# North Rasmussen Ridge Mine

# Minor Mine Plan Modification
# Categorical Exclusion
# Documentation and Review
# May 12, 2015
# DOI-BLM-ID-2015-0027-CX

A. **Background**

BLM Office: Pocatello Field Office

Lease/Serial/Case File No: Federal Phosphate Leases I-04375 and I-07619

Proposed Action Title/Type: North Rasmussen Ridge Mine (NRRM) Minor Mine Plan Modification

Location of Proposed Action: Caribou County, Idaho. T06S R43E Sections 9, 10, 15, 16, 22, and 23, Boise Meridian.

**Description of Proposed Action:**
On December 16, 2013 Agrium submitted the NRRM (figure 1) Panel B *Resequencing and Northward Draining Backfill* mitigation as a Minor Mine Plan Modification. Also on December 1, 2014 Agrium submitted the Panel A Dinwoody Cover Minor Mine Plan Modification which includes another plan for storm water ditches on the backfill, which was submitted on May 17, 2013. The proposed actions would occur on State of Idaho and National Forest System lands within Federal phosphate leases I-04375 and I-09619 administered by the Bureau of Land Management (BLM), and State Lease #E-07957 administered by Idaho Department of Lands (IDL). The Proposed actions are a modification of a previously approved Mine Plan evaluated by an Environmental Impact Statement (EIS).

In 2003 the EIS Record of Decision was signed, approving mining and reclamation activities for the North Rasmussen Ridge Mine. Condition of Approval #8 required Agrium to validate the groundwater predictive model utilized in the EIS. In 2004, Agrium moved all operations to the newly acquired Dry Valley Mine. In 2009, Agrium notified the BLM that they would reactivate the North Rasmussen Ridge Mine (NRRM) after having sat idle since late 2004. In response, the BLM required Agrium to conduct a Model Validation Study (MVS) to satisfy the Condition of Approval #8. The three above mentioned mine plan modifications are all mitigation measures that resulted from the MVS to reduce potential impacts to surface and groundwater. The proposals constitute activities to adaptively manage the site to ensure that the mine site maintains compliance with the Clean Water Act and the Idaho Groundwater Rule now, and in the future.

The *Resequencing and Northward Draining Backfill* mine modification consists of changing the order in which the mining panels are mined. The approved mine plan had the mining sequence so that panel B phase one was mined partially first then Agrium was to move to phase three, mine it completely and backfill it. Then they were to mine phase two and finish phase one. The backfill was to be placed in a manner that would contain most runoff with in the pit (figure 2). The proposed mining sequence

would be that Agrium would continue to mine in a south to north progression through phases one, two and three. Through the MVS it was determined that there was potential that the volume of runoff entering the pit would be greater than what would leave the pit and begin to develop an internal pit lake due to perched groundwater similar to what has happened in the Central Rasmussen Ridge mine pit. There is a potential that the perched groundwater would raise to a level above the edge of the pit. This would result in water entering the alluvial groundwater in Reese Canyon and ultimately could discharge as impacted surface water into Reese Creek (figure 3 and 4). The mitigation measure that was developed and modeled was to shape the backfill in a manner that surface runoff would be able to flow in a constructed water-tight ditch to the north (figure 5), avoiding seepage into pit backfill and a rising groundwater level that could ultimately overtop and leave the site into Reese canyon creek in a controlled manner so that the creek will not receive more water than what it is capable of handling (figures 6 & 7). As part of the mitigation measure all the Chert and center waste within the high-wall would be covered to prevent contact with surficial water. Other alternatives were reviewed, but the North Draining Backfill was the most effective in reducing the potential impacts (BC, 2013).

The proposed Dinwoody[1] Cover on Panel A was also a result of the MVS and Idaho Department of Environmental Quality (IDEQ) requirement for Agrium to perform a Best Management Practices Analysis (BMPA). The purpose of the BMPA was to look at potential mitigation measures for reducing the predicted impacts to ground water from the mining of phosphate. Through the process, IDEQ decided[2] and BLM, USFS and other agencies concurred that a Dinwoody cover was the most effective for the cost and the amount of reduction of modeled impacts (BC, 2014). The selected cover consists of 6 feet of Chert and Limestone, two feet of Dinwoody, and 2 feet of growth media. The purpose of this cover is to reduce the amount of meteoric water that infiltrates through the mine waste. To address the increased runoff there are several ditches that will be built into the backfill to convey the water off the backfill in a fashion to reduce erosion and infiltration (BC, 2011). The BMPA and interagency evaluation of that document are contained in the BLM lease file.

**B. Extraordinary Circumstances Requiring Preparation of an EA or EIS**

The action described in categorical exclusion DOI-BLM- 1020-2015-0027-CX has been reviewed to determine if any of the following extraordinary circumstances listed below apply, as listed in the Departmental NEPA regulations (43 CFR 46.215). A rationale for why the circumstance does not apply is included below:

**2.1 Have significant impacts on public health or safety.**

No public health or safety issues exist with implementation of the proposed action.

**2.2 Have significant impacts on such natural resources and unique geographic characteristics as historic or cultural resources; park, recreation or refuge lands; wilderness areas; wild or scenic**

[1] Dinwoody is a geologic argillite shale bed of Triassic age that is associated with phosphate overburden that overlies the Phosphoria Formation.

[2] Idaho DEQ has authority to determine the extent of and allow limited degradation of groundwater as codified by statute - Idaho Administrative Procedures Act (IDAPA) Title 1, Chapter 11, 58.01.11, also known as the "Ground Water Quality Rule".

**rivers; national natural landmarks; sole or principal drinking water aquifers; prime farmlands; wetlands (Executive Order 11990); floodplains (Executive Order 11988); national monuments; migratory birds; and other ecologically significant or critical areas.**

The proposed action would occur on National Forest System and State of Idaho lands. There are no known or designated historic or cultural resources, parks, recreation lands, refuges, wilderness areas, wild or scenic rivers, national natural landmarks, national monuments, sole or principal drinking water aquifers, prime farmlands, or any other ecologically significant or environmentally critical areas in the proposed project area. Additionally, no significant impacts would be expected to occur to floodplains or wetlands.

Agrium prepared and submitted a Tier II analysis, under Idaho's surface water antidegradation rule, of Reese Canyon Creek for Idaho Department of Environmental Quality (IDEQ) In a letter dated October 17, 2014, IDEQ informed Agrium that it had reviewed the Tier II analysis report and stated that the degradation to Reese Canyon creek is insignificant (IDEQ 2014).

At least three cultural resource surveys have been conducted in the proposed action area boundary (Maxim 2000, Polk 1991, and Polk 1993). No cultural resources were identified within the confines of the project boundary. As Dinwoody material would be obtained from within the existing approved mine pit boundaries, there is no additional surface disturbance in any of these proposed mine modifications, therefore, impacts to migratory birds are not anticipated.

**2.3 Have highly controversial environmental effects or involve unresolved conflicts concerning alternative uses of available resources [NEPA Section 102(2)(E)].**

No highly controversial environmental effects or involve unresolved conflicts concerning alternative uses of available resources have been identified.
The proposed action would occur within Federal and State mineral leases held by Agrium. The current land use, phosphate mining, is already approved and the proposed action would not change existing resource uses. The amount of new surface disturbance would be negligible.

**2.4 No highly uncertain and potentially significant environmental effects or unique or unknown environmental risks have been identified.**

The predicted impacts are essentially the same as was modeled in the 2003 EIS and does not have highly uncertain and potentially significant environmental effects or involve unique or unknown environmental risks. The proposed mine modifications are within the overall study area analyzed by previous NEPA documents for NRRM. The mine modifications consist of changing how the mine waste is placed within the pit. There is no new material that will be placed within the backfill.

**2.5 Establish a precedent for future action or represent a decision in principle about future actions with potentially significant environmental effects.**

The proposed action would not establish a precedent for future action or represent a decision in principle about future actions with potentially significant environmental effects. Minor Mine plan Modifications are common at large mines of this size. They are a result of many different reasons.

Many are a result of applying newly identified; current scientifically based Best Management Practices (BMP). These mine modifications are mine specific and would not be setting a precedent.

**2.6 Have a direct relationship to other actions with individually insignificant but cumulatively significant environmental effects.**

The proposed actions would not increase the current disturbance at NRRM. No other activities are currently taking place in the vicinity of the proposed action that would potentially result in cumulatively significant environmental effects except for what has already been approved by the current Mine Plan.

**2.7 Have significant impacts on properties listed, or eligible for listing, on the National Register of Historic Places as determined by either the bureau or office.**

The area proposed for disturbance has been surveyed with regards to cultural resources and no additional impacts from the proposed action are anticipated. At least three cultural resource surveys have been conducted in the proposed action area boundary (Maxim 2002, Polk 1991, and Polk 1993). No eligible properties or properties eligible for listing were identified within the confines of the project boundary.

**2.8 Have significant impacts on species listed, or proposed to be listed, on the List of Endangered or Threatened Species, or have significant impacts on designated Critical Habitat for these species.**

According to the U.S. Fish and Wildlife Service's Information, Planning, and Conservation System (IPaC) species list for the project area (dated January 22, 2015, Consultation Code #01EIFW00-2015-SLI-0219:), the following listed species were shown as potentially occurring in the project area; Bliss Rapids snail (*Taylorconcha serpenticola*), Snake River physa snail (*Physa natricina*) and Canada lynx (*Lynx canadensis*). No designated critical habitat for any species occurs within or near the project area. The Bliss rapids snail and the Snake River physa snail do not occur in or near the project area; therefore there will be *No Effect* to these species. Reference the USFWS "Species Profile" sheets located in the project record for additional information on these species. These species were likely included in the list be default, given that they are listed "wherever found." Impacts to lynx were discussed in the 2003 DEIS and the 2003 FEIS, with the potential impacts to lynx consisting primarily of the impacts to linkage habitat and potential impacts resulting from lynx exposure to water or prey contaminated with selenium. The minor changes to the mining sequence, backfill shaping, and the incorporation of the Dinwoody Cover would not result in impacts to linkage habitat that were not previously considered (i.e. this project is not expanding the overall footprint of the mine, and will be no more of a potential barrier than what was described in the 2003 FEIS). Further, these activities would have no potential to increase the potential for lynx exposure to selenium, (incorporation of the Dinwoody cover and the improved backfill shaping is more likely to decrease the potential for this already unlikely impact). The analysis completed in 2003 remains valid, and as such re-initiation of consultation for this project is not necessary.

**2.8 Violate a Federal law, or a State, local, or tribal law or requirement imposed for the protection of the environment.**

The proposed action is not expected to violate any known law or requirement imposed for the protection of the environment.

**2.9 Have a disproportionately high and adverse effect on low income or minority populations (Executive Order 12898).**

The proposed action would not have any discernible effect on low income or minority populations.

**2.10 Limit access to and ceremonial use of Indian sacred sites on Federal lands by Indian religious practitioners or significantly adversely affect the physical integrity of such sacred sites (Executive Order 13007).**

The proposed action would not limit access or use of such sites, nor would it adversely affect the physical integrity of such sites.

**2.11 Contribute to the introduction, continued existence, or spread of noxious weeds or non-native invasive species known to occur in the area or actions that may promote the introduction, growth, or expansion of the range of such species (Federal Noxious Weed Control Act and Executive Order 13112).**

The approved Mine Plan requires Agrium to take measures to prevent the introduction, continued existence, or spread of noxious weeds and non-native invasive species. It is unlikely the proposed action would contribute to the introduction or spread of such species. All heavy equipment will be steam cleaned and/or pressure washed prior to traveling on USFS lands to prevent weed seed transportation by vehicles.

## C. Land Use Plan Conformance

There are two Land Use Plans (LUPs) applicable to the proposed action: the *Caribou National Forest Revised Forest Plan* approved February 13, 2003 and the BLM's *Pocatello Resource Management Plan* approved April 4, 2012. The proposed action is in conformance with these LUPs which specifically allow a lessee or designated operator to mine phosphate on a Federal phosphate lease. The proposed action is subject to the same conditions of approval and mitigation measures developed during NEPA review of the exploration plan, and would not change the mitigation measures designed to ensure LUP conformance that are part of the BLM approval documents.

It is typical for an approved mine plans to be adjusted in order to accommodate new information that affects mining and reclamation. Reclamation and environmental control measures may also need to be adjusted or otherwise adaptively managed based on new information such as monitoring results. This situation is considered to be standard practice. Mine plan modifications are codified in Title 43 of the *Code of Federal Regulations,* Part 3506.2, 3590.2 and 3592.1, and are anticipated when BLM conducts NEPA analysis and implements a decision to allow mining.

## D. Compliance with NEPA:

The proposed action is categorically excluded from further documentation under NEPA in accordance with 516 DM, Chapter 11, Section F-Solid Minerals, (7) "Approval of a minor modification to or minor variances from activities described in an approved exploration plan for leasable minerals.

This CX is appropriate in this situation because there are no extraordinary circumstances potentially having effects that may significantly affect the environment. The proposed action has been reviewed, and none of the extraordinary circumstances described in 516 DM 2 apply.

## E. Decision Record / Rationale:

My decision is to approve the North Rasmussen Ridge Mine Plan Modifications as part of a minor modification to the approved Mine plan for North Rasmussen. I have reviewed and assessed the proposal within the intent of the CX described in 516 DM 11.9, Section F-Solid Minerals and have determined that extraordinary circumstances do not exist that would require further NEPA analysis.

Agrium holds the lease issued to them by the Federal government that allows them exclusive rights to mine phosphate reserves within the lease. This decision allows them to exercise those rights subject to adherence to mitigation measures that are part of their lease and also those that are in their approved exploration plan. The proposed action is categorically excluded from further documentation under NEPA.

Below are the conditions of approval for the above mentioned mine modification for the Storm Water Management Controls plan:

1. Submittal of one copies of an as-built plan to Bureau of Land Management (BLM), one copy to Idaho Department of Lands IDL), and one copy to the US Forest Service (USFS) after construction is completed.
2. Submit an updated Storm Water Pollution Prevention Plan (SWPPP) to the BLM, USFS, IDL and IDEQ.

Below are the conditions of approval for the above mentioned mine modification the North Draining Backfill Mitigation Measure Mine Modification:

1. Submit a construction plan and detailed design for review and approval, stamped by a professional engineer, prior to construction on the conveyance ditch.
2. As-Builts will be submitted after construction with 1 copy being submitted to the BLM, one copy to IDL, and one copy to USFS.
3. Install a well into the backfill in the deepest part of the pit in Reese canyon in order to monitor water levels with in the pit backfill.
4. Update the bond to include Operations and Maintenance of the ditch and the structures until they are no longer needed or required.

## F. Appeals Information:

Appeals information can be found at 43 CFR 4.410.

## G. Implementation:

I have reviewed the plan conformance statement and have determined that the proposed action is in conformance with the approved land use plan. The activities meet the category of actions noted above and I have determined that none of the exceptions apply; therefore, no further environmental documentation is required.

## H. Signature

Date: 5/20/15

Authorized Officer
Jeremy Casterson
Acting District Manager

**Contact Person**

For additional information concerning this CX review, contact Jeff Cundick, Minerals Branch Chief, at (208) 478-6354.

# References

BC, 2011, Technical Memorandum No. 4 Final, Model Validation Study Surface Water Impacts Analysis Update (SOW No. 2)

BC, 2013, Technical Memorandum No. 8, Panel B Ponded Conditions and Mitigation Measures Evaluation.

BC, 2014, Technical Memorandum, Groundwater Best Management Plan Analysis

IDEQ, Letter to Al Haslam, Re: North Rasmussen Ridge Mine, Reese Canyon Creek Tier II Anti-Degradation Analysis and Finding of Insignificance.

Maxim Technologies Inc. 2002, Baseline Date Collection, Cultural Resources, North Rasmussen Ridge Mine, Caribou County Idaho.

Polk, A.S., 1991, A Cultural Resource Survey of an Extension of the Rasmussen Ridge Phosphate Mine, Caribou County Idaho.

Polk, A.S., 1993, A Cultural Resource Survey of a Proposed Haul Road and Phosphate Mine Parcels on Wooley and Rasmussen Ridges, Caribou County Idaho.

# Figures

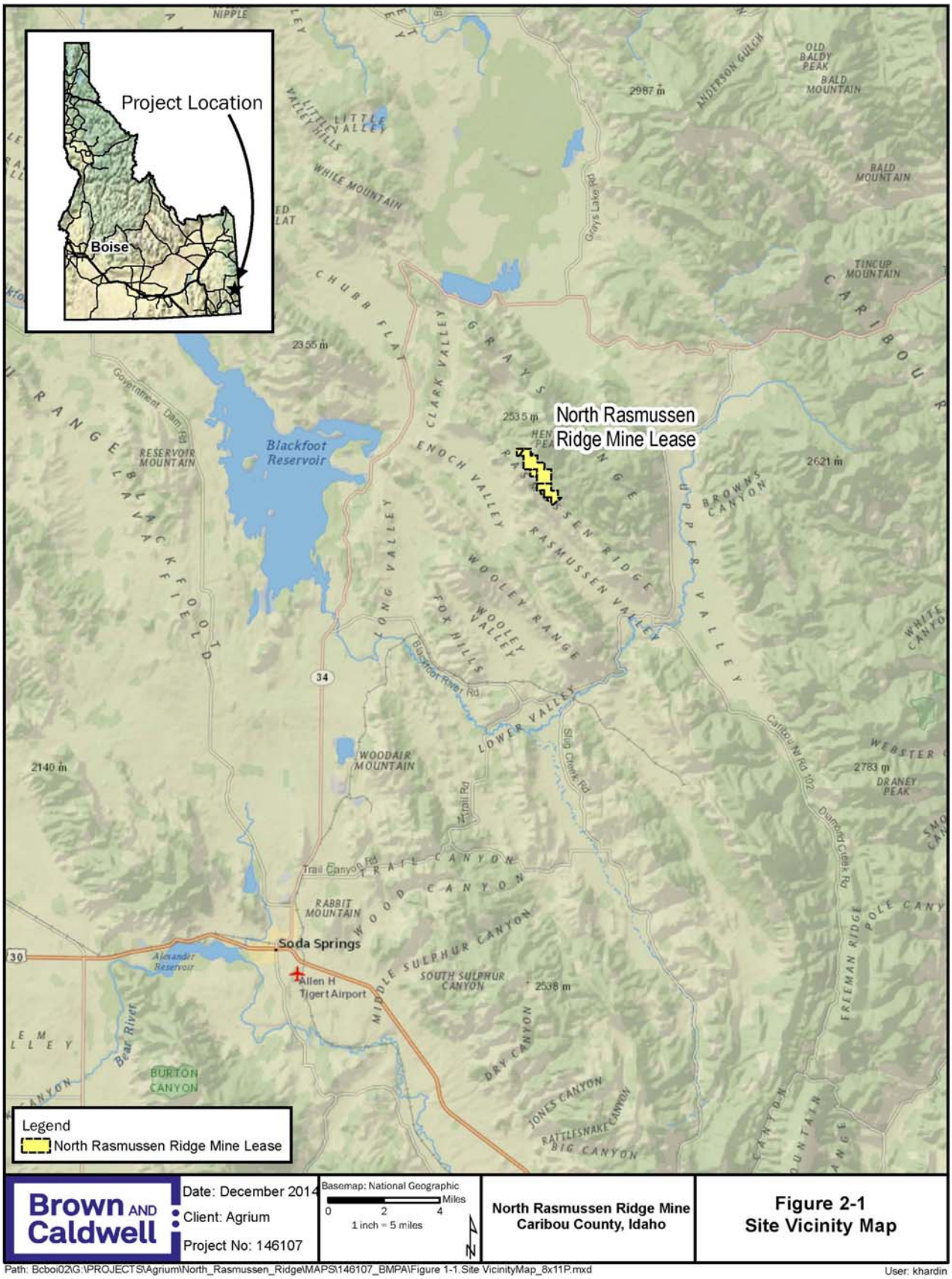



Figure 1 Site Vicinity Map

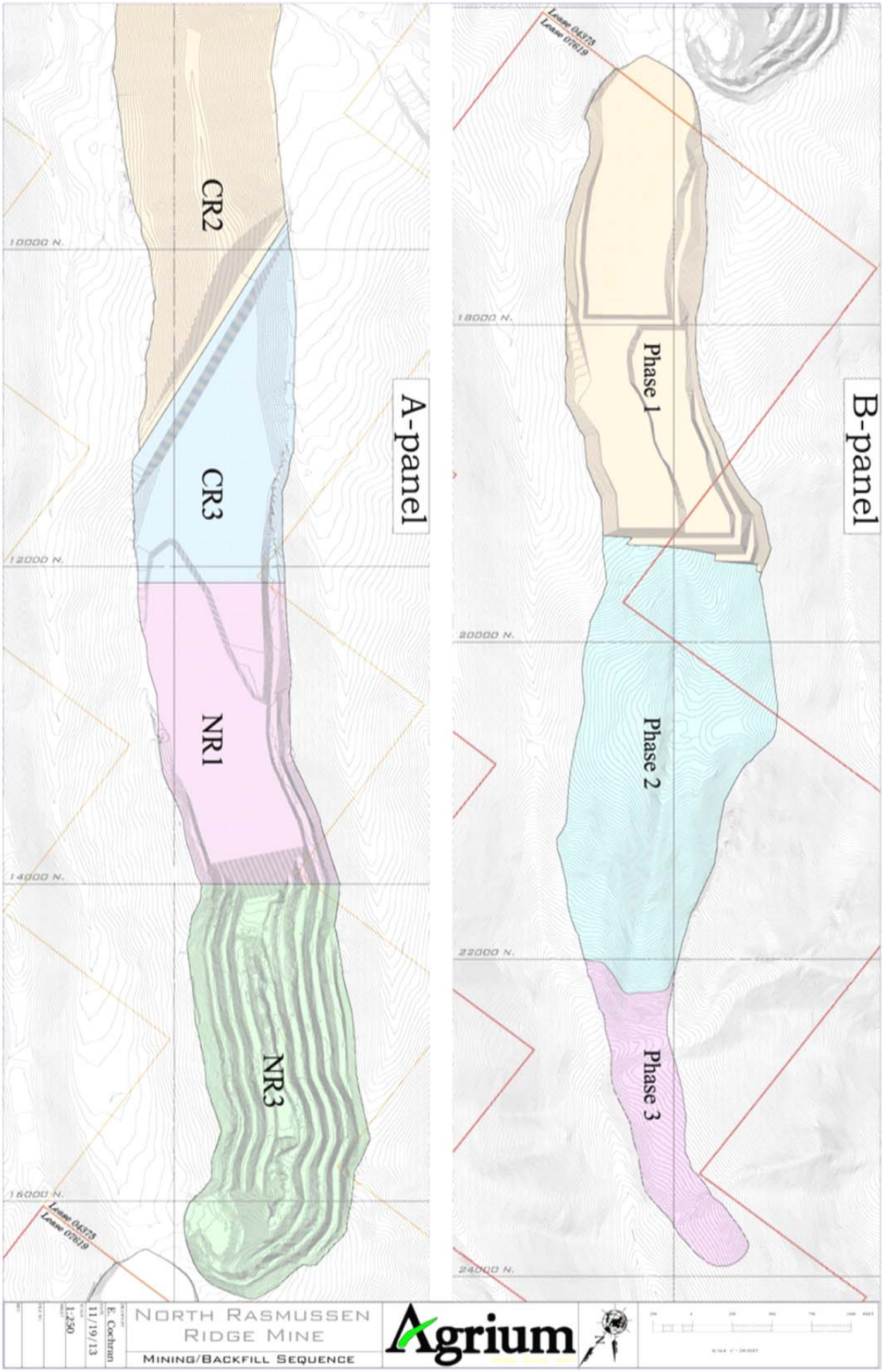



**Figure 2 NRRM Mining Phases for Panels A and B.**

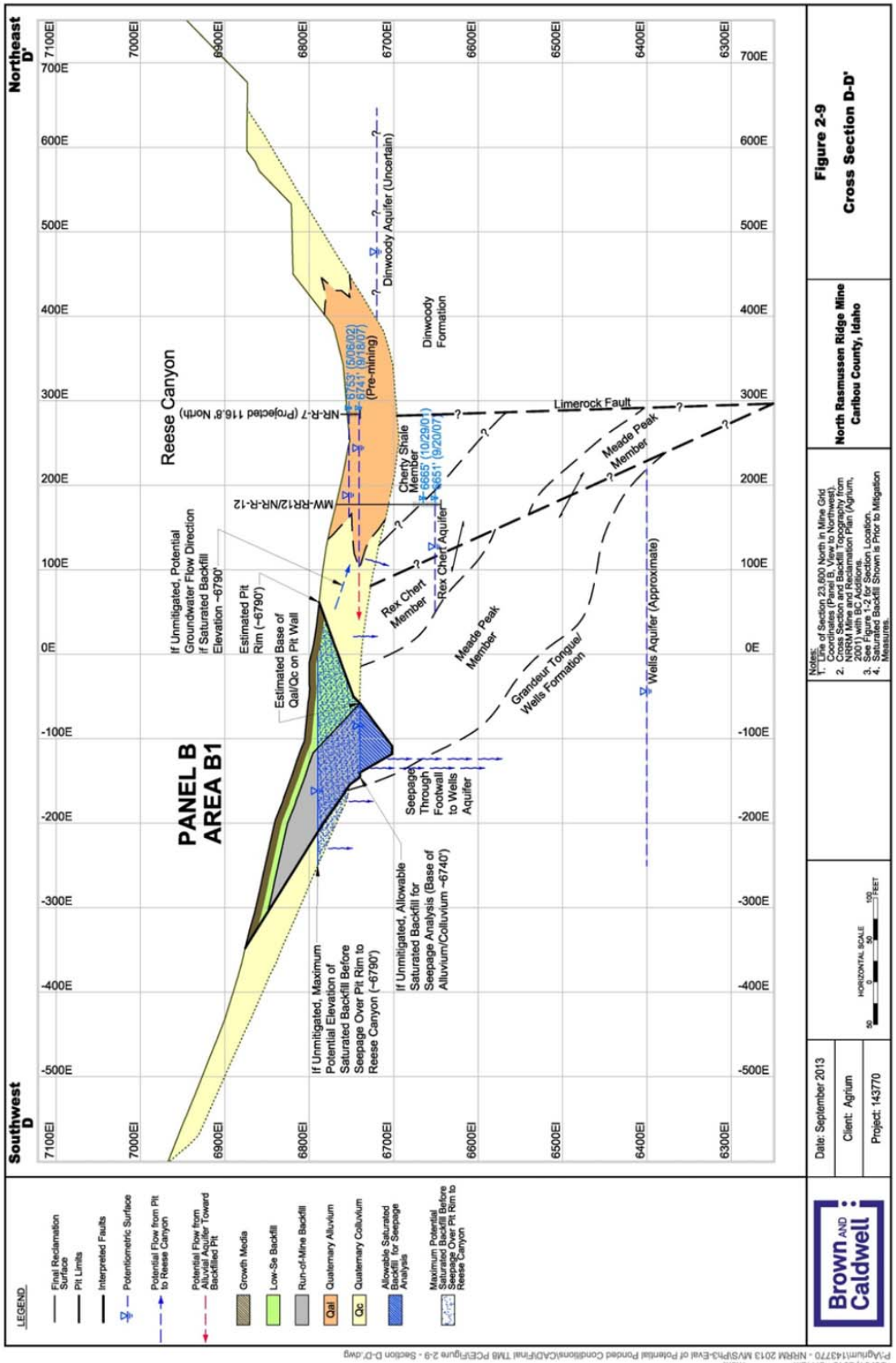



**Figure 3 Cross Section of Potential Pit Lake in Panel B.**

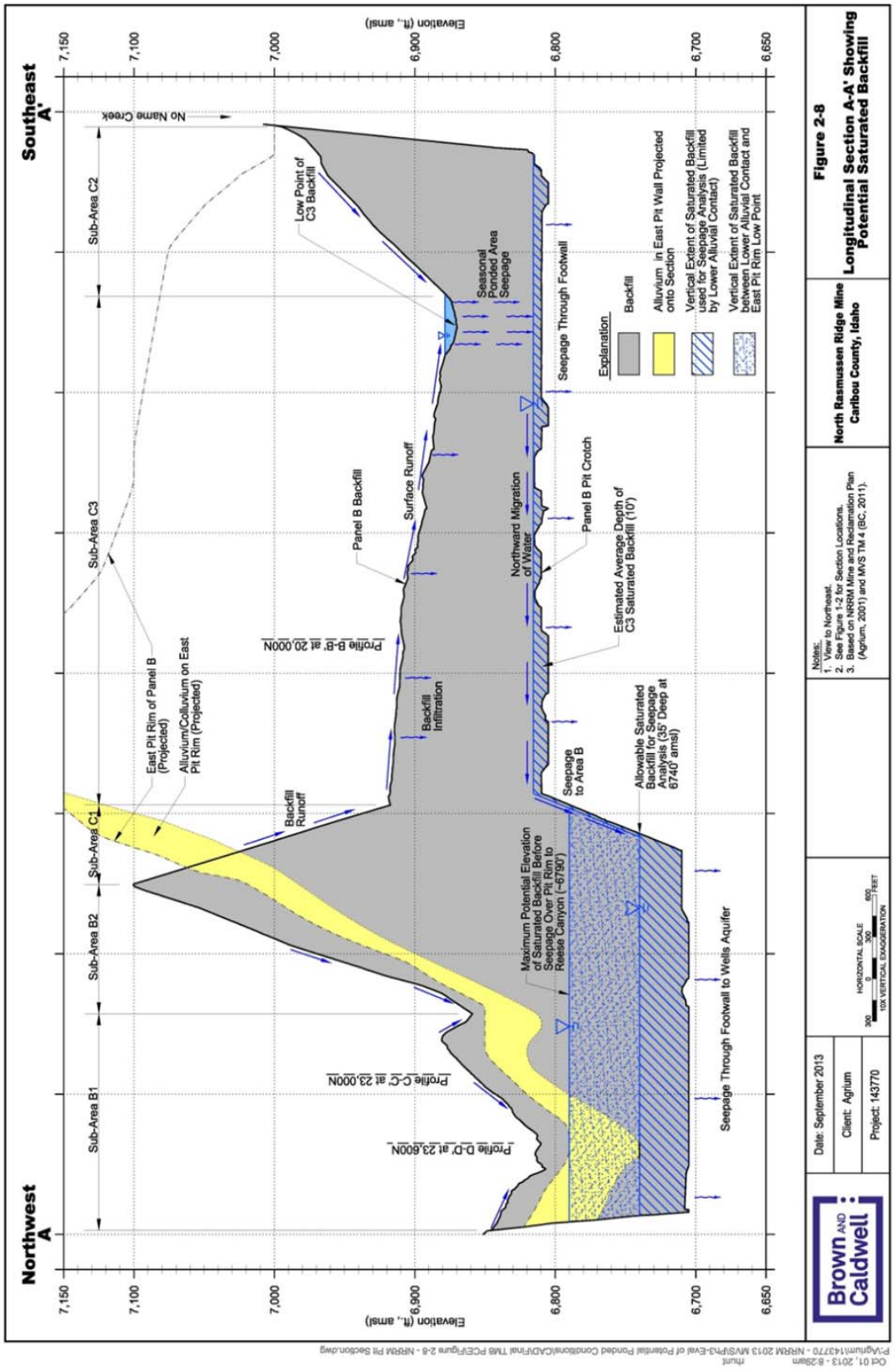



Figure 4 Long Section of Potential Pit lake in Panel B.

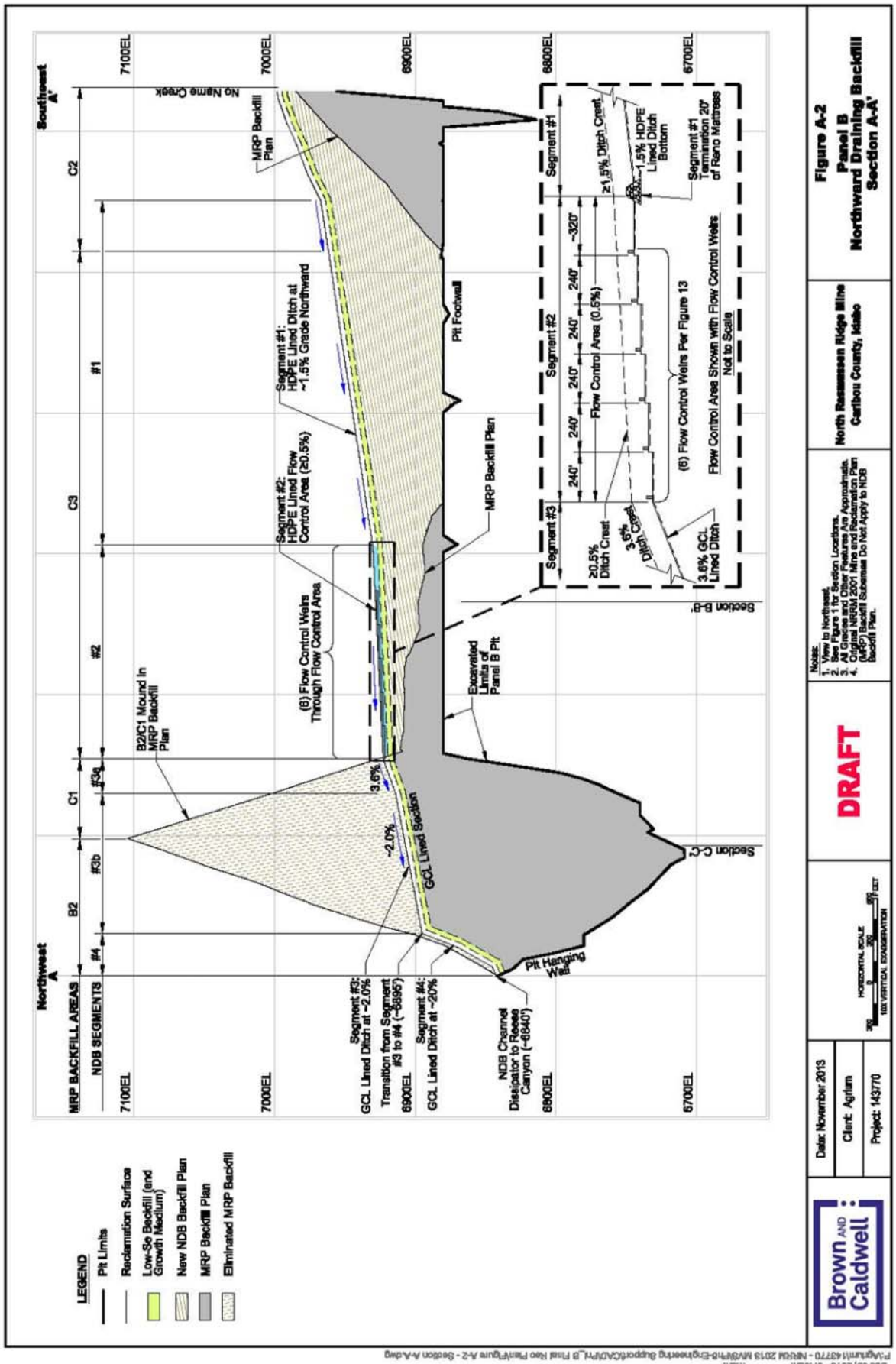
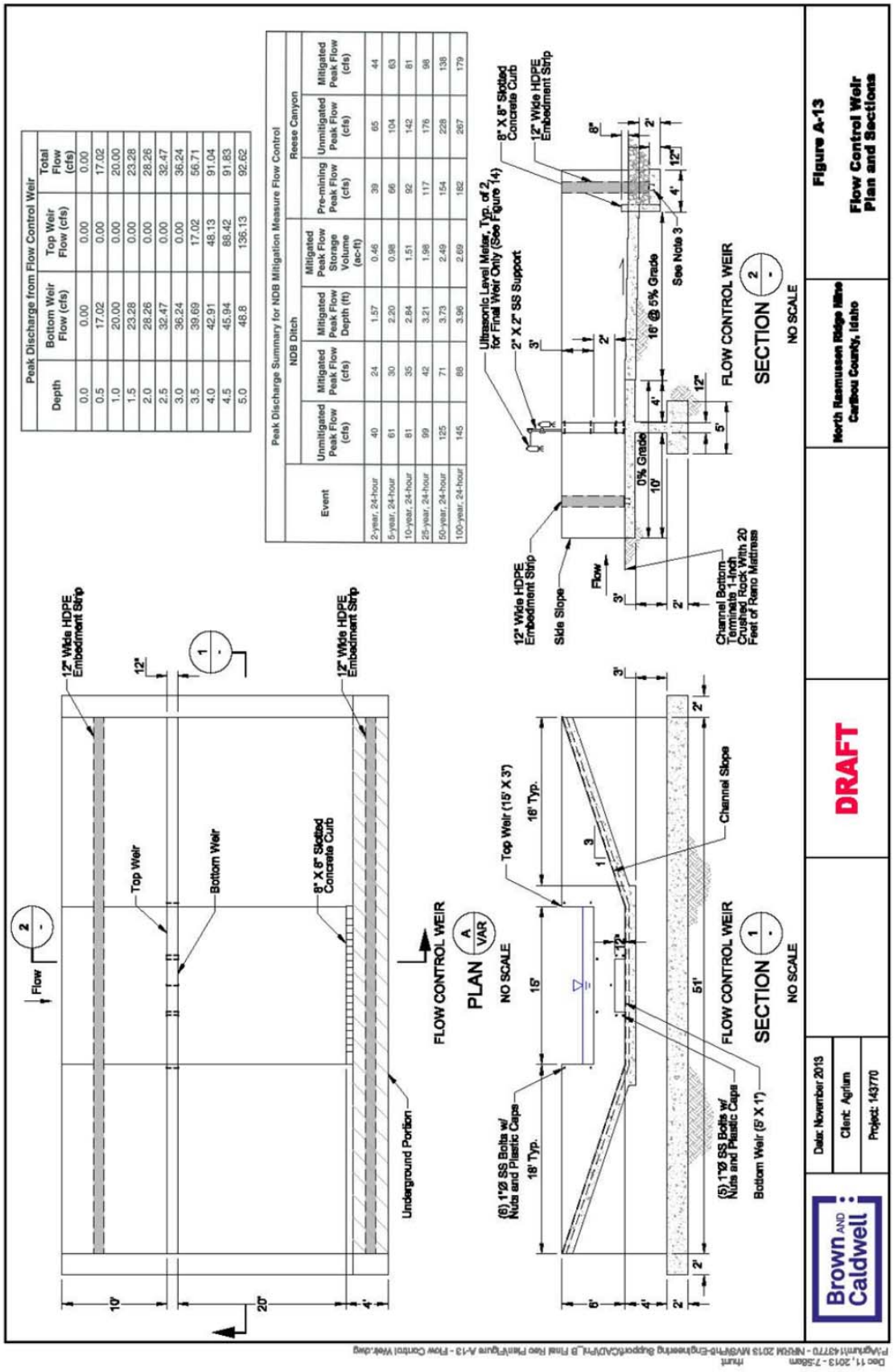



**Figure 5 North Draining Backfill Reclamation Cross Section**




| Peak Discharge from Flow Control Weir | | | |
|---|---|---|---|
| Depth | Bottom Weir Flow (cfs) | Top Weir Flow (cfs) | Total Flow (cfs) |
| 0.0 | 0.00 | 0.00 | 0.00 |
| 0.5 | 17.02 | 0.00 | 17.02 |
| 1.0 | 20.00 | 0.00 | 20.00 |
| 1.5 | 23.28 | 0.00 | 23.28 |
| 2.0 | 28.26 | 0.00 | 28.26 |
| 2.5 | 32.47 | 0.00 | 32.47 |
| 3.0 | 36.24 | 0.00 | 36.24 |
| 3.5 | 39.69 | 17.02 | 56.71 |
| 4.0 | 42.91 | 48.13 | 91.04 |
| 4.5 | 45.94 | 88.42 | 91.83 |
| 5.0 | 48.8 | 136.13 | 92.62 |

| Peak Discharge Summary for NDB Mitigation Measure Flow Control | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | NDB Ditch | | | | Reese Canyon | | | |
| Event | Unmitigated Peak Flow (cfs) | Mitigated Peak Flow (cfs) | Mitigated Peak Flow Depth (ft) | Mitigated Peak Flow Storage Volume (ac-ft) | Pre-mining Peak Flow (cfs) | Unmitigated Peak Flow (cfs) | Mitigated Peak Flow (cfs) |
| 2-year, 24-hour | 40 | 24 | 1.57 | 0.46 | 39 | 65 | 44 |
| 5-year, 24-hour | 61 | 30 | 2.20 | 0.98 | 66 | 104 | 63 |
| 10-year, 24-hour | 81 | 35 | 2.84 | 1.51 | 92 | 142 | 81 |
| 25-year, 24-hour | 99 | 42 | 3.21 | 1.98 | 117 | 176 | 98 |
| 50-year, 24-hour | 125 | 71 | 3.73 | 2.49 | 154 | 228 | 138 |
| 100-year, 24-hour | 145 | 88 | 3.96 | 2.69 | 182 | 267 | 179 |

**Figure 6 Flow Control Structure in Channel.**

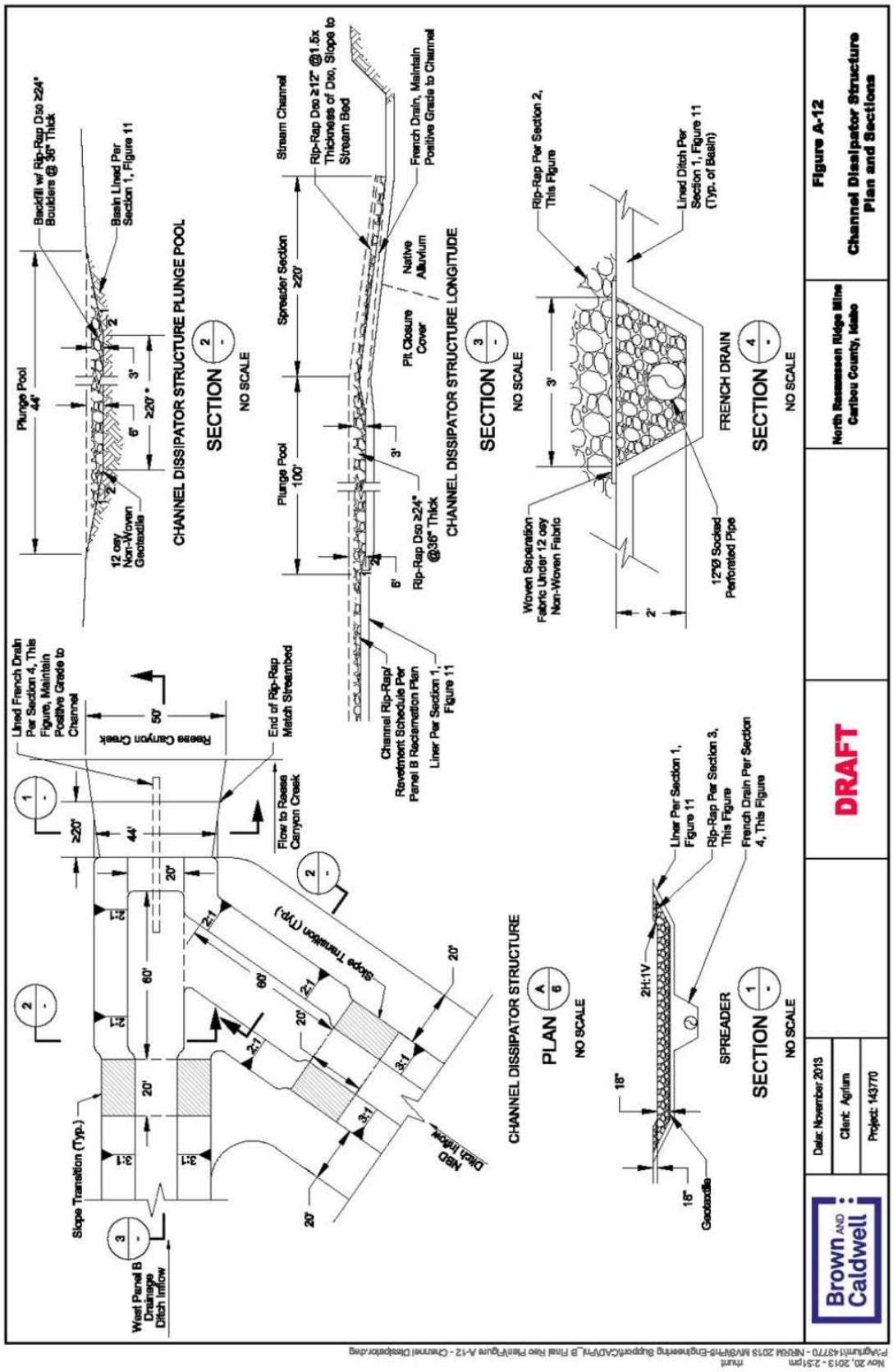



Figure 7Flow Control structures in channel.