolved from responsibility for environmental contamination at a particular site.

The ICP will limit the province's liability to be held responsible for future clean up costs arising from unforeseen circumstances or company dissolution that are not provided for in the EMPA or identified in the *Application for Release from Decommissioning and Reclamation* approved by Saskatchewan Environment and upon which the basis of the custodial transfer was undertaken. Only in the case of the original operator no longer being in existence, would such costs have to be addressed by public means. As with the ICMMF, concerns were raised by stakeholders and in particular, industry site holders, that the money would be prudently managed. The ICUEF is, in effect, a "rainy day fund" to manage the cost contingencies of unforeseen events. Notably, this fund, with no forecast withdrawal, can reach significant levels in the future. With continued deposits and interest earnings from sound financial management, the province and stakeholders agree that in the future the fund could reach significant levels such that further deposits will not be required. While SER will manage the ICUEF in its entirety, unlike the ICMMF, it will not be tracked by individual site specific monetary deposit.

Financial Assurance

A financial assurance requirement has been implemented to minimize the ICP's financial risk during the initial years while the Institutional Control Unforeseen Events Fund (ICUEF) is building in value. In negotiation with industry, while implementing a condition to reduce its risk, the province also took steps to minimize the financial impact on good corporate citizens through the acceptance of corporate guarantees. It is understood that once the ICUEF has reached a sufficient level to manage the total cost for unforeseen contingent events, the financial assurance requirement will be removed. For SER to accept a closed site into the ICP and thus, the *Registry*, a site holder must post a financial assurance in an amount equal to the cost of a maximum failure event that could occur at the closed site or any such reduced amount agreed on by the minister. The maximum failure event is to be identified in the monitoring and maintenance plan submitted to the minister in the application for entry into the *Registry*. The maximum failure event is site specific and typically references a failure of the largest engineered structure that exists on the site.

The assurance must be of one of the following types:

(a) cash;
(b) cheques and negotiable instruments;
(c) government bonds, government guaranteed bonds, debentures, term deposits, certificates of deposit, trust certificates or investment certificates;
(d) corporate guarantees, irrevocable letters of credit, performance bonds or surety bonds; and
(e) any other financial instrument or security that is acceptable to the minister.

For a financial assurance that is posted as a corporate guarantee, the minister requires that the site holder providing that corporate guarantee be of sufficient financial credit rating to ensure the ability to cover the amount of the assurance. Acceptable investment-grade credit ratings are defined as the rating assigned by Standard & Poor, Moody's or Dominion Bond Rating Service of, respectively, BBB/ Baa3/ BBB(low) or higher. A financial assurance for a specific site is to be reviewed approximately once every five years to determine if it continues to be required and at what level that requirement will be. In conducting the review, the *Registry* shall consider: the condition of the closed site; the amount estimated as standing to the credit of the closed site in the Institutional Control Monitoring and Maintenance Fund (ICMMF); and the financial solvency of the site holder.

The *Registry* can only access the financial assurance if the minister is obligated to undertake significant maintenance obligations at the site and withdrawing the funds for the required maintenance will unduly deplete the amount standing to the credit of the closed site in the ICMMF or the ICUEF; or the minister determines that the security provided as part of the assurance fund is about to expire and that no replacement security has been provided.

Registration Fee

The final cost component of the ICP is the prescribed registration fee of $500. This is a fixed fee prescribed in the *Reclaimed Industrial Sites Regulations*. The fee will provide for processing of applications, document transfer and program administration.

Audit

The Institutional Control Monitoring and Maintenance Fund and the Institutional Control Unforeseen Events Fund shall be managed openly and transparently. As a provincial government managed fund, the Provincial Auditor shall audit the accounts and transactions and table an annual report on the business of the funds and a financial statement in each fiscal year. In this manner, the information will be available for public and stakeholder review.

The *Registry* shall be required to prepare a report every five years, to be known as the *Institutional Control Report*, identifying the condition of all closed sites accepted into the ICP. As with the *Registry* records, this report shall be made available for public and other jurisdictional access.

Institutional Control Registry

A primary component of the ICP is the *Institutional Control Registry* (*Registry*). The *Registry* will be implemented by SER. The *Registry* will be the record and information archive for accepted sites, and will also be responsible for ensuring that the monitoring and maintenance is performed and enforcing compliance with land use restrictions. It will be the portal for public access to information and responsible for reporting on all its activities to regulatory authorities, national and international.

Records and Information

As a record and information archive the *Registry* shall require and maintain the following records and information. Records to be submitted by a site holder:

(a) location of the closed site;
(b) identification of the site holder of the closed site;
(c) a description of the closed site and the activities that were conducted on the closed site;
(d) the release from decommissioning and reclamation issued pursuant to *The Mineral Industry Environmental Protection Regulations, 1996*;
(e) a reference to and the location of the documents provided by the site holder pursuant to *The Mineral Industry Environmental Protection Regulations, 1996* for the purposes of applying for the release mentioned in clause (d), including a reference to and the location of a full and complete set of 'as-built' reports;

(f) a description of the monitoring and maintenance obligations;
(g) a reference to and the location of the documentation provided to the site holder when the site holder is released from any surface lease agreement that governed the closed site;
(h) in the case of a closed site that was a uranium facility, a reference to and the location of Canadian Nuclear Safety Commission licensing documentation and all Canadian Nuclear Safety Commission decisions related to the closed site;
(i) a notation of the location of all documentation that the minister considers applicable to the closed site and that is in the control of the site holder; and
(j) surface and underground plans submitted pursuant to *The Mines Regulations, 2003* or any predecessor to those regulations.

A site holder's submission is not specifically required to include all historical records and data previously submitted to a government department, agency or commission and retained on file. Certain historic records may have been submitted under previous ownership or are department specific. That information is to be submitted by the responsible government department, agency or commission.

To be submitted by the Government of Saskatchewan, the Government of Canada or any agency or commission of those governments:
(a) notation of the location of all documentation that the minister considers applicable to the closed site and that is in control of the relevant Government, agency or commission;
(b) a description from the department of the Government of Saskatchewan responsible for the management of the surface lands that are part of the closed site and that are owned by the Government of Saskatchewan, identifying and specifying any surface land use restrictions for the closed site;
(c) a description from the department of the Government of Saskatchewan responsible for the management of mineral lands that are part of the closed site and that are owned by the Government of Saskatchewan, identifying and specifying any mineral disposition restrictions for the closed site;
(d) in the case of closed site that was a uranium facility, a reference to and location of Canadian Nuclear Safety Commission licensing documentation and Canadian Nuclear Safety Commission decisions related to the closed site;
(e) a note indicating whether the property is registered as a land disposition administered by the minister responsible for *The Environmental Management and Protection Act, 2002*;
(f) reference to and location of any final surface lease agreement respecting the closed site provided by the department of the Government of Saskatchewan responsible for the management of the surface land; and
(g) a copy of any surface, underground and final closure plans respecting the closed site that are provided to any department of the Government of Saskatchewan responsible for management of those plans.

A governmental submission of historical records may take the form of a letter identifying the applicable records for which that agency is responsible, i.e. a list and location. That agency would be expected to maintain those records in perpetuity. The submission may take the form of a physical transfer of documentation should the agency not wish to maintain those records. Similarly, responsibility for records already archived should be transferred.

Monitoring and Maintenance

The *Registry* shall be required to monitor and maintain a closed site in accordance with the monitoring and maintenance plan as submitted by the site holder and approved as a condition of acceptance into the Institutional Control Program. As the site matures those monitoring requirements may be amended based on the site having proven the ability to further stabilize at or below environmental and safety regulatory objectives and standards. An example is a site that enters the program with a once in 5 years monitoring cycle as approved by regulators may in 25 years time move to a once in 10 years monitoring cycle following regulatory approval.

The *Registry* shall also be required to carry out all maintenance on a closed site to ensure the site meets environmental and safety regulatory objectives. This can include the replacement of a cement cap on a mine shaft once every 75 years (funded by the ICMMF), to the repair of a containment dyke following a once in a thousand year rainfall (funded by the ICUEF) and maintenance of long term revegetation and reclamation objectives.

In carrying out the monitoring and maintenance responsibilities when there are a limited number of sites, the *Registry* may not have employed full time qualified personnel. In such cases, the *Registry* intends to retain the services of qualified persons. This may be achieved by requesting qualified employees of the Government of Saskatchewan to carry out those responsibilities; or engage the services of private technical, professional or other adviser, specialist or consultant personnel. The *Registry* should also provide a copy of monitoring reports to the site holder that remediated the site to further ensure the site is performing as planned and that the *Registry* has undertaken any corrective maintenance prior to failure of engineered structures. The *Registry* will access the appropriate account of the ICMMF or, as the case requires, the ICUEF for payment of the performance of those services.

Site Access

At the time of application into the ICP, a site holder is required to relinquish the associated surface lease. For sites in northern Saskatchewan the lease will have been negotiated by the Ministry of First Nation and Métis Relations (Northern Affairs). Based on a site's operational use and the remediation measures incorporated in the decommissioning and reclamation plan, it may be necessary to restrict future surface use to ensure the stability and function of engineered structures. As an example, it would not be prudent to allow an access road to be built across a decommissioned engineered tailings facility. The *Registry* may restrict or prohibit access to a closed site that has been accepted into the ICP if it is considered to be in the public interest. The land use restrictions are to be determined at the time an application is made to enter a site into the ICP and the *Registry* will retain the authority to enforce those restrictions. The surface responsibility will revert back to the management of Saskatchewan Environment or a delegated authority on surrender of the lease. The ministry or delegated authority will have the responsibility of permitting permissible land use subject to the restrictions on record within the *Registry*.

Similarly at the time of application into the ICP, a site holder is required to relinquish the associated mineral dispositions, currently managed by SER. Based on the engineered structures incorporated in the remediation of the site, it may prove necessary in the public interest to restrict mineral activities such as exploration on a site. When required, SER intends to establish a mineral reserve at a closed site which, in effect prevents future dispositions being issued. A reserve can be established at the time of application into the ICP, when a site holder is required to relinquish the associated mineral rights.

The Future

In May 2009, the former Contact Lake gold operation was the first site to be accepted into the ICP and five additional former uranium sites have subsequently been accepted. As the process is still new, we continue to look at opportunities to better define and streamline applications and approvals. In that aspect, this may also ultimately result in revisions to the *Reclaimed Industrial Sites Act* and the *Reclaimed Industrial Sites Regulations*. To that end, the *Act* states that it shall be reviewed, with stakeholders, within a five year timeframe. The review shall include the level and management of funding and the deposits into those funds. The day can be foreseen where funding levels have grown to sufficient levels to eliminate the need for deposits to the ICUEF and for financial assurances.

The future potential exists for a new company wishing to access a site that has been accepted into the *Registry* for the purpose of new mineral development or the further production of remaining reserves once deemed uneconomic. The intent of the policy framework under which the *Act* and *Regulations* were developed is to add future provisions such that that new company can accept all current and future liabilities associated with the site in order to transfer custodial responsibility from the *Registry* to that company.

Figure 1 - Progression of a Mine/Mill/Waste Management Site

From Operation, through Decommissioning, Transition Phase Monitoring and the Issuance of a *Release from Decommissioning and Reclamation*.

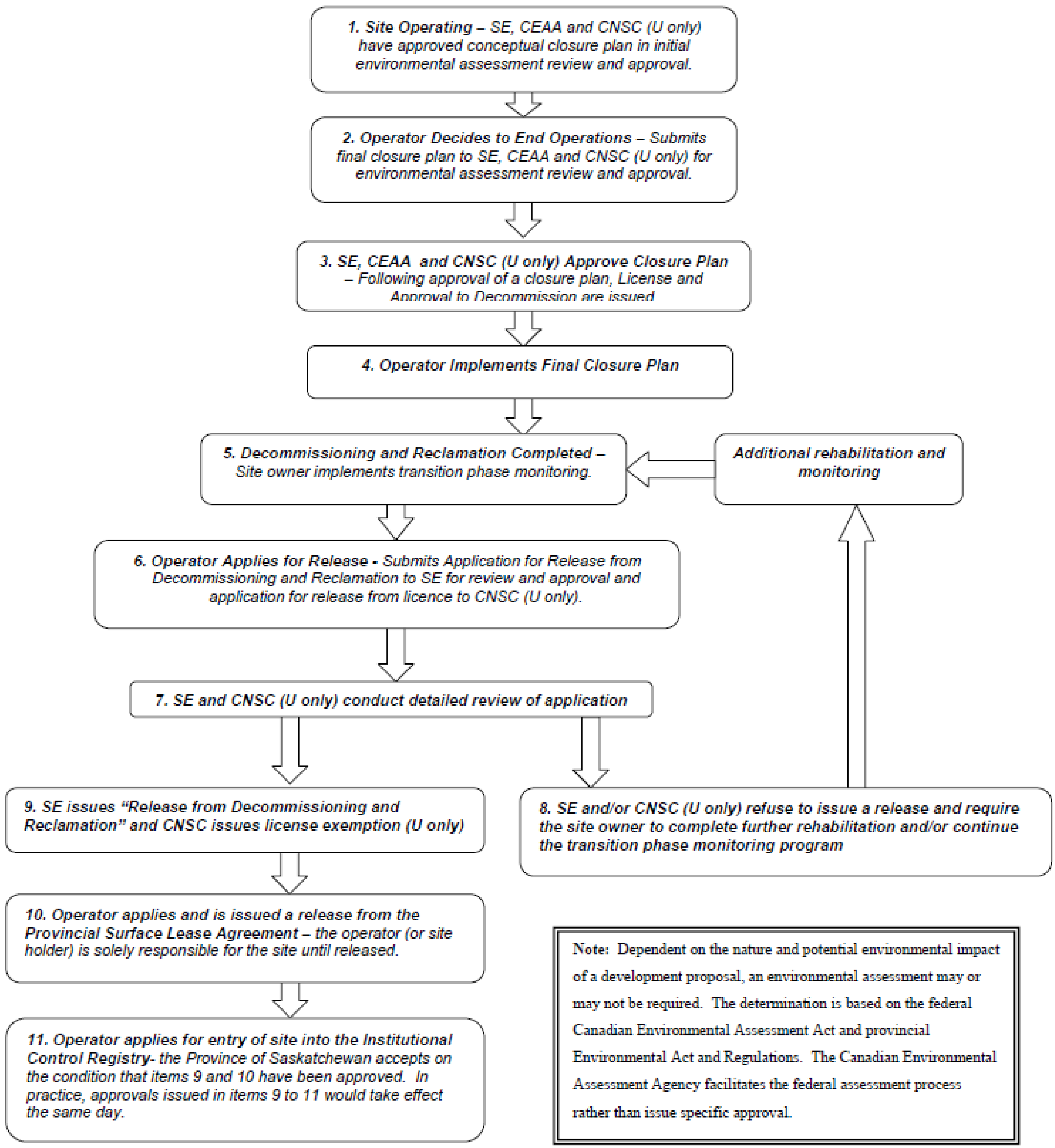

Figure 2 – Institutional Control Registry Report Sample Entry

IC REGISTRY	ICR #	ICR-06
	Date of Acceptance	November 1, 2008
SITE DATA	Name	Bullwinkle Mine
	Site Holder/Operator	Boris Incorporated
	Original Operator	Rocky Incorporated
SITE LOCATION	Region	La Ronge
	NTS	73-P-07
	UTM-N	6136138
	UTM-E	507533
	Zone	NAD 83
SITE DESCRIPTION	Commodity/Mineral	Gold
	Operational History	1961-1964
	Operation Description	Site consisted of one decline, two raises to surface, one mill and tailings management area.
	Release Description	Adit filled, tailings management area decommissioned, mill dismantled and hauled off site, waste rock contoured, site revegetated.
SITE PERMITS	Release from Decommissioning and Reclamation	IR-111
	Operating Permit at time of Release	SERM-9090, issued October 31, 1998
	Mineral Disposition	ML 9999
	Mineral Release/Crown Mineral Reserve	CR-9191
	Surface Lease Agreement	Surrendered
	Surface Lease Agreement at time of Release	SNA-5050, issued October 31, 2003
	CNSC Exemption (if applicable)	N/A
	CNSC License at time of exemption (if applicable)	N/A
SITE CONTROLS	Land Use Restrictions	MUP #609083. No permanent residence, exploration activity or land disturbance allowed. Unrestricted temporary recreation allowed.
	Monitoring/Inspection Requirements	Recommended 5 year frequency, beginning 2013 as per submitted plan.
	Date of last monitoring	April 30, 2008
	Maintenance/Inspection Requirements	No maintenance frequency required, maintenance required based on visual inspection of engineered structure at time of monitoring inspection as per submitted plan.
	Date of last maintenance	October 31, 1998
SITE RECORDS	Site holder application	May 30, 2008
	Monitoring and Maintenance Plan	on file at Energy and Resources (IC Registry).
	Financial Assurance Plan/Type	Corporate Bond
	Monitoring and Maintenance Fund Account	$50,000
	Decommissioning and Reclamation Plan	on file with Environment
	Mine/mill plans (as-built)	on file with Labour and Workplace Safety
	Mine/mill historical maps/plans	on file with Energy and Resources (Mines Branch)
	Saskatchewan Mineral Deposit Index reference	0759
	Mineral Assessment files	73P07-0009;-0020;-0024;-0045;-0034;-0050;-0090;-0120;-0121;-0155;-0162;-0201;73P07-0252
	CNSC License/Exemption	N/A
ADDITIONAL	Comments	

Table 1 - Sample calculation for fund contribution

Example: Minesite calculation for 70 years - no tailings or engineered structures requiring inspections only with estimated cost of $5,000 per inspection

	Year	Obligation cost (2008 dollars)	Sask. Inflation Rate* (10 yr avg to Jun 2009)	FVR	Obligation future value (in year required)	Sask. Rate of Return* (Inflation plus 2.0%)	DRR	Obligation Contribution
Enter in ICP	2009		2.76%	1.000		4.76%	1.000	
	2010		2.76%	1.028		4.76%	0.955	
	2011		2.76%	1.056		4.76%	0.911	
	2012		2.76%	1.085		4.76%	0.870	
	2013		2.76%	1.115		4.76%	0.830	
	2014	$ 5,000	2.76%	1.146	$ 5,729.15	4.76%	0.793	$4,540.60
	2015		2.76%	1.177		4.76%	0.757	
	2016		2.76%	1.210		4.76%	0.722	
	2017		2.76%	1.243		4.76%	0.689	
	2018		2.76%	1.278		4.76%	0.658	
	2019	$5,000	2.76%	1.313	$ 6,564.64	4.76%	0.628	$ 4,123.41
	2020		2.76%	1.349		4.76%	0.600	
	2021		2.76%	1.386		4.76%	0.572	
	2022		2.76%	1.425		4.76%	0.546	
	2023		2.76%	1.464		4.76%	0.522	
	2024		2.76%	1.504		4.76%	0.498	
	2025		2.76%	1.546		4.76%	0.475	
	2026		2.76%	1.589		4.76%	0.454	
	2027		2.76%	1.632		4.76%	0.433	
	2028		2.76%	1.677		4.76%	0.413	
	2029	$ 5,000	2.76%	1.724	$ 8,618.90	4.76%	0.395	$ 3,400.49
	2030		2.76%	1.771		4.76%	0.377	
	2031		2.76%	1.820		4.76%	0.360	
	2032		2.76%	1.870		4.76%	0.343	
	2075		2.76%	6.031		4.76%	0.046	
	2076		2.76%	6.197		4.76%	0.044	
	2077		2.76%	6.369		4.76%	0.042	
	2078		2.76%	6.544		4.76%	0.040	
	2079	$ 5,000	2.76%	6.725	$ 33,624.57	4.76%	0.039	$ 1,297.10

Closed site with engineered structures, apply percentage:	10%	**Contribution to ICMM Fund**	**$ 15,461.78**
		Contribution to ICUE Fund	**$ 1,546.18**
		Total Contribution	**$ 17,007.96**

*Saskatchewan inflation rate and rate of return from Institution Control fund factor document June 2009.