



Benga Mining Limited operating as Riversdale Resources

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October 16, 2017

Alberta Energy Regulator
Suite 1000, 250 – 5th Street SW
Calgary, Alberta T2P 0R4

Attn: Africa Geremew (Africa.Geremew@aer.ca)

Dear Mr. Geremew:

Re: Benga Mining Ltd. – Grassy Mountain Coal Mine Project – Water Diversion Licence Applications (Appendix 1E)

Please find attached the documents for three *Water Act* (Water Diversion Licence, permanent and temporary Transfer) applications for the Benga Mining Ltd (Benga) Grassy Mountain Coal Project (the Project) located in Crowsnest Pass, Alberta. This document serves as [Appendix 1E](#) – “Water Act Diversion Licence Application”, and is being submitted as an addendum to the original submission filed on August 12, 2016, and is further supported by [Appendix 1D](#) – Water Act Fence-line Application for Approval, which is provided under a separate cover. [Appendix 1D](#) provides a more detailed explanation of the Project’s site-wide annual water balance and the management of that water.

The following Water Diversion Licence applications are consistent with the restrictions and regulations on new surface water licence applications in the South Saskatchewan River Basin. This version of [Appendix 1E](#) has been updated to request a temporary transfer of a water allocation from York Creek that will replace the request for an allocation from Gold Creek. The three allocations Benga is applying for involve:

- an allocation for industrial purposes for 185,022 m³ (150 ac. ft.) of reserved water available under the Oldman River Basin Water Allocation Order, Alberta Regulation 319/2003 and amended to 109/2010 issued at the Fence-line ([Attachment A](#));
- a transfer of an existing Licence 0039493-00-01, held by Devon Canada on the Crowsnest River, to Benga for 123,350 m³ (100 ac. ft.) to the Fence-line ([Attachment B](#)); and
- a temporary transfer of an existing Licence 00045622-00-00, held by the Municipality of Crowsnest Pass on York Creek, to Benga for 250,400 m³ (203 acre feet) ([Attachment C](#)). This is a partial transfer as the Licence currently allows for 308, 280 m³ (250 ac. ft.).



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To support the applications, this document also provides an overview of the annual water balance, context around each water diversion licence application as it applies to the Project, with attached *Water Act* forms.

Please do not hesitate to contact the undersigned at 403-753-5160 if there are any questions regarding these applications.

Sincerely,

A handwritten signature in black ink, appearing to read "Cal Clark".

Cal Clark, Manager Sustainable Development
Benga Mining Ltd.

cc. Nadia Haider, AER



Grassy Mountain Coal Mine Project

Appendix 1E:

Water Act Licencing Application

October 2017

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Attachment B	– Devon Water Licence Transfer (123,350 m ³ , 150 ac. ft.) (0039493-00-01)
Attachment C	– Municipality of Crowsnest Pass temporary transfer of York Creek Licence (0004562-00-01) (250,400 m ³ , 203 ac. ft.)

1.0 INTRODUCTION

Benga Mining Limited (Benga) is applying under the Alberta *Water Act* (WA) to divert up to 558,772 m³ annually of new, non-recycled, surface water runoff for industrial use at its Grassy Mountain Coal Project (the Project). This application applies to lands described in the Project's Fence-line water management application for Approval provided in [Appendix 1D](#). Benga is applying for three licences under the WA to divert surface water runoff to maintain ongoing operations from start-up through to end-of-mine and final reclamation of the site. If a term is required, Benga requests a longer-term licence to align with ultimate receipt of a reclamation certificate which will take more than 25 years.

The annual total volume of the water diversions will be sourced from surface runoff and the point of diversion will be all points where water is diverted from surface water runoff within the boundaries of the Fence-line approval ([Figure 1-1](#)) with the consumption being in the Coal Processing Plant (CPP), through water drawn from the nearby Raw Water Pond (RWP). The requested diversion licences are within the restricted South Saskatchewan River Basin (SSRB) as per the Bow, Oldman and South Saskatchewan River Basin Water Allocation Order (2007). As a result of this and in the spirit of water conservation in the region, Benga has included numerous water saving measures to minimize water requirements for the project that are not the norm for projects of this nature. This includes proposed changes in the CPP including mechanical dewatering of the reject materials prior to its placement into the waste dumps or pit. An addendum providing the details of these changes has been submitted to the AER. Benga has identified three available allocations of water in the Basin for a total volume of 558,772 m³. The issuance of licences to Benga for the following water allocations are consistent with the WA and applicable regulations including the Oldman River Basin Water Allocation Order:

- an allocation for industrial purposes for 185,022 m³ (150 acre feet) of reserved water available under the Oldman River Basin Water Allocation Order, Alberta Regulation 319/2003 and amended to 109/2010 issued at the Fence-line ([Attachment A](#));
- a transfer of an existing Licence 0039493-00-01, held by Devon Canada on the Crowsnest River, to Benga for 123,350 m³ (100 acre feet) to the Fence-line ([Attachment B](#)); and
- a temporary transfer of an existing Licence 00045622-00-00, held by the Municipality of Crowsnest Pass on York Creek, to Benga for 250,400 m³ (203 acre feet) ([Attachment C](#)). This is a partial transfer as the Licence currently allows for 308, 280 m³ (250 ac. ft.).

The water management plan ([Appendix 1D, Fence-line WA Application](#)) includes a series of ponds and connecting ditches to assist in the capture, storage and movement of water around the

site within the Fence-line prior to its release into the adjacent creeks. Benga is requesting that a portion of this surface water runoff be licenced and diverted for use in its operations.

2.0 ANNUAL WATER BALANCE

[Figure 2-1](#) is a water balance flow diagram, illustrating that runoff water will be diverted for the project to support operations. [Table 2.2-1](#) provides an annual water balance for determining the maximum amount of surface water runoff required to be licenced and diverted annually to support project operations.

2.1 Production

The total amount of water required by the Coal Processing Plant (CPP) annually depends on the expected amount of raw coal that is processed each mine year ([Table 2.2-1](#)). According to the mine plan, the amount of production begins at 3.7 million raw metric tonnes (RMT) (2.0 million clean metric tonnes (CMT)) in the first year of operations and increases to approximately 3.7 million RMT (4.2 million CMT) by year 3. Maximum production is estimated to be 8.4 million RMT (4.6 million CMT) at year 12 and then begins to decline later in the mine life until the expected end of production on or around year 23. Clean product coal leaves the site while the reject material from the CPP is returned either to the waste dumps or back into the mine pit.

2.2 Operational Water Requirements

To satisfy the operational water requirements for the project, water will be diverted from sources within the fence-line diversion approval and managed through RWP.

Benga have incorporated into the CPP design additional mechanical dewatering technology of the product coal and the coarse reject material in the CPP as a measure to reduce annual operational water requirements for a project of this size ([Figure 2-1](#)). The CPP will require 57 litres per raw metric tonne (RMT) of licenced make up water, to replace water lost in the product coal that leaves the site and water that leaves the CPP in the reject material to be co-emplaced with the mine waste either in the waste dumps or back into the pit ([Table 2.2-1](#)). The water balance assumes that no water in the reject material will be released from the waste dumps and available for reuse in the CPP. This is a conservative assumption and it is known that operationally water will eventually be released from the waste dumps, where it will be captured through site water management of recycled water. Subsequently, this would reduce the actual licenced make-up water requirement. This waste dump recapture is not part of the water balance calculations based on unknowns in runoff coefficients and lag times within the waste dumps. For the water balance calculations, the primary assumption was that the primary source water for the CPP will come from the RWP. The annual volume of make-up water

required varies with production (Table 2.2-1). The maximum amount of make-up water needed for the CPP (478,230 m³) occurs at maximum production in year 12 (Table 2.2-1).

Other operational water requirements include the wash down facility which will require up to 2,000 m³ per year of additional make up water and evaporative losses from the RWP which are estimated to be 25,000 m³ annually.

The total maximum amount of licenced water requested in these three WA licence applications to support core operations is 506,028 m³. The maximum water use occurs in year 12. However, if a 10% contingency is considered at the peak period, 556,631 m³ will require licencing which will be covered by the total amount applied for under the *Water Act* diversion licence applications (558,772 m³). The water will be sourced from surface water captured within the Fence-line approval, which is described further in the following section.

Year	Production		Licenced Water Requirements				
	ROM Material (RMT) (Tonnes)	Est. Production (CMT) (Tonnes)	Total CPP Make-up Water (m ³) ¹	Wash Down Make-up Water (m ³)	Evaporation from RWP (m ³)	Total Licenced Water from RWP (m ³)	Total with 10% Contingency (m ³)
-1							
0	0	0	5000	20,000	25,798	50,798	55,878
1	3,688,000	2,028,400	210,216	2,000	25,798	238,014	261,815
2	6,333,000	3,483,150	360,981	2,000	25,798	388,779	427,657
3	7,632,000	4,197,600	435,024	2,000	25,798	462,822	509,104
4	8,008,000	4,404,400	456,456	2,000	25,798	484,254	532,679
5	8,008,000	4,404,400	456,456	2,000	25,798	484,254	532,679
6	8,008,000	4,404,400	456,456	2,000	25,798	484,254	532,679
7	8,008,000	4,404,400	456,456	2,000	25,798	484,254	532,679
8	8,136,000	4,474,800	463,752	2,000	25,798	491,550	540,705
9	8,260,000	4,543,000	470,820	2,000	25,798	498,618	548,480
10	8,257,000	4,541,350	470,649	2,000	25,798	498,447	548,292
11	8,131,000	4,472,050	463,467	2,000	25,798	491,265	540,392

Table 2.2-1 Project Water Use and Licence Requirements							
Year	Production		Licenced Water Requirements				
	ROM Material (RMT) (Tonnes)	Est. Production (CMT) (Tonnes)	Total CPP Make-up Water (m ³) ¹	Wash Down Make-up Water (m ³)	Evaporation from RWP (m ³)	Total Licenced Water from RWP (m ³)	Total with 10% Contingency (m ³)
12	8,390,000	4,614,500	478,230	2,000	25,798	506,028	556,631
13	7,475,000	4,111,250	426,075	2,000	25,798	453,873	499,260
14	7,000,000	3,850,000	399,000	2,000	25,798	426,798	469,478
15	6,635,000	3,649,250	378,195	2,000	25,798	405,993	446,592
16	6,457,000	3,551,350	368,049	2,000	25,798	395,847	435,432
17	7,572,000	4,164,600	431,604	2,000	25,798	459,402	505,342
18	7,000,000	3,850,000	399,000	2,000	25,798	426,798	469,478
19	6,836,000	3,759,800	389,652	2,000	25,798	417,450	459,195
20	7,110,000	3,910,500	405,270	2,000	25,798	433,068	476,375
21	7,000,000	3,850,000	399,000	2,000	25,798	426,798	469,478
22	7,000,000	3,850,000	399,000	2,000	25,798	426,798	469,478
23	6,671,000	3,669,050	380,247	2,000	25,798	408,045	448,850

¹ Equals RMT x 57 litres / RMT

2.3 Water Sources

The primary source of water to support continuing operations is surface runoff captured on site which a surface runoff diversion licence under the Water Act is required. Supplemental sources of water include the connate water in the ROM material delivered to the CPP (5% total in-situ moisture), water circulating in the CPP which will at a maximum be approximately 5,000 m³ at any point in time and recycle water from the wash down.

Sources of surface runoff water include precipitation, and existing water being managed through the site water management plan described in the Fence-line application ([Appendix 1D](#)). To ensure water quality in the surrounding waterways is maintained, all surface runoff water within the Project Fence-line must be managed and, if necessary, treated to meet water quality standards prior to release.

As shown in [Figure 2-1](#) there is a substantial portion of the CPP water that returns to the site as moisture (12.7%) in the reject material co-emplaced into the waste dumps. As a result of the material sizing and composition, being very low in clay bearing materials, this moisture in the reject material will release relatively quickly, with the majority being in less than 12 months. For the purposes of determining the amount of water applied for in the WA diversion licences, the moisture in the reject materials was assumed to be unavailable. This is a conservative assumption as there is substantial evidence of this co-emplaced rejects moisture releasing on other sites and our analysis indicates it will be free draining at the Project. It is expected that the moisture content of the rejects within the waste dumps will reduce over time from 12.7% to 6.1%. This liberated water (considered return flow), less some evaporation, will be captured at the toe of the waste dumps and recycled to the RWP to be reused in the production process, therefore reducing the amount of actual licenced surface runoff water required to be diverted to sustain operations. There is substantial potential in this for the recycle of processed water within the site and could reduce the CPP make up water requirement by a further 40%. As such, while not considered in this application, in the spirit of the SSRB the liberation of this reject water will be monitored as the project operations commence which could result in a reduction in water that needs to be licenced.

3.0 WATER DIVERSION APPLICATIONS

3.1 Point of Diversion

The point of diversion will be for all lands described in the Project's Fence-line water management application provided in [Appendix 1D](#), particularly the RWP located at SW-024-008-04-W5M near the southern end of the fence-line *Water Act* approval for the Grassy Mountain Project. The annual total volume of the water diversions will be sourced from surface runoff and the point of diversion will be all points where water is diverted from surface water runoff within the boundaries of the Fence-line approval ([Figure 1-1](#)) with the consumption being in the Coal Processing Plant (CPP) through water drawn from the nearby Raw Water Pond (RWP). The maximum industrial volume that will require licencing to support project operations is estimated to be 506,028 m³ in year 12 (plus 10% contingency) ([Table 2.2-1](#)). Benga has identified and is applying for, the following three water licence allocations and transfers to be issued at the fence-line point of diversion:

- a licenced industrial allocation for 185,022 m³ (150 acre feet) of water reserved and available under the Oldman River Basin Water Allocation Order (the "Order"), Alberta Regulation 319/2003 and amended to 109/2010 diverted at the Fence-line ([Attachment A](#));

- a transfer of a Licence 0039493-00-01, held by Devon Canada on the Crowsnest River, to Benga for 123,350 m³ (100 acre feet) to the Fence-line ([Attachment B](#)); and
- a temporary transfer of an existing Licence 00045622-00-00, held by the Municipality of Crowsnest Pass on York Creek, to Benga for 250,400 m³ (203 acre feet) ([Attachment C](#)). This is a partial transfer as the Licence currently allows for 308, 280 m³ (250 ac. ft.).

3.2 Oldman River Basin Water Allocation Order – Industrial Reserve

In the Oldman River Basin Water Allocation Order, Alberta Regulation 319/2003 and amended to 109/2010 (Order), section 2(b) states that the limit for industrial allocations is 150 acre feet (185,025 m³). The order makes the reserved water available to new allocations in the tributaries of the Oldman River including the Crowsnest River and its tributaries, Blairmore and Gold creeks. A WA application for a new water allocation for the 185,025 m³ (150 ac. ft.) reserved for industrial purposes is provided in [Attachment A](#).

If a term is required, Benga requests a longer-term licence to align with ultimate receipt of a reclamation certificate which will take more than 25 years, from the tentative start date of January 1, 2018 in order to ensure operations are maintained through to end-of-mine production and final reclamation of the site. If a shorter licence expiry period is contemplated, there is a concern that the mining/excavation sites could not be brought to acceptable contours for the permanent reclamation of this historically disturbed site.

Benga requests the priority date for this application reflect the 2003 date identified in the Order.

Downstream Impacts

The allocation will be diverted at the fence-line boundary towards the storage reservoir. The diversion will in effect take place at the time when the natural flow from the land within the fence-line would have flowed to the Blairmore and Gold creeks.

The diversion will have no effect on any licencees, registrants or household users as the new application will receive the most junior priority on the Crowsnest River. Any licences downstream of the Oldman Reservoir that may have been issued between 2003 and basin closure in 2007 will be mitigated by releases from the Oldman Reservoir.

The impact on the aquatic environment will be negligible because the Instream Flow Needs will be met at all times during the diversions on Blairmore and Gold creeks ([Consultant Report #6 Addendum: Appendix A3 \(2017\)](#)).

3.3 Devon Water Licence (#0039493-00-01) Transfer

Benga and Devon Canada request the transfer of Licence 0039493-00-01 to Benga for 123,350 m³ (100 ac. ft.). Additional information supporting this transfer is provided in [Attachment B](#). With respect to this licence, Benga acknowledges that the licensee (Devon) is in the latter stages of decommissioning the associated operations tied to this licence. Benga recognizes that the test of “in good standing” must be able to accommodate the reality of industrial operations where the licence transfer cannot be committed to until the decommissioning of a facility is near completion. If a licensee were to commit to a transfer before the final completion of decommissioning and land reclamation, it may place a licensee in a difficult position if the water allocation is needed beyond the first anticipated timeline for completion.

The record shows that Devon utilized the licence for the intended purpose at the intended site and are now near the completion of their decommissioning of site. As a guideline to the appropriate time for an industrial site to still be “in good standing”, Benga suggest a record of appropriate water use and installed diversion capacity equal to the licenced allocation rates and volume followed directly by the initiation of decommissioning and a water licence transfer documented before the disposition of the land where the reclaimed facility is located. This transfer application meets that standard.

If a term is required, Benga requests a longer-term licence to align with ultimate receipt of a reclamation certificate which will take more than 25 years. Benga requests the new licence have a start date of January 1, 2018.

Benga requests that the Director transfer the full licenced volume to the project point of diversion which is the Project fence-line and not apply a 10% holdback in the transfer process. The project’s fence-line point of diversion will be the raw water pond located in SW 24-008-04-W5M. There are no licenced allocations on either tributary that would be impacted and Benga’s water management plan considers the required instream flows for the aquatic environment and downstream users ([Consultant Report #6 Addendum: Appendix A3 \(2017\)](#)).

3.3.1 Background

The Devon Gas Plant, which holds the licence to be transferred, operated from 1961 to late 2012. The decision to close was announced in April 2012, the plant closed operations in October 2012, and began the process of applying to Alberta regulators for decommissioning approvals. The decommissioning process began in March 2014 with the building components removal complete by 2016, and ongoing site remediation expected to continue beyond 2020. The decommissioning process required access to water so the transfer of the water licence was not

practical until 2016. In May 2016, Devon entered into an agreement to transfer the Licence to Benga, and in August 2016, Benga first submitted an application to the Alberta Energy Regulator to transfer the licence.

3.3.2 Impacts of Transfer

There will be only positive impacts to all licencees and the aquatic environment from the original diversion point on the Crowsnest River to the confluence of Gold Creek and the Crowsnest River due to the Devon licence water volume remaining in the river through that additional length of river. [Table 3.3-1](#) provides a summary of the predicted impacts of the Devon transfer.

Downstream of the confluence of Gold Creek and the Crowsnest River there will be no change to the flow of the river due to the transfer as the allocation is withdrawn above the confluence of either/and Blairmore Creek and Gold Creek. Therefore, there will be no change to water availability or impact to any licencee, water user or the aquatic environment downstream on the Crowsnest River due to the new diversion location at the raw water pond. The timing of the withdrawal will be similar to the original licence, the original and new uses are both industrial and active all year.

The flow of Blairmore and Gold creeks will be reduced as a result of the transfer by the transferred allocation of 123,350 m³ (100 ac. ft.). There are no other licenced water users or registrants on Blairmore or Gold creeks below the new point of diversion. There are two household users on Gold Creek who may use up to a total of 1 ac. ft. each with a priority senior to the transferred licence. Benga is not aware of any household water users drawing water from the flowing waters of Blairmore Creek.

The method and timing of the water removal from Blairmore and Gold creeks will not reduce the flow of either stream below the IFN values for those streams ([Consultant Report #6 Addendum: Appendix A3 \(2017\)](#)). The nature of water removal will be during rainfall and snowmelt events in the upper basin when any other water need is minimal. The diversions will be stored in onsite reservoirs. The Devon licence did not have storage to mitigate downstream impacts.

Table 3.3-1 Devon Water Licence Transfer to Grassy Mountain (SW-024-008-04-W5M) – Downstream Impacts

Watercourses	Licencees and Users	Impacts to Downstream Users	Impacts to Environment
Crowsnest River	No licenced users on the Crowsnest River between the former Devon Licence location and the confluence of Gold Creek with the Crowsnest River	<ul style="list-style-type: none"> 100 ac. ft. will remain in the river all the way to Blairmore Creek (11 km), potential impacts negated as more water will remain in the river for longer there are no licenced users between the Devon licence location and Gold Creek, there are no impacts licenced users downstream of Gold Creek will not have any change to their water supply risk 	<p>100 ac. ft. will remain in the river all the way to BC (11 km), potential impacts negated as more water will remain in the river for longer.</p> <p>The total allocation of all licences in the Crowsnest River basin does not exceed 55% of the flow of the Crowsnest River (Table 3.3-2). The WCO is met in the area downstream of the original diversion point and throughout the river downstream to the Crowsnest River entry into the Oldman Dam Reservoir</p>
Blairmore Creek	No licenced water users on Blairmore Creek	<ul style="list-style-type: none"> the mean annual flow in Blairmore Creek is over 7 million m³/yr., the impact to this user due to the Devon transfer will be negligible at <1%. Blairmore Creek currently comprises 63% of the catchment in the Fence-line WA area. 	Benga has completed an instream flow needs (IFN) study, which has been submitted as part of the regulatory submission (Consultant Report #6 Addendum: Appendix A3 (2017) which shows that all IFN will be met.
Gold Creek	No licenced water users on Gold Creek	<ul style="list-style-type: none"> the mean annual flow in Gold Creek is over 4.1 million m³/yr. a previous licence for 250,000 m³/yr. was cancelled so no licences now exist Gold Creek comprises 37% of the catchment in the Fence-line WA area 	Benga has completed an instream flow needs (IFN) study, which has been submitted as part of the regulatory submission (Consultant Report #6 Addendum: Appendix A3 (2017) which shows that all IFN will be met.
	Riparian User – SW-31-008-03-W5M (1 ac. ft.)	<ul style="list-style-type: none"> any household users are senior to the transfer with a 1961 priority. The predicted flow in Gold Creek as a result of the Devon transfer will be reduced by approximately 1% which would cause negligible impacts to downstream users. 	Benga has completed an instream flow needs (IFN) study, which has been submitted as part of the regulatory submission (Consultant Report #6 Addendum: Appendix A3 (2017) which shows that all IFN will be met.
	Riparian User – SE-24-008-04-W5M (1 ac. ft.)	<ul style="list-style-type: none"> any household users are senior to the transfer with a 1961 priority. The predicted flow in Gold Creek as a result of the Devon transfer will be reduced by approximately 1% which would cause negligible impacts to downstream users. 	Benga has completed an instream flow needs (IFN) study, which has been submitted as part of the regulatory submission (Consultant Report #6 Addendum: Appendix A3 (2017) which shows that all IFN will be met.

The new water diversion point for the Devon Licence will be the RWP located at SW-024-008-04-W5M near the southern end of the fence-line *Water Act* approval for the Grassy Mountain Project.

3.3.3 Good Standing

This application for transfer meets the certification for Licence in Good Standing described in Appendix F of the Administrative Guideline for Transfer of Water Allocations dated November 2014. Additional information has been provided in [Attachment B](#).

Benga's understanding is that the primary reason for the test of "Good Standing" in the *Water Act* is to prevent speculation by owners of undeveloped or abandoned projects who may hold on to licences for future transfer. The test ensures certainty for downstream water users that long abandoned projects will not unexpectedly come into new use only because of the transfer provisions in the *Water Act*.

In this application for transfer, it is reasonable that the owner of the licence, Devon, must complete their use of the licence before the transfer could take place, that is, the long decommissioning process necessary for such a large and complex structure as a gas processing plant. The transfer agreement was completed by Devon and Benga in 2016 at the appropriate time as the primary decommissioning was being completed and the licenced allocation became available for transfer. That same year the transfer application was first submitted to the AER by Benga.

It must also be acknowledged that the transfer application and development of a full application package for a complex industrial project like the Grassy Mountain Mine also must be expected to take some time to complete. Unlike a small project such as a private irrigation project, which can be dismantled in a matter of days during the non-irrigation season and set up at a new location in as much time, the time frame for a transfer between large industrial projects must accommodate realistic time frames.

The key objective in this transfer is the ending of water use, decommissioning of infrastructure and application for the transfer to a new location are as reasonably continuous as possible.

The plans (10400-5) attached to the Licence show the constructed diversion capacity to be a pump capable of diverting 220 IGPM. The gas plant operated continuously each year, and at a capacity of 220 IGPM was capable of diverting over four and a half times the annual allocation of 100 ac. ft. All licencees downstream with a priority junior to 1961 should have been prepared at any time for the gas plant to fully utilize its full annual allocation right up to the 2016 final

decommissioning and transfer to Benga. Therefore, the full volume of 100 ac. ft. was historically possible to divert, and can be transferred without any negative effect on downstream licencees.

The principle of “good standing” as applied to the capacity of the diversion works must reflect the constructed capacity to divert 100 ac. ft. per year. If only maximum historical actual water volume use is applied to the ability to transfer, all licencees would be incented to never conserve water, but operate to the maximum to preserve their ability to transfer in the future. The licence was fully capable of diverting the full allocation.

At the new diversion point, the transferred licence will operate in a similar fashion to the Devon operations, that is, continuous diversion in all seasons, however in many years a further mitigation of the transfer is the full allocation may not be diverted from the Crowsnest River watershed by Benga in every year as sufficient water may be available in storage.

No new licences have been issued downstream since the gas plant began decommissioning; therefore, there are no new licencees who may have begun new operations assuming the decommissioned Devon gas plant and its licence would not have an impact on their water use.

Water use records for the later years of the gas plant operations are available on the Alberta Environment water use web site.

3.3.4 Holdback of 10%

The decision to withhold 10% of the transferred Licence is described in the document titled “Guide to Compelling Reasons to not Take the 10% Holdback for Water Transfers Within the South Saskatchewan River Basin”(AEP, March 3, 2015).

This transfer from the Devon Gas Plant to the Grassy Mountain Mine meets the examples 1 and 2, to not take the holdback.

The transfer will ensure an additional 100 ac. ft. per year travels 11 km farther in the Crowsnest River than it does under the current licence location, thus providing additional benefits to the aquatic environment through a 100% of licence contribution up to the new diversion site. Below the new diversion site the river flow will be unchanged however the Water Conservation Objective is already met.

The Water Conservation Objective for the Crowsnest River is 45% of the natural flow or 10% more than the Instream Objective. The total allocation of all licences in the Crowsnest River basin does not exceed 55% of the flow of the Crowsnest River ([Table 3.3-2](#)). Therefore, the WCO

is met in the area downstream of the original diversion point and throughout the river downstream to the Crowsnest River entry into the Oldman Dam Reservoir. Thus, taking the 10% holdback will not provide public benefit to achieve the WCO.

Point of Measurement (shown on Figure 1-1)	Drainage Basin Area (km²)	Avg. Annual Flows in Crowsnest River (m³)	% of Licenced Volume to Volume in the Crowsnest River
Total Flow to 1	88.24	28,501,520	29.3%
Total Flow to 2	283.73	91,644,790	9.1%
Total Flow to 3	423.45	136,774,350	6.1%
Total allocation in Crowsnest River watershed - 8,359,926 m ³ (sourced from approval viewer in June 2016)			

The guide also refers to the holdback considerations for the WCO to be met at all points downstream in Alberta, not just in the reach of the river where the point of diversion is located. The Crowsnest River enters the Oldman Dam Reservoir where the reservoir operation plan has been responsible for meeting the WCO downstream since it was first operated in 1992. Therefore, the condition that the WCO must be met at all points in Alberta downstream is satisfied, and the public interest is satisfied without taking a 10% holdback on the Devon to Grassy transfer.

3.3.5 Term of the Transferred Licence

The *Water Act* regulations state that the term of an Industrial licence will be 10 years unless the applicant requests a shorter or longer term. If a term is required, Benga requests a longer-term licence to align with ultimate receipt of a reclamation certificate which will take more than 25 years. The project will remove material from an existing disturbed site on Grassy Mountain. Once begun it is important for all Albertans that the site be re-contoured and reclaimed to remove the current abandoned site liability to government. The certainty of having the water allocation licence for the full period of time it will take to complete the project and reclaim the site is extremely important.

3.4 Municipality of Crowsnest Pass – Temporary Transfer of York Creek Licence #00045622-00-00

Benga and the Municipality of Crowsnest Pass request the temporary transfer of Licence 0004562-00-00(AEP file no. 517) to Benga for 250,400 m³ (203 ac. ft.). Additional information supporting this transfer is provided in [Attachment C](#). This is a partial transfer as the Licence currently allows for 308, 280 m³ (250 ac. ft.).

The Municipality of Crowsnest Pass has been informed that the York Creek licence is “in good standing” from AEP.

If a licence term is required, Benga requests a longer-term licence to align with ultimate receipt of a reclamation certificate which will take more than 25 years. Benga requests the new licence have a start date of January 1, 2018.

Benga requests that the Director transfer a portion of the total licenced volume (250,400 m³ - 203 acre feet) to the project point of diversion which is the Project fence-line and not apply a 10% holdback in the transfer process. The project’s fence-line point of diversion is between two tributaries of the Crowsnest River downstream from the current point of diversion. There are no licenced allocations on either tributary that would be impacted and Benga’s water management plan considers and exceeds the required instream flows for the aquatic environment and downstream users ([Consultant Report #6 Addendum: Appendix A3 \(2017\)](#)) and the WCO in the Crowsnest River is already met.

3.4.1 Background

The Town of Blairmore operated the reservoir and pipeline on York Creek to provide the community’s water supply needs. In the 1980s, the Municipality switched from a surface water supply to ground water wells as the source of municipal water that only required secondary water treatment. The York Creek licence stopped being used although the infrastructure remained.

The Municipality has planned to re-purpose the York Creek water licence for future delivery of raw water to replace the treated municipal water it currently delivers to the ski hill snow making and the golf course irrigation uses, which will not require treatment. The York Creek licence provides a future lower cost water supply for both the ski hill and the golf course. The current water needs for both are being handled by the municipal water wells and will likely do so for the considerable future, for at least the term of the temporary transfer. When the temporary transfer reverts back to the Municipality, the water could then be used by the ski hill and the golf course to offset new development growth in the municipality.

3.4.2 Impacts of Transfer

There will be only positive impacts to all licencees and the aquatic environment from the transfer from the original diversion point on York Creek to the confluences of Blairmore and Golds creeks with the Crowsnest River. The Municipal licence water volume will remain in the creek and river for an additional approx. 1.9 km from point 4 to point 2 and 7.4 km to point 3 – [Figure 1-1](#). More water will remain in York Creek and the Crowsnest River to the confluence with Gold Creek. [Table 3.4-1](#) provides a summary of the predicted impacts of the York Creek municipal transfer.

There will be no change to water availability or impact to any licencee, water user or the aquatic environment downstream on the Crowsnest River due to the temporary transfer.

The flow of Blairmore and Gold Creeks will be reduced as a result of the transfer by the transferred allocation of 203 ac. ft. from the raw water pond located in SW-024-008-04-W5M. There are no other licenced water users or registrants on Blairmore or Gold Creeks below the new point of diversion. There are two household users on Gold Creek who may use up to a total of 1 ac. ft. each with a priority senior to the transferred licence. There are two household users on York Creek that will not be affected by the temporary transfer.

The method and timing of the water removal from Blairmore and Gold creeks will not reduce the flow of either stream below the IFN values for those streams ([Consultant Report #6 Addendum: Appendix A3 \(2017\)](#)). The nature of water removal will be during rainfall and snowmelt events in the upper basin when any other water need is minimal.

Table 3.4-1 York Creek Water Licence Transfer to Grassy Mountain (SW-024-008-04-W5M) – Downstream Impacts

Watercourses	Licencees and Users	Impacts to Downstream Users	Impacts to Environment
Crowsnest River	No licenced users on the Crowsnest River between the York Creek Licence location and the confluence of Blairmore and Gold creeks with the Crowsnest River	<ul style="list-style-type: none"> • 203 ac. ft. will remain in the creek and river all the way to Blairmore Creek (1.9 km) and a portion will remain in the river all the way to Gold Creek (7.4 km), potential impacts negated as more water will remain in the streams for longer • there are no licenced users between the York Creek licence location and Gold Creek, there are no impacts • licenced users downstream of York Creek will not have any change to their water supply risk 	<ul style="list-style-type: none"> • 203 ac. ft. will remain in the York Creek and Crowsnest River, potential impacts negated as more water will remain in the river for longer. • The total allocation of all licences in the Crowsnest River basin does not exceed 55% of the flow of the Crowsnest River (Table 3.3-2). The WCO is met in the area downstream of the original diversion point and throughout the river downstream to the Crowsnest River entry into the Oldman Dam Reservoir
Blairmore Creek	No licenced water users on Blairmore Creek	<ul style="list-style-type: none"> • the mean annual flow in Blairmore Creek is over 7 million m³/yr., the impact to this user due to the York Creek transfer will be negligible at <1%. • Blairmore Creek currently comprises 63% of the catchment in the Fence-line WA area. 	<ul style="list-style-type: none"> • Benga has completed an instream flow needs (IFN) study, which has been submitted as part of the regulatory submission (Consultant Report #6 Addendum: Appendix A3 (2017) which shows that all IFN will be met.
Gold Creek	No licenced water users on Gold Creek	<ul style="list-style-type: none"> • the mean annual flow in Gold Creek is over 4.1 million m³/yr. • a previous licence for 250,000 m³/yr. was cancelled so no licences now exist • Gold Creek comprises 37% of the catchment in the Fence-line WA area 	<ul style="list-style-type: none"> • Benga has completed an instream flow needs (IFN) study, which has been submitted as part of the regulatory submission (Consultant Report #6 Addendum: Appendix A3 (2017) which shows that all IFN will be met.
	Riparian User – SW-31-008-03-W5M (1 ac. ft.)	<ul style="list-style-type: none"> • any household users are senior to the transfer with a 1961 priority. The predicted flow in Gold Creek as a result of the Devon transfer will be reduced by approximately 1% which would cause negligible impacts to downstream users. 	<ul style="list-style-type: none"> • Benga has completed an instream flow needs (IFN) study, which has been submitted as part of the regulatory submission (Consultant Report #6 Addendum: Appendix A3 (2017) which shows that all IFN will be met.
	Riparian User – SE-24-008-04-W5M (1 ac. ft.)	<ul style="list-style-type: none"> • any household users are senior to the transfer with a 1961 priority. The predicted flow in Gold Creek as a result of the Devon transfer will be reduced by 	<ul style="list-style-type: none"> • Benga has completed an instream flow needs (IFN) study, which has been submitted as part of the regulatory submission (Consultant Report #6

Table 3.4-1 York Creek Water Licence Transfer to Grassy Mountain (SW-024-008-04-W5M) – Downstream Impacts

Watercourses	Licencees and Users	Impacts to Downstream Users	Impacts to Environment
		approximately 1% which would cause negligible impacts to downstream users.	Addendum: Appendix A3 (2017) which shows that all IFN will be met.
York Creek	No licenced water users on York Creek	<ul style="list-style-type: none"> licenced volume of 308,380 m³/yr. will remain in the creek and will not have any impacts to downstream users. 	<ul style="list-style-type: none"> Licenced volume of 308,380 m³/yr. will remain in the creek and will not have any impacts to the downstream environment.
	Riparian User – NW-34-007-04-W5M (1 ac. ft.)	<ul style="list-style-type: none"> any household users are senior to the transfer with a 1910 priority. The predicted flow in York Creek due to the temporary transfer will not be reduced and will not have an impact to downstream users. 	<ul style="list-style-type: none"> Licenced volume of 308,380 m³/yr. will remain in the creek and will not have any impacts to the downstream environment.
	Riparian User – NW-34-007-04-W5M (1 ac. ft.)	<ul style="list-style-type: none"> any household users are senior to the transfer with a 1910 priority. The predicted flow in York Creek due to the temporary transfer will not be reduced and will not have an impact to downstream users. 	<ul style="list-style-type: none"> Licenced volume of 308,380 m³/yr. will remain in the creek and will not have any impacts to the downstream environment.

The new water diversion point for the York Creek Licence will be the raw water pond (RWP) located at SW-024-008-04-W5M near the southern end of the fence-line *Water Act* approval for the Grassy Mountain Project.

3.4.3 Good Standing

The assessment of good standing for the York Creek Licence has been approved by AEP. Additional information has been provided in [Attachment C](#).

3.4.4 Holdback of 10%

The decision to withhold 10% of the transferred Licence is described in the document titled “Guide to Compelling Reasons to not Take the 10% Holdback for Water Transfers Within the South Saskatchewan River Basin”(AEP, March 3, 2015).

This transfer of the York Creek Licence to the Grassy Mountain Mine meets the examples 1 and 2, to not take the holdback.

The transfer will ensure an additional 203 ac. ft. per year travels an additional 1.9 km downstream in York Creek into the Crowsnest River to Blairmore Creek and 75 ac. ft. will travel further downstream to Gold Creek. This provides additional benefits to the aquatic environment through a 100% of licence contribution up to the new diversion site. Below the new diversion site, the river flow will be unchanged however the Water Conservation Objective is already met. And approximately 89% of the York Creek licenced volumes will result in return flows to the system.

The Water Conservation Objective for the Crowsnest River is 45% of the natural flow or 10% more than the Instream Objective. The total allocation of all licences in the Crowsnest River basin does not exceed 55% of the flow of the Crowsnest River. Therefore, the WCO is met in the area downstream of the original diversion point and throughout the river downstream to the Crowsnest River entry into the Oldman Dam Reservoir. Taking the 10% holdback will not provide public benefit to achieve the WCO.

The guide also refers to the holdback considerations for the WCO to be met at all points downstream in Alberta, not just in the reach of the river where the point of diversion is located. The Crowsnest River enters the Oldman Dam Reservoir where the reservoir operation plan has been responsible for meeting the WCO downstream since it was first operated in 1992. Therefore, the condition that the WCO must be met at all points in Alberta downstream is satisfied, and the public interest is satisfied without taking a 10% holdback on the York Creek to Grassy transfer.

3.4.5 Term of the Transferred Licence

The transfer of the York Creek licence from the Municipality of Crowsnest Pass will be temporary, and will revert back to the municipality in approximately 25 years (upon completion of mining and reclamation). This period aligns with the expected need for the water at the Grassy Mountain Mine site.

4.0 SUMMARY

The Integrated Application for the Grassy Mountain Coal Project contains information that describes the Project and the need for water and licencing requirements under the Alberta *Water Act*. The following are the locations where this information can be found in the Application:

- [Section A](#) – Project Introduction ([Sections A.1](#) to [A.6](#));
- [Section C](#) – Project Description;
- [Appendix 1D](#) – Water Act – Fence-line Approval;
- [Appendix 1E](#) – Water Act – Water Licence Application;
- [Appendix 10A](#) - SRK – Grassy Mountain Geochemistry Characterization Report. August 2016;
- [Appendix 10B](#) - SRK - Grassy Mountain Water and Load Balance Report. August 2016;
- [Appendix 10C](#) - SRK - Grassy Mountain Water Quality Management Report. August 2016;
- [Consultant Report #3](#) – Hydrogeology;
- [Consultant Report #4](#) – Hydrology;
- [Consultant Report #5](#) – Surface Water Quality;
- [Consultant Report #6](#) – Aquatic Resources; and
- [Consultant Report #10](#) – Land and Resource Use.

The point of diversion will be for all lands described in the Project’s Fence-line water management application provided in [Appendix 1D](#). Benga is applying for diversion licences and a transfer under the Alberta *Water Act* (WA), to divert up to 506,028 m³ (plus 10% contingency) annually of new, non-recycled, surface water runoff for industrial use at its Grassy Mountain Coal Project (the Project). This diversion licence application applies to lands described in the Project’s Fence-line water management application for Approval provided in [Appendix 1D](#). The annual total volume of the water diversions will be sourced from surface runoff and the point of diversion will be all points where water is diverted from surface water runoff within the boundaries of the Fence-line approval ([Figure 1-1](#)). The volumes of surface runoff and rates of diversion are provided in [Table 4.0-1](#). All water is diverted to the raw water pond which has a storage capacity of 1.2 million m³, which collects and stores water throughout the year, for use when needed.

Table 4.0-1 Annual Maximum Withdrawal at the Fence-line – 506,028 m³/yr, 1,386.4 m³/d, 57.8 m³/hr

Month	Monthly Runoff Distribution	Total Estimated Withdrawal Rate ¹		
		m ³ /month	m ³ /day	m ³ /hr
January	2%	11,324	365	15
February	2%	11,324	404	17
March	3%	16,194	522	22
April	7%	35,675	1,189	50
May	25%	123,340	3,979	166
June	27%	133,081	4,436	185
July	13%	60,027	1,936	81
August	6%	30,805	994	41
September	5%	25,935	864	36
October	4%	21,064	679	28
November	4%	21,064	702	29
December	3%	16,194	522	22

¹ 10% contingency is not included.

Table 4.0-2 provides a description of the details for the transfer, temporary transfer and application under the *Water Act*. The following is a breakdown of the total volume of water required for the project that is available by licence:

- Devon transfer – 22.1%;
- Industrial Reserve – 33.1%; and
- Municipality of Crowsnest Pass temporary transfer – 44.8%.

Table 4.0-2 Water Allocation Licence Details			
Licence Details	Devon Licence Transfer	York Creek Licence Temporary Transfer	Industrial Reserve (as per the Oldman River Basin Water Allocation Order (the "Order"), Alberta Regulation 319/2003 and amended to 109/2010
Licence No.	00039493-00-00	0004562-00-00	application
File No.	10400	517	new
Priority No.	1961-12-14-02	1910-09-19-01	2003-date of order filed
Effective Date	5-Aug-82	At issuance	At issuance
Expiry Date	No expiry	No expiry on licence, request 25 years for temporary transfer	25 years
Source of Water	Crowsnest River	York Creek	Gold Creek and Blairmore creek
First Point of Diversion	NE-02-008-05-W5M	NW-34-007-04-W5M	Project fence-line
New Point of Diversion	SW-24-008-04-W5M – raw water pond	Project fence-line	Project fence-line
Point of Use	Within the mine fence-line	Within the mine fence-line	Within the mine fence-line
Latitude	49.62472222	49° 36.286' N	
Longitude	-114.5752778	114° 28.154' W	
Current Licensee	Devon Canada Corporation	Municipality of Crowsnest Pass	unallocated
Gross Diversion Volume (ac. ft.) / (m ³)	(100) / (123,350)	(203) / (250,400)	(150) / (185,022)
% of Total Gross Diversion	22.1	44.8	33.1
Estimated Consumptive Use – water in clean coal (ac. ft.) / (m ³)	(25.0) / (30,838)	(25.0) / (30,838)	(73.5) / (90,662)

Table 4.0-2 Water Allocation Licence Details			
Licence Details	Devon Licence Transfer	York Creek Licence Temporary Transfer	Industrial Reserve (as per the Oldman River Basin Water Allocation Order (the "Order"), Alberta Regulation 319/2003 and amended to 109/2010
Estimated Losses – evaporation RWP (ac. ft.) / (m ³)	(10.3) / (12,705)	(2) / (2,467)	(10.24) / (12,631)
Estimated Return Flow (ac. ft.) / (m ³)	(64.7) / (79,807)	(176.0) / (217,096)	(66.3) / (81,729)
Rate of Diversion (ft ³ /sec) / (m ³ /sec)	(0.59) / (0.017)	n/a	See Table 4.0-1
Maximum Rate of Diversion at Fence-line	See Table 4.0-1 x 22.1%	See Table 4.0-1 x 44.8%	See Table 4.0-1 x 33.1%
Maximum Rate of Re-diversion 60 m ³ /hr – from RWP (m ³ /hr)	13	27	20
Type	Commercial		
Purpose	Industrial (processing)	Industrial	Industrial

A summary of the impacts to downstream users and the environment for the two applications and the transfer are provided in [Table 4.0-3](#).

Table 4.0-3 Grassy Mountain Project – Water Licence Allocation and Transfer Information

Water Licence	Apportionment per Watershed		Impacts to Downstream Users			Impacts to Environment		
	Blairmore Creek (63%)	Gold Creek (37%)	Crowsnest River (CR)	Blairmore Creek (BC)	Gold Creek (GC)	Crowsnest River (CR)	Blairmore Creek (BC)	Gold Creek (GC)
Devon Transfer (Licence #0039493-00-01, NE-02-008-05-W5M) to be moved to the RWP in SW-024-008-04-W5M.								
100 acre feet	63 ac. ft.	37 ac. ft.	<ul style="list-style-type: none"> no licenced users on the CR between the former Devon Licence location and the confluence of GC with the CR 100 ac. ft. will remain in the river all the way to BC (11 km), potential impacts negated as more water will remain in the river for longer licenced users downstream of GC 	<ul style="list-style-type: none"> The mean annual flow in BC is over 7 million m³/yr., the impact to this user due to the Devon transfer will be negligible at <1% flow reduction. BC comprises 63% of the catchment in the Fence-line WA area 	<ul style="list-style-type: none"> No licenced users on the GC, but there are two riparian users who use up to 1 ac. ft./yr. each. The mean annual flow in GC is over 4.1 million m³/yr. A previous licence for 250,000 m³/yr. was cancelled so no licences now exist. GC comprises 37% of the catchment in 	100 ac. ft. will remain in the river all the way to BC (11 km), potential impacts negated as more water will remain in the river for longer. The total allocation of all licences in the Crowsnest River basin does not exceed 55% of the flow of the Crowsnest River (Table 3.3-2). The WCO is met in the area downstream of the original diversion point and throughout the river	Benga has completed an instream flow needs (IFN) study, which has been submitted as part of the regulatory submission (Consultant Report #6 Addendum: Appendix A3 (2017)) which shows that all IFN on BC will be met.	Benga has completed an instream flow needs (IFN) study, which has been submitted as part of the regulatory submission (Consultant Report #6 Addendum: Appendix A3 (2017)) which shows that all IFN on GC will be met.
123,350 m ³	77,710.5 m ³	45,639.5 m ³						

Table 4.0-3 Grassy Mountain Project – Water Licence Allocation and Transfer Information

Water Licence	Apportionment per Watershed		Impacts to Downstream Users			Impacts to Environment		
	Blairmore Creek (63%)	Gold Creek (37%)	Crowsnest River (CR)	Blairmore Creek (BC)	Gold Creek (GC)	Crowsnest River (CR)	Blairmore Creek (BC)	Gold Creek (GC)
			will not have any change to their water supply risk		the Fence-line WA area	downstream to the Crowsnest River entry into the Oldman Dam Reservoir		
Crown Industrial Reserve (to be allocated at the RWP in SW-024-008-04-W5M)								
150 acre feet	94.5 ac. ft.	55.5 ac. ft.	<ul style="list-style-type: none"> no licenced users on the CR between the former Devon Licence location and the confluence of GC with the CR this allocation will result in a minor reduction in flows (116k m³) in the CR, between BC and GC which has a mean annual 	<ul style="list-style-type: none"> The mean annual flow in BC is over 7 million m³/yr., the impact to this user due to new licence will be negligible at <1.7% flow reduction. BC comprises 63% of the catchment in the 	<ul style="list-style-type: none"> No licenced users on the GC, but there are two riparian users who use up to 1 ac. ft./yr. each. The mean annual flow in GC is over 4.1 million m³/yr., the impact to this user due to new licence will be 	100 ac. ft. will remain in the river all the way to BC (11 km), potential impacts negated as more water will remain in the river for longer. The total allocation of all licences in the Crowsnest River basin does not exceed 55% of the flow of the Crowsnest River (Table 3.3-2). The WCO is met	Benga has completed an instream flow needs (IFN) study, which has been submitted as part of the regulatory submission (Consultant Report #6 Addendum: Appendix A3 (2017)) which shows that all IFN on BC will be met.	Benga has completed an instream flow needs (IFN) study, which has been submitted as part of the regulatory submission (Consultant Report #6 Addendum: Appendix A3 (2017)) which shows that all IFN on GC will be met.
185,025 m ³	116,565.8 m ³	68,459.2 m ³						

Table 4.0-3 Grassy Mountain Project – Water Licence Allocation and Transfer Information

Water Licence	Apportionment per Watershed		Impacts to Downstream Users			Impacts to Environment		
	Blairmore Creek (63%)	Gold Creek (37%)	Crowsnest River (CR)	Blairmore Creek (BC)	Gold Creek (GC)	Crowsnest River (CR)	Blairmore Creek (BC)	Gold Creek (GC)
			flow of 91,644,790 m ³ (<0.13%) <ul style="list-style-type: none"> licenced users downstream of GC will not have any change to their water supply risk 	Fence-line WA area	negligible at <1.7% flow reduction. <ul style="list-style-type: none"> A previous licence for 250,000 m³/yr. was cancelled so no licences now exist. GC comprises 37% of the catchment in the Fence-line WA area 	in the area downstream of the original diversion point and throughout the river downstream to the Crowsnest River entry into the Oldman Dam Reservoir		
York Creek Licence temporarily transferred from York Creek) to be allocated at the RWP in SW-024-008-04-W5M.								
203 acre feet	127.9 ac. ft.	75.1 ac. ft.	<ul style="list-style-type: none"> No licenced users on the CR between the former York Creek Licence location and the confluence of GC with the CR 	<ul style="list-style-type: none"> The mean annual flow in BC is over 7 million m³/yr., the impact will be minor and will be offset by 	<ul style="list-style-type: none"> No licenced users on the GC, but there are two riparian users who use up to 1 ac. ft./yr. each. 	203 ac. ft. will remain in the river all the way to BC and to GC), potential impacts negated as more water will remain in the river for longer.	Benga has completed an instream flow needs (IFN) study, which has been submitted as part of the regulatory submission	Benga has completed an instream flow needs (IFN) study, which has been submitted as part of the regulatory submission
250,400 m ³	157,752 m ³	75,998 m ³						

Table 4.0-3 Grassy Mountain Project – Water Licence Allocation and Transfer Information

Water Licence	Apportionment per Watershed		Impacts to Downstream Users			Impacts to Environment		
	Blairmore Creek (63%)	Gold Creek (37%)	Crowsnest River (CR)	Blairmore Creek (BC)	Gold Creek (GC)	Crowsnest River (CR)	Blairmore Creek (BC)	Gold Creek (GC)
			<ul style="list-style-type: none"> This allocation will result in an increase in flows in the CR, between YC, BC and GC licenced users downstream of YC will not have any change to their water supply risk 	<ul style="list-style-type: none"> increased flows in the CR BC comprises 63% of the catchment in the Fence-line WA area. 	<ul style="list-style-type: none"> The mean annual flow in GC is over 4.1 million m³/yr. the impact to this user due to new licence will be negligible at <1.9% flow reduction, flows will be offset by greater flows in the CR. GC comprises 37% of the catchment in the Fence-line WA area 	<p>The total allocation of all licences in the Crowsnest River basin does not exceed 55% of the flow of the Crowsnest River (Table 3.3-2). The WCO is met in the area downstream of the original diversion point and throughout the river downstream to the Crowsnest River entry into the Oldman Dam Reservoir</p>	<p>(Consultant Report #6 Addendum: Appendix A3 (2017) which shows that all IFN on BC will be met.</p>	<p>(Consultant Report #6 Addendum: Appendix A3 (2017) which shows that all IFN on GC will be met.</p>

Figures

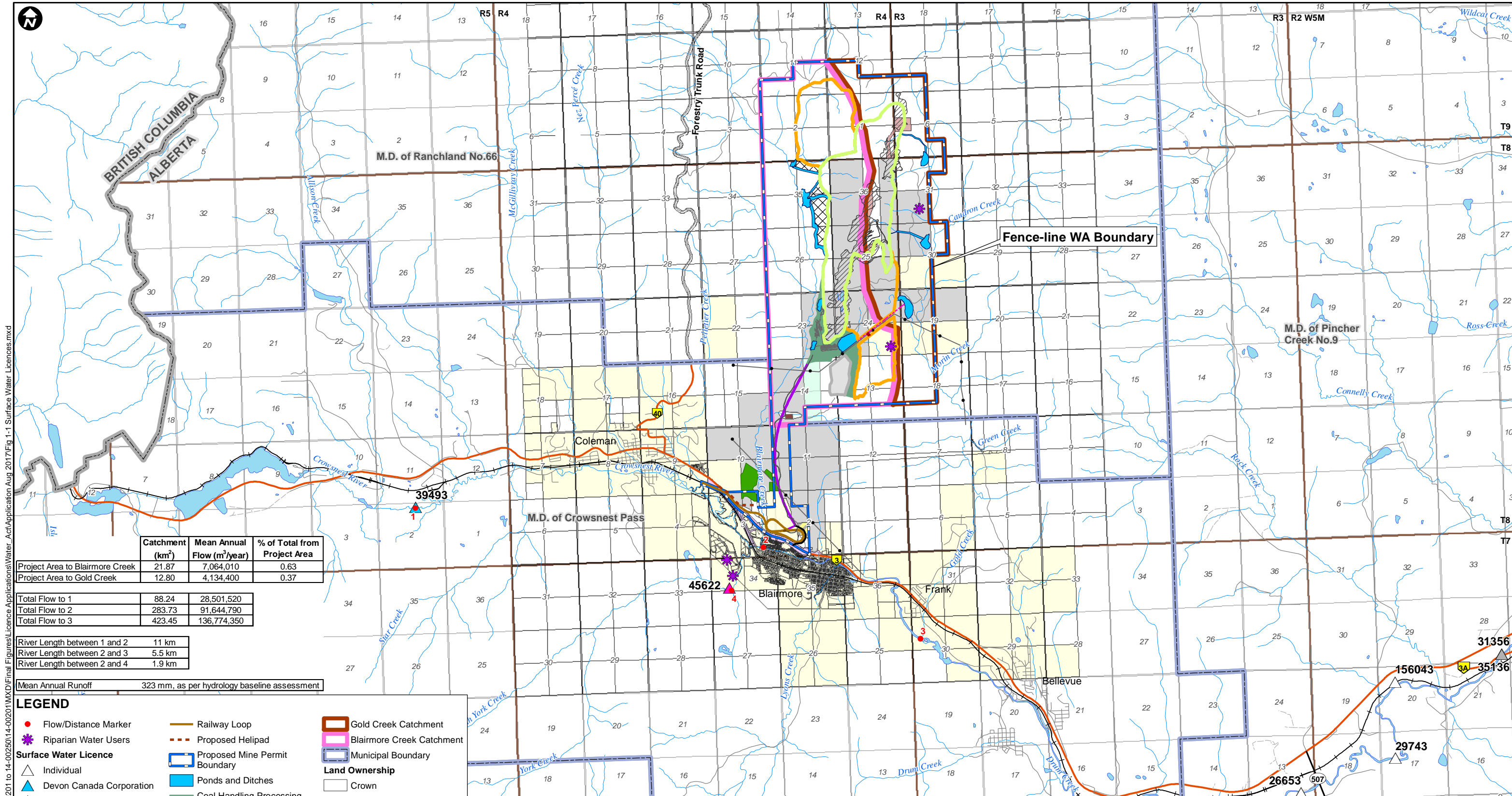
Figure 1-1 Surface Water Licences on Crowsnest River, York, Blairmore and Gold Creeks

Figure 2-1 Water Diversion Flow Diagram and Plant Water Balance

Figures

Figure 1-1 Surface Water Licences on Crowsnest River, York, Blairmore and Gold Creeks

Figure 2-1 Water Diversion Flow Diagram and Plant Water Balance



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	Catchment (km ²)	Mean Annual Flow (m ³ /year)	% of Total from Project Area
Project Area to Blairmore Creek	21.87	7,064,010	0.63
Project Area to Gold Creek	12.80	4,134,400	0.37

Total Flow to 1	88.24	28,501,520
Total Flow to 2	283.73	91,644,790
Total Flow to 3	423.45	136,774,350

River Length between 1 and 2	11 km
River Length between 2 and 3	5.5 km
River Length between 2 and 4	1.9 km

Mean Annual Runoff	323 mm, as per hydrology baseline assessment
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LEGEND

- Flow/Distance Marker
- ✳ Riparian Water Users
- Surface Water Licence**
 - △ Individual
 - ▲ Devon Canada Corporation
 - ▲ Dunn Creek Resources Ltd.
 - ▲ Municipality of Crowsnest Pass
 - Railway
 - Primary Highway
 - Secondary Highway
 - Existing Access
 - Existing Powerline
 - CHPP Facilities
 - Proposed Water Pipeline/Service Road
- Railway Loop
- Proposed Helipad
- Proposed Mine Permit Boundary
- Ponds and Ditches
- Coal Handling Processing Plant and Infrastructure
- Covered Conveyor, Access Road and Powerline ROW
- Proposed Golf Course
- Undisturbed Area
- Legacy Mine Disturbance
- Ultimate Pit Extent
- Ultimate Rock Disposal Area Extent
- Topsoil Storage
- Construction Camp
- Gold Creek Catchment
- Blairmore Creek Catchment
- Municipal Boundary
- Land Ownership**
 - Crown
 - Crown (ROE Held By Devon)
 - Crown (MLL Held By Benga)
 - Freehold - Benga
 - Freehold - Benga 50%, CNP
 - Freehold - Other
 - Registered Roadway

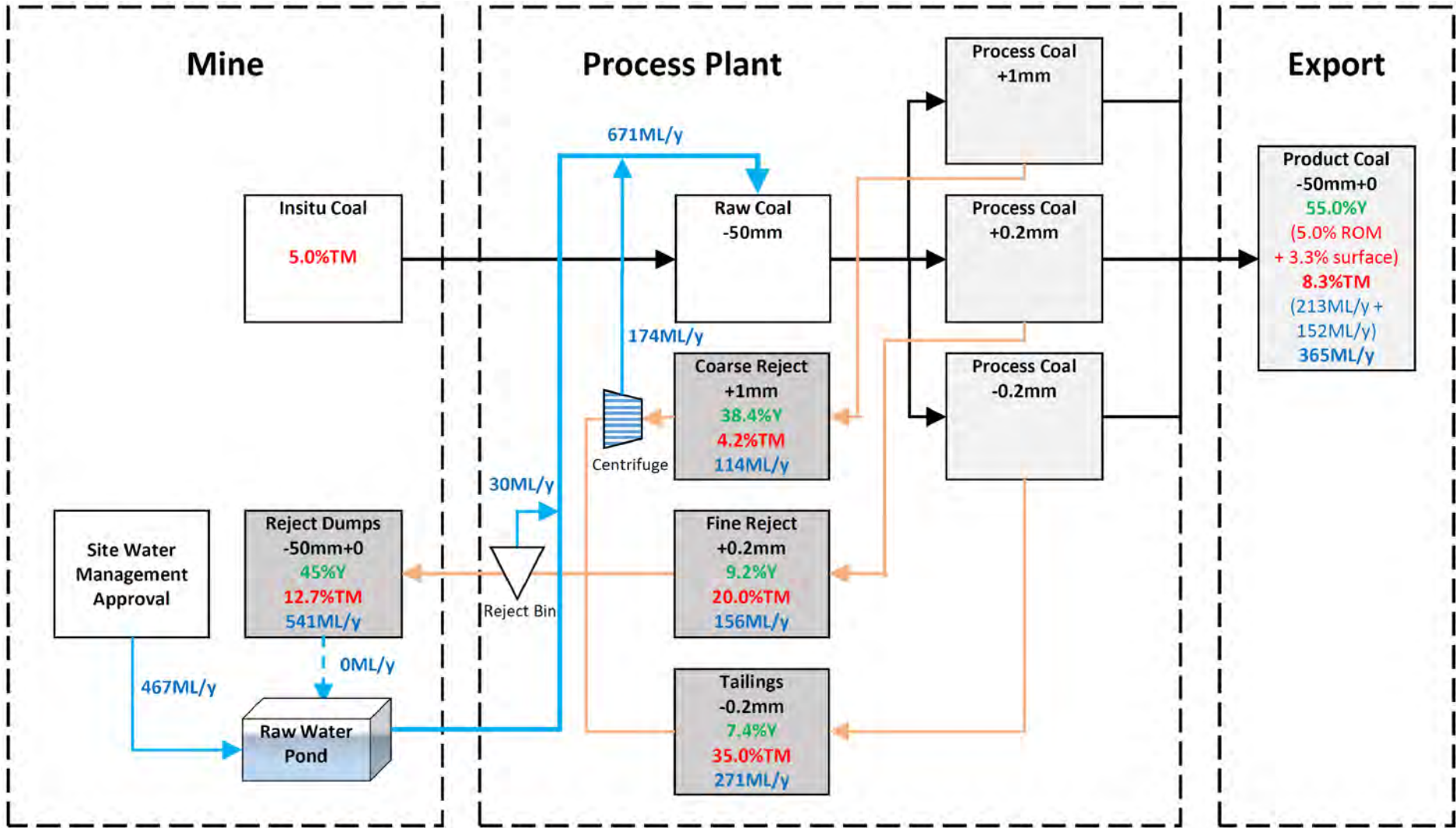
PROJECT
RIVERSDALE RESOURCES

GRASSY MOUNTAIN COAL PROJECT

TITLE
SURFACE WATER LICENCES ON CROWSNEST RIVER AND YORK, BLAIRMORE AND GOLD CREEKS

NOTES
AltaLIS, 2017; MEMS, 2017; NRCAN, 2015; SRK, 2017
Datum/Projection: UTM NAD 83 Zone 11

PROJECT: 14-00201-01
DRAWN BY: SL
CHECKED BY: DM
DATE: AUGUST 14, 2017
FIGURE 1-1



PROJECT



GRASSY MOUNTAIN COAL PROJECT



TITLE

PLANT WATER BALANCE (467ML/y) INCLUDING REJECT SIZING, AND COARSE REJECTS CENTRIFUGE

PROJECT: 14-00201-01

DRAWN BY: SL

CHECKED BY: DM

DATE: MAY 10, 2017

NOTES

RIVERSDALE RESOURCES, 2017

SCALE: N/A

FIGURE

2-1

Attachment A

Request for:

Application under the Oldman River Basin Water Allocation Order (Alberta Regulation 319/2003 and amended to 109/2010)

*New water allocation for the 185,025 m³
(150 ac. ft.) reserved for industrial purposes*

Contents

Application Under the Water Act for Approvals and/or Licences – 4 pages

Figure 1-1 – Surface Water Licences on Crowsnest River, York, Blairmore and Gold Creeks

Application under the *Water Act* for Approvals and/or Licences



This application form is for activities regulated under the <i>Water Act</i> .			
Check one or more of the following to indicate type of application			
Licence for Diversion of Water	<input checked="" type="checkbox"/>	Renewal of Diversion Licence	<input type="checkbox"/>
Licence Amendment	<input type="checkbox"/>	Approval Amendment	<input type="checkbox"/>
Approval for Constructing Works		<input type="checkbox"/>	
Preliminary Certificate Amendment		<input type="checkbox"/>	
Water Act File No. (if applicable)			
Applicant			
Name or Business Name:	Benga Mining Limited		Business Contact: Cal Clark
Address: (include city, province and postal code)	PO Box 660 12331 20th Ave Blairmore, Alberta T0K 0E0		Cell No.: 403 563-6455
			Phone No.: 403 753-5160
			Fax No.:
			E-mail: cal.clark@rivresources.com
Are you the owner of the land or undertaking?			<input type="radio"/> Yes <input checked="" type="radio"/> No
If no, please attach a copy of the written consent of the owner of the land or the undertaking. If working in "public land" administered under the Public Lands Act, include the disposition number obtained to undertake this activity."			Consent attached? <input type="radio"/> Yes <input checked="" type="radio"/> No Disposition No. <input type="text"/>
Authorized Representative*			<input type="checkbox"/> Same as Applicant
Name or Business Name:	Millennium EMS Solutions Ltd.		Business Contact: Dane McCoy
Address: (include city, province and postal code)	6111 – 91 Street Edmonton, AB T6E 6V6		Cell No.: (780) 717-9766
			Phone No.: (780) 391-2514
			Fax No.: (780) 496-9049
			Email: dmccoy@mems.ca
* Name of representative submitting application on behalf of applicant			
Project Description			
Tentative Construction Start Date:	mid-2018	Duration of Construction:	23 years
Tentative Water Diversion Start Date:	mid-2018	Duration of Water Diversion/Use:	27 years
Provide a detailed description, including location of works and activities, relating to the project and attach plans: A detailed description of the works and activities are provided in the Application and EIA (Section C) and in the Fence-line Water Act Application (Appendix 1D).			

Application under the *Water Act* for Approvals and/or Licences

Water Sources (Location of Works and Activities): Surface Water Groundwater

Surface Water – Point of Diversion or Activity
 (if constructing works only, complete the first three columns)

+	Water Body e.g., lake, stream, or name of source, if known	Water Diversion/Activity Location					Is Construction Required?	Annual Volume of Water Required (cubic metres)	Maximum Pumping Rate (show units)	Purpose (for diversion only)
		1/4	Sec	Twp	Rge	M				
X	industrial reserve - raw water pond	SW	24	8	4	5	Yes	185,025	20 m ³ /hr	industrial mining and reclamation
X		SW					No			
X		SW					No			
	Plan/Block/Lot						UTM Coordinates	Zone:	Easting (m)	Northing (m)
	Plan/Block/Lot						UTM Coordinates	Zone:	Easting (m)	Northing (m)
	Plan/Block/Lot						UTM Coordinates	Zone:	Easting (m)	Northing (m)

+ - add additional row
 x - remove current row

Indicate the "Point of Use " if different than the "Water Diversion Location(s)" same location as source(s)

To ensure your application is complete, please refer to the *Guidelines for Licensing Water Diversion Projects*
 (<http://environment.alberta.ca/03222.html>).

Amendment Description

Approval Amendment

Please provide description of amendment required and attach plan if necessary

Licence Amendment

Preliminary Certificate Amendment

Complete applicable information below:

Increase or decrease rate of diversion.

Please specify

Add a rate of diversion of water if none specified on the licence or preliminary certificate.

Please specify

Add terms or conditions to the licence or preliminary certificate.

Please specify

Application under the *Water Act* for Approvals and/or Licences

Please specify			
<input type="checkbox"/> Add terms or conditions to the licence or preliminary certificate.			
Please specify			
<input type="checkbox"/> Add/change the timing of diversion or water specified in the licence or preliminary certificate.			
Please specify			
<input type="checkbox"/> Add/change the point of use			
Please specify			
<input type="checkbox"/> Move the point of diversion of water or add another point of diversion of water. (Licences only)			
Please specify			
<input type="checkbox"/> Notice of disposition of land or undertaking. (Change of ownership)			
Please specify			
<input type="checkbox"/> Other amendments requested.			
Please specify			
Statement of Confirmation:			
The information given on this form is true to the best of my knowledge.			
If you wish to sign the form with an electronic signature you are bound with the same force as though you had a fixed signature on paper.			
	09-May-2017	Cal Clark	Benga Mining Ltd.
Signature	Date of Signing	Printed Name	Company Name

Application under the *Water Act* for Approvals and/or Licences

For projects under ESRD jurisdiction, submit the completed form to the following address:

**Alberta Environment and Sustainable Resource Development
Regulatory Approval Centre**
Main Floor, Oxbridge Place
9820 106 Street NW
Edmonton AB T5K 2J6
Telephone: 780 427-6311
Fax: 780 422-0154

or e-mail the completed and signed form to one of the following e-mail addresses:

- ~ AENV.NorthWaterApprovals@gov.ab.ca
- ~ AENV.CentralWaterApprovals@gov.ab.ca
- ~ AENV.SouthWaterApprovals@gov.ab.ca

For projects under AER jurisdiction, e-mail the completed form to the *EPEA* and *Water Act* Authorizations Centre at EPEA.WA.Applications@aer.ca.

PERSONAL INFORMATION COLLECTION AND USE NOTIFICATION

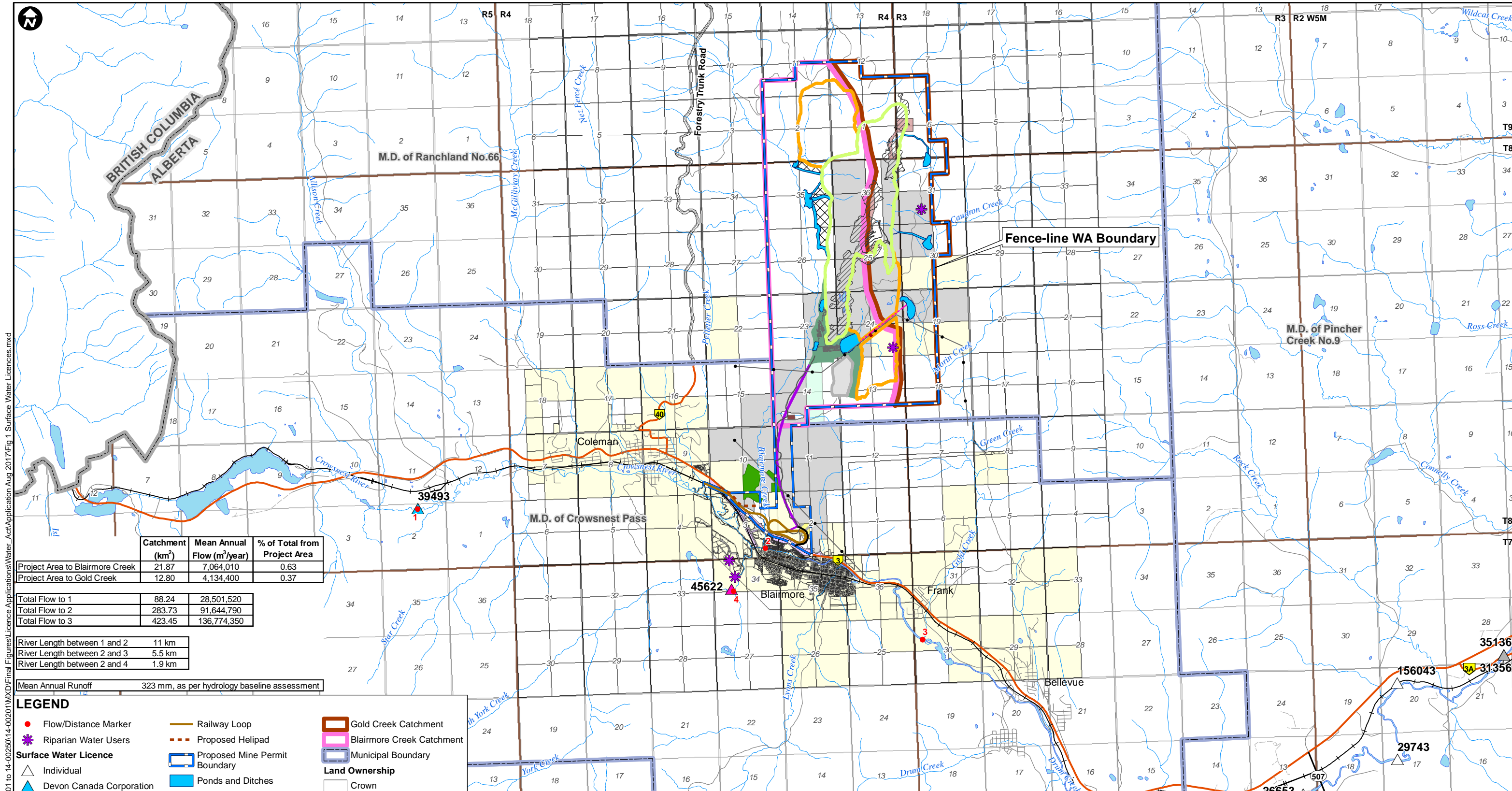
Personal information on this form is collected under the authority of section 33(c) of the Freedom of Information and Protection of Privacy (FOIP) Act and will be used to administer the *Water Act* and its associated regulations. **This form is a public record and is available to anyone.** All information contained on this form (including personal information) is disclosed by Alberta Environment and Water to anyone requesting a copy in accordance with Section 15(1)(a) of the *Water (Ministerial) Regulation*. For further information about the collection and use of this information, please contact Alberta Environment and Water's Regulatory Approvals Centre at RAC.Environment@gov.ab.ca or call (780) 427-6311.

WATER (MINISTERIAL) REGULATION - REQUEST FOR CONFIDENTIALITY

As identified in Section 15(4) of the *Water (Ministerial) Regulation*, if the applicant wishes that a trade secret, process or technical information in the application be kept confidential, the applicant may make a written request to the Director within 30 days after the information is submitted, identifying the information, and requesting that the information be kept confidential and not be disclosed. The written request must identify the specifics of the information to be kept confidential and not to be disclosed. Ultimately, it is the Director who makes the decision regarding the confidentiality of the identified information.

If you are submitting a request to assure confidentiality of certain information such as a trade secret, process or technical information for the Directors consideration, **submit this information in a separate attachment to the application form.**

Protect Fields



Document Path: K:\Active Projects\2014\AP 14-00201\Figures\Licence Applications\Water_Act\Application Aug 2017\Fig 1 Surface Water Licences.mxd

	Catchment (km ²)	Mean Annual Flow (m ³ /year)	% of Total from Project Area
Project Area to Blairmore Creek	21.87	7,064,010	0.63
Project Area to Gold Creek	12.80	4,134,400	0.37

Total Flow to 1	88.24	28,501,520
Total Flow to 2	283.73	91,644,790
Total Flow to 3	423.45	136,774,350

River Length between 1 and 2	11 km
River Length between 2 and 3	5.5 km
River Length between 2 and 4	1.9 km

Mean Annual Runoff	323 mm, as per hydrology baseline assessment
--------------------	--

LEGEND

- Flow/Distance Marker
- ✿ Riparian Water Users
- Surface Water Licence**
- △ Individual
- ▲ Devon Canada Corporation
- ▲ Dunn Creek Resources Ltd.
- ▲ Municipality of Crowsnest Pass
- Railway
- Primary Highway
- Secondary Highway
- Existing Access Road
- Existing Powerline
- CHPP Facilities
- Proposed Water Pipeline/Service Road
- Railway Loop
- Proposed Helipad
- Proposed Mine Permit Boundary
- Ponds and Ditches
- Coal Handling Processing Plant and Infrastructure
- Covered Conveyor, Access Road and Powerline ROW
- Proposed Golf Course
- Undisturbed Area
- Legacy Mine Disturbance
- Ultimate Pit Extent
- Ultimate Rock Disposal Area Extent
- Topsoil Storage
- Construction Camp
- Gold Creek Catchment
- Blairmore Creek Catchment
- Municipal Boundary
- Land Ownership**
- Crown
- Crown (ROE Held By Devon)
- Crown (MLL Held By Benga)
- Freehold - Benga
- Freehold - Benga 50%, CNP
- Freehold - Other
- Registered Roadway

PROJECT

GRASSY MOUNTAIN COAL PROJECT

PROJECT: 14-00201-01

DRAWN BY: SL

CHECKED BY: DM

DATE: AUGUST 14, 2017

TITLE

SURFACE WATER LICENCES ON CROWSNEST RIVER AND YORK, BLAIRMORE AND GOLD CREEKS

NOTES

AltaLIS, 2017; MEMS, 2017; NRCAN, 2015; SRK, 2017
Datum/Projection: UTM NAD 83 Zone 11

FIGURE

1

0 1.5 3 6 Kilometres

Attachment B

Request for:

**Water Licence Transfer From Devon
Canada Corporation to Benga Mining
Limited**

Devon transfer for 123,350 m³ (100 ac. ft.)

Contents

Application Form for Transfer of Water Allocation

- Part 1A – Existing Licence
- Part 1B – Existing Licence Certification of Licence in Good Standing
- Part 2 – Proposed Licencee

Licencee Declaration form

Site Survey Plan

Previous Assignment of Water Licence 39493

- Assignment of Public Lands Dispositions
- Updated and Re-issued Interim Licence 4329 – 1982-08-05
- Current plans and reports filed:
 - 10400-1 - Topographic map
 - 10400-2 – General Plan Plot Plan
 - 10400-3 – Raw Water Intake Structure
 - 10400-4 – Pump House Foundation
 - 10400-5 Topographic Plan

Photographs of Devon Intake Structure

Application Form for Transfer of Water Allocation



PART 1A EXISTING LICENCE

IMPORTANT: A LICENCE MUST BE IN GOOD STANDING TO BE ELIGIBLE FOR TRANSFER (SEE SECTION 1B).

EXISTING LICENSEE INFORMATION

Name or Company Name: Greg Rokosh, Devon Canada Corporation		Home Telephone: n/a
Address (Street, PO Box, etc.): 2000 400, 3 Ave SW.		Bus. Telephone: 403-515-5751
		Fax:
Place, Province: Calgary, Alberta	Postal Code: T2P 4H2	Email: greg.rokosh@dvn.com

CONTACT PERSON FOR LICENSEE (IF DIFFERENT FROM ABOVE)

Name or Company Name:		Home Telephone:
Address (Street, PO Box, etc.):		Bus. Telephone:
		Fax:
Place, Province:	Postal Code:	Email:

EXISTING LICENCE INFORMATION

Licence Number*:0039493-00-01	File Number:10400
Approved Plan Numbers*: 10400-1, 10400-2, 10400-3, 10400-4, 10400-5. Please note: Devon is not intending to transfer the works as shown on the attached plans to Riversdale. As such, information relating to these plans is not deemed relevant for this transfer.	
Purpose: Industrial (processing)	Source: Crowsnest River (NE 2-8-5W5)

* Attach copies (e.g., licence, interim licence, licence amendments, approved plans, etc.)

Is the licence the result of a previous transfer where the transferred allocation is to revert back to the original licence? Yes No If yes, attach relevant documentation describing the temporary transfer.

Application Form for Transfer of Water Allocation



PROPOSED TRANSFER INFORMATION

The proposed transfer is: Permanent Temporary

If temporary, describe the terms of the transfer:

Date of expiry for the temporary transfer:
Additional terms of the temporary transfer:

The proposed transfer is for: the entire allocation a portion of the allocation

Describe the allocation to be transferred:

Priority Number: 1961-12-14-002
Quantity of water to be transferred (indicate units): 100 acre-feet annually
Rate of diversion to be transferred (indicate units): 0.59 cubic feet per second
Second priority number (if applicable): n/a
Quantity of water to be transferred (indicate units):
Rate of diversion to be transferred (indicate units):

I hereby certify that I have read and understand the above information, it is correct to the best of my knowledge, and I agree to the above allocation of water being transferred.

11/05/2016
Date (dd/mm/yy)

Greg Rokosh
Print Name


Signature

Devon Canada Corporation
Company Name

PART 1B

EXISTING LICENCE

CERTIFICATION OF LICENCE IN GOOD STANDING

Complete and attach a Licensee Declaration Document.

Application Form for Transfer of Water Allocation



PART 2

PROPOSED LICENSEE

PROPOSED LICENSEE INFORMATION

Name or Company Name: Benga Mining Ltd.		Home Telephone:
Address (Street, PO Box, etc.): PO Box 660, 12331 – 20 Ave		Bus. Telephone: 403-753-5160
		Fax:
Place, Province: Blairmore, AB	Postal Code: T0K 0E0	Email:

CONTACT PERSON FOR LICENSEE (IF DIFFERENT FROM ABOVE)

Name or Company Name: Cal Clark,		Home Telephone:
Address (Street, PO Box, etc.): PO Box 660, 12331 – 20 Ave,		Bus. Telephone: 403-563-6455
		Fax:
Place, Province: Blairmore, AB	Postal Code:T0K 0E0	Email: Cal.Clark@rivresources.com

PROPOSED LICENCE INFORMATION

Point of diversion (legal land description): SW-024-008-04-W5M, raw water pond collects surface runoff and seepage within the Fence-line approval area
Point(s) of use (legal land description): within the Grassy Mountain Mine Permit area/fence-line approval
Source: Precipitation that would ordinarily report to Blairmore Creek and Gold Creek
Purpose: Coal Mine Landscape re-contouring, coal washing and mine operations
Annual quantity to be transferred (indicate units):100 acre feet
Rate of diversion to be transferred (indicate units): up to 0.59 cfs
Proposed rate of diversion if more/less than transferred rate of diversion (indicate units)

The proposed transfer is: Permanent Temporary

If temporary, describe the terms of the transfer:

Date of expiry for the temporary transfer:
Additional terms of the temporary transfer:

FOLLOWING INFORMATION IS REQUIRED

- Description of the construction or development required for the proposed project. This includes tentative starting date, phases of construction, etc. (can be described in the space provided below).

Application Form for Transfer of Water Allocation



- Detailed plans for the proposed project.
- Written consent from the owner of the appurtenance(s). This includes any land or undertakings the licence is appurtenant to.
- Written consent to access other land(s) which the licence is not appurtenant to. This includes access to the point of diversion, access to adjacent lands, road allowances, use of works agreements, conveyance agreements, etc.
- Status of other permits/authorizations with other agencies, e.g. municipal, provincial, federal (optional).
- Water Shortage Response Plan.

DESCRIPTION OF ACTIVITIES RELATING TO THE PROJECT:

Benga currently owns the lands where the raw water pond is proposed to be constructed.

The transferred allocation will be used for make-up water that is required for the coal wash plant and other components of the project. The transfer of allocation from the Devon site will be one of three allocations required to licence the projects water needs.

Benga requests the term of the transferred licence to be 25 years from the start date of the project on January 1, 2019 to ensure the viability of the project once started. If the time were shorter and the licence not renewed it would be impossible to complete the reclamation of the mine site.

Benga requests the 10% holdback not be taken in this transfer because the entire allocation is being moved downstream a considerable distance and there will be no impacts on downstream users and no impacts to the environment.

To protect the aquatic environment or to implement a water conservation objective, I understand that Director may withhold up to 10% of the transferred amount of water.

I hereby certify that I have read and understand the above information and it is correct to the best of my knowledge.

10/05/2017
Date (dd/mm/yyyy)

Cal Clark
Print Name


Signature

Benga Mining Limited
Company Name

Licensee Declaration Form

**Water Licence – In Good Standing
Licensee Declaration**

UNLESS OTHERWISE STATED, COMPLETE ALL PARTS OF THE FORM

File No.: 10400		Licence No: 0039493-00-01
Licensee Name: Devon Canada Corporation		
Licensee Representative Name: Maude Ramsay –Senior Supervisor, Environment & Regulatory		Mailing Address: 2000, 400 3 Ave SW, Calgary, AB T2P 4H2
		Phone: 403-776-4273 Fax: (if applicable)
Declaration Completed by: (If different than the licensee) Greg Rokosh – Environment Professional	Date Declaration Completed: 2016/08/05	Cell Phone: 403-891-9251
		Email: greg.rokosh@dvn.com

Purpose: Industrial (processing).	Priority No. 1961-12-14-02
Source of Water: Crowsnest River.	Point (s) of Diversion: NE 2-8-5W5 Point of diversion is as shown on approved plan no. 100400-3
	Point(s) of Use: Coleman Gas Plant (01-11-08-05W5). Point of use as shown on approved plan no. 10400-2
Annual Volume for Diversion: 100.0 acre-feet	Maximum Rate of Diversion: 0.59 cubic feet per second (220.0 imperial gallons per minute)
Timing of Diversion: Are there any timing restrictions (time periods of use) on your licence Yes/No. No.	
Storage Capacity (if applicable): N/A	

In this next section, make a complete list of all of the conditions attached to your licence; indicate whether the condition is met or not met; provide comments and/or documentation to support the status of the condition.

#	Conditions of Licence	M	NM	Comments	M=Met; NM = Not Met
1	The licensee is responsible for the operation and maintenance of the works and for any damages that may result there from.	X			
2	The licensee shall submit an annual water use return to the Controller of Water Resources, Alberta Environment on or before January 31 st in each year from the preceding calendar year showing: a) Periods and rates of diversion; b) The total monthly quantity of water diverted c) The total annual quantity of water diverted d) Such other information as may be required from time to time.	X		Water use data has been submitted to the online Water Use Reporting System monthly since January 2005. All total monthly and annual volumes can be retrieved from this system.	
3	The Controller of Water Resources may designate a minimum residual flow rate immediately downstream of the point of diversion and the licensee shall be required to cease or reduce any further diversion during periods when the residual flow falls below the rate designated.	X			
4	To protect the prior rights of other water users on this source of supply the licensee may be required to reduce the rate of diversion or cease diverting when requested to do so by the Controller of Water Resources, a Watermaster or other authorized officer of the department.	X			

Provide a list of all the approved plans. Are the constructed works as shown on approved plans? No

- 10400-1 Topographic Map
- 10400-2 General Plant Plot Plan
- 10400-3 Raw Water Intake Structure
- 10400-4 Pump House Foundation
- 10400-5 Topographic Plan

Comment: Please note, none of the approved plans are being transferred with the Licence. The Coleman Gas Plant as referred to in 10400-2 is decommissioned and no structures related to the raw water intake currently exist within the Plant boundaries. The pump house foundation, including the pumping suction and filter structure remain in place, however the pump has been decommissioned. The raw intake structure exists as shown on the approved plan.

Are the existing works capable of diverting the full volume, rate and timing on your licence? If no, provide explanation

Comment: Please see comments above. Coleman Gas Plant has been decommissioned. Existing works are not being transferred with the licence.


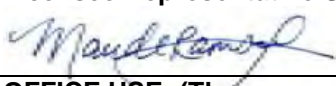
No

Are reservoir area/capacity/structures as shown on approved plans and are they capable of operating in accordance with the approved plans? Water intake structure still exists. Pump has been decommissioned and is not currently capable of diverting water. Existing works are not being transferred with the licence.

Is the Licensee the Landowner?	No
At the Point of Diversion?	Yes
At the Point of Use?	Yes
Of the Delivery System? (See attached Crown PIL)	No

Additional Declaration Comments Devon initiated decommissioning of the Coleman Gas Plant in 2013 and has maintained the associated water licence as a water source to support decommissioning activities if needed. Decommissioning was completed in the fall of 2015. Devon has since reviewed its water requirements and determined that a water licence is no longer necessary to support reclamation of the Coleman Gas Plant. In the event water is needed for future activities, Devon would apply for a temporary diversion licence.

Statement of Declaration:
The information given on this form is true to the best of my knowledge.

Reviewer's Signature (Person who completed the declaration): 	Printed Name: Greg Rokosh	Date: 2016/08/05
Licensee Representative Signature (if different from the Reviewer): 	Printed Name: Maude Ramsay	Date: 2016/08/05
OFFICE USE: (These following sections will be completed by a Water Act Approvals Writer)		
Reviewed by:	Review Date:	Follow-up Required Y/N: Specify
Field Inspection Required Y/N	Field Inspection Completed by:	Field Inspection Date:
Outstanding/pending compliance items or related compliance history.	Date Referred to Enforcement and Surveillance	Date Referral Received
LICENCE IN GOOD STANDING: Y/N	If no, specify follow-up action	ASSESSMENT DATE:
		Signature of Approval Writer:

Additional Approval Writer Assessment Comments:

Patch 3

SURFACE LAND SCANNING PROJECT

SEPARATOR SHEET:

SURVEY



SURVEY

755 JK

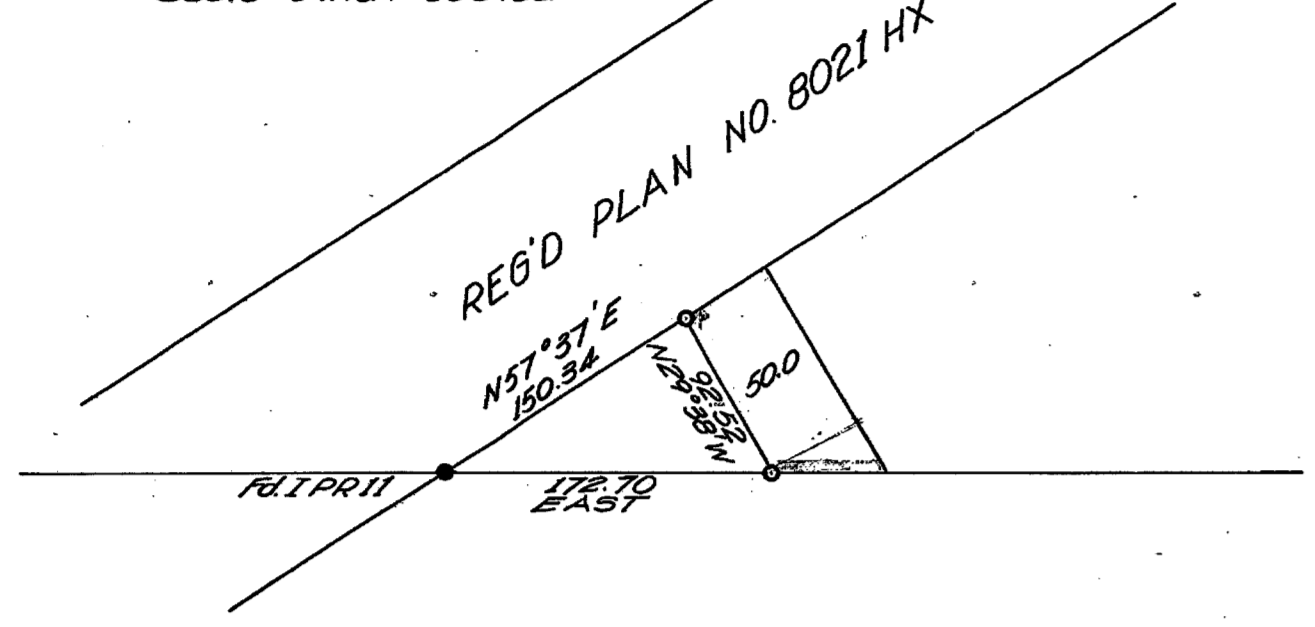
Certification

I certify that the within instrument is duly Entered and Registered in the Land Titles Office for the South Alberta Land Registration District at Calgary in the Province of Alberta, at 2:15 o'clock P.M. on the 1st day of Dec 1961 as number 755 Book JK Folio 22

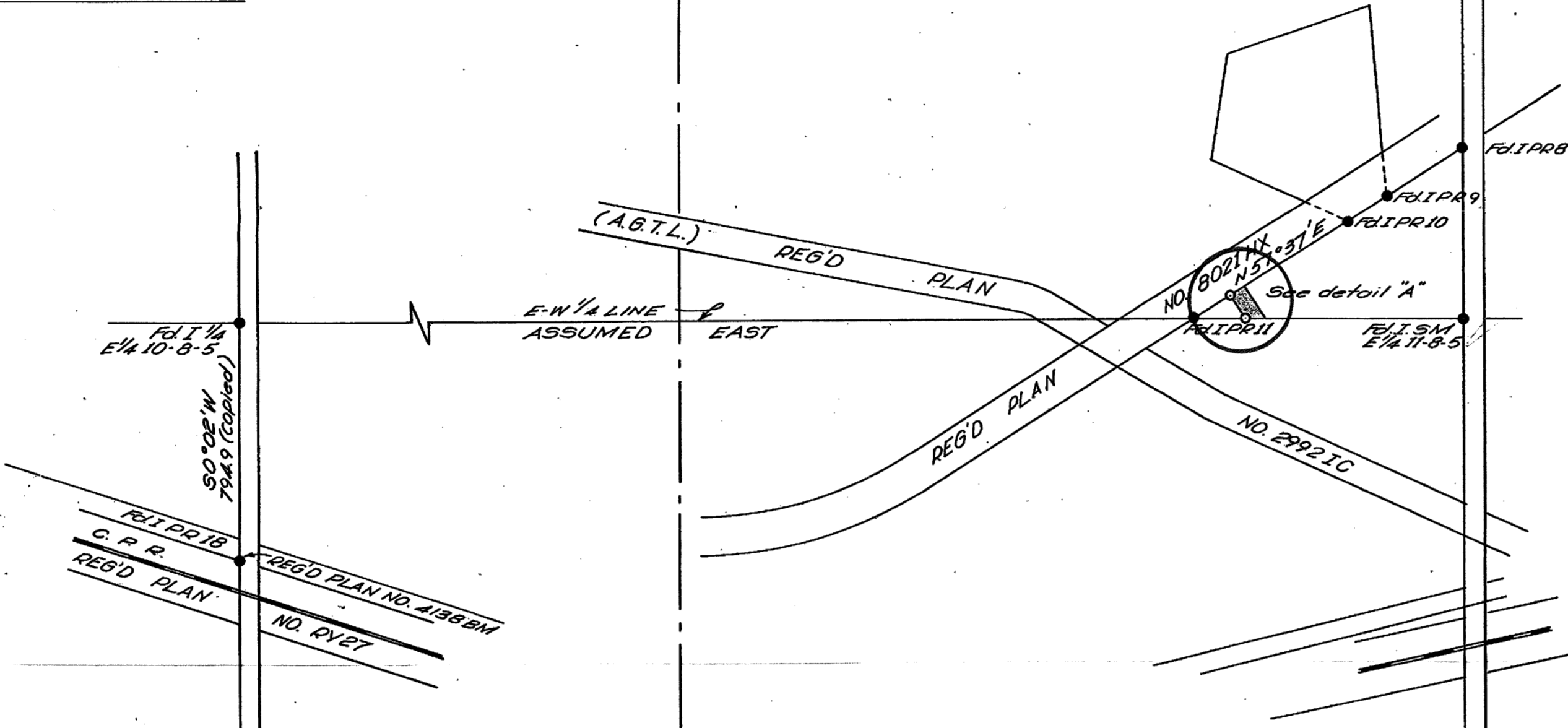
John J. ...
Original

APPROVED this 22 day of November, 1961.
J. D. ...
Director, Technical Division
Dept. of Lands and Forests

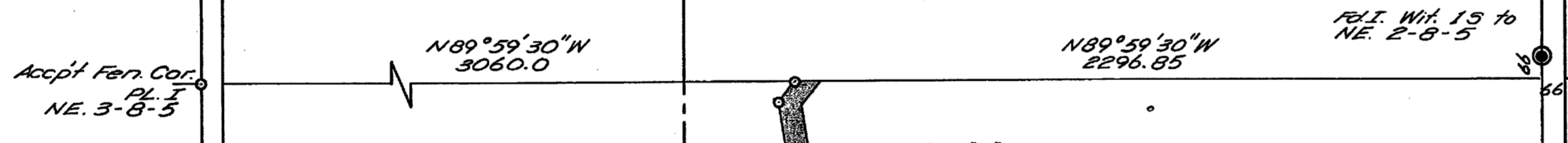
ACCESS ROAD R/W
DETAIL A
Scale: 1 inch = 100 feet



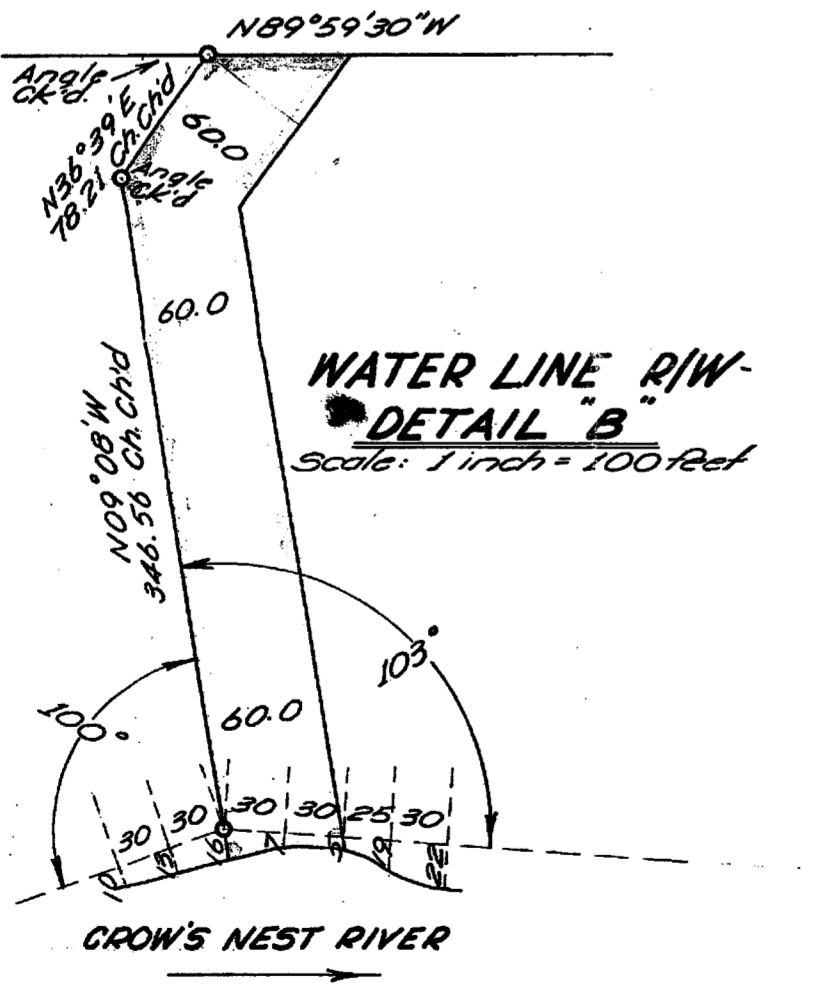
NE 1/4 SEC. 11 TWP. 8 RGE. 5 W. 5 M.
AREA RECD. 0.13 ACRES



SE 1/4 SEC. 11 TWP. 8 RGE. 5 W. 5 M.



NE 1/4 SEC. 2 TWP. 8 RGE. 5 W. 5 M.
AREA RECD. 0.60 ACRES



755 JK

Legend

Witness Monument found shown thus
Statutory Iron posts found shown thus Fd I
Statutory Iron Road posts found shown thus Fd I & R
Area to be registered by this plan shown shaded in red
Chained distances are from post to post unless otherwise shown
Distances are shown in feet and decimals of a foot.

Affidavit

I, Walter E. Bright, of the City of Calgary in the Province of Alberta, Alberta Land Surveyor, make oath and say: That the survey represented by this plan has been made in accordance with the provisions of the Alberta Survey Act and that this survey was performed between the dates of SEPTEMBER 29th and SEPTEMBER 30th AD 1961 and that this plan is correct and true and is being put in accordance with the provisions of the Land Titles Act.
Sworn before me at Calgary in the Province of Alberta this 5th day of November 1961
Walter E. Bright
Alberta Land Surveyor

Acknowledgement

Saratoga Processing Company Limited
George P. Hume Vice Pres.
... Asst. Secy.

CANADIAN BECHTEL LIMITED

CALGARY Agent ALBERTA

SARATOGA PROCESSING COMPANY LIMITED

PLAN OF SURVEY OF
RIGHT-OF-WAYS
FOR
ACCESS ROAD & WATER LINE
IN PART OF THE
NE 1/4 SEC'S 2 & 11 TWP. 8 RGE. 5 W. 5 M.

GOVERNMENT OF ALBERTA
DEPT. OF HIGHWAYS
EDMONTON
Approved only as to system of survey

ALBERTA
W. E. BRIGHT A.L.S.
1960

Scale: 1 inch = 400 feet	Date: 1961	Drawing No.: LS 100
-----------------------------	---------------	------------------------

Previous Assignment of Water Licence 39493

ASSIGNMENT OF DISPOSITION(S)

THIS ASSIGNMENT made this 1st day of March, 1999.

BETWEEN:

SARATOGA PROCESSING COMPANY LIMITED, a body corporate, with an office at 3000, 400 – 3rd Avenue S. W., Calgary, Alberta, T2P 2H8

(hereinafter called the "Assignor")


- and -

NORTHSTAR ENERGY CORPORATION, a body corporate, with an office at 3000, 400 - 3rd Avenue S. W., Calgary, AB, T2P 4H2

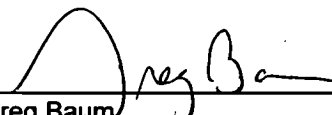
(hereinafter called the "Assignee")

The Assignor, being the holder of the Disposition(s) as described in Schedule "A", attached hereto, in consideration of the sum of One (\$1.00) Dollar, payment of which is hereby acknowledged by the Assignor, hereby assigns the Disposition(s) to the Assignee, and the Assignee hereby accepts and agrees to be bound by this Assignment.

Signed in the presence of:



SARATOGA PROCESSING COMPANY LIMITED



Greg Baum
Vice President

NORTHSTAR ENERGY CORPORATION



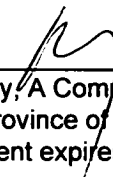
Celeste Rissling
Senior Surface Analyst

AFFIDAVIT


I, **Shelly Millett**, of the City of Calgary, in the Province of Alberta, Surface Rights Administrator, MAKE OATH AND SAY:

1. THAT I was personally present and did see **GREG BAUM** in his capacity for SARATOGA PROCESSING COMPANY LIMITED named in the within instrument, who is personally known to me, to be the person named therein, duly sign and execute the same for the purposes named therein.
2. THAT the same was executed at the City of Calgary, in the Province of Alberta, and that I am the subscribing witness thereto.
3. THAT I know the said **GREG BAUM**, and he is, in my belief, of the full age of eighteen years.

SWORN BEFORE me at the City of)
Calgary, in the Province of Alberta,)
this 6 day of Oct, 1999)



Karen Pugsley, A Commissioner for Oaths in)
and for the Province of Alberta,)
My Appointment expires June 6, 2000)



SHELLY MILLETT

**THIS IS SCHEDULE "A" ATTACHED TO AND MADE
PART OF THAT ASSIGNMENT OF DISPOSITION(S)
DATED THE 1ST DAY OF MARCH, 1999, BETWEEN
SARATOGA PROCESSING COMPANY LIMITED
AND
NORTHSTAR ENERGY CORPORATION**

<u>FILE NO.</u>	<u>DISPOSITION NO.</u>	<u>FEE</u>
S004435	PIL 000024	\$25

GOVERNMENT OF THE PROVINCE OF ALBERTA

DEPARTMENT OF LANDS AND FORESTS

The Public Lands Act

Pipe Line Installation Lease No. 24

THIS INDENTURE made in duplicate this 8th day of January A. D. 1962;

BETWEEN:

HER MAJESTY THE QUEEN in the right of the Province of Alberta, represented herein by the Minister of Lands and Forests of the said Province, (hereinafter called "the Minister"),

OF THE FIRST PART

- and -
SARATOGA PROCESSING COMPANY LIMITED, a body corporate incorporated under the laws of the Province of Alberta having its principal place of business within the Province at the City of Calgary.

(hereinafter called "the lessee");

OF THE SECOND PART

WHEREAS the lands hereinafter described are public lands within the meaning of The Public Lands Act (hereinafter referred to as "the Act"); and

WHEREAS the lessee is an operator within the meaning of The Public Lands Pipe Line Regulations (hereinafter referred to as "the Regulations"); and

WHEREAS the lessee requires the public lands hereinafter described for the purposes of a site for a pipe line installation;

NOW THEREFORE THIS INDENTURE WITNESSETH, that in consideration of the rents, covenants and agreements hereinafter reserved and contained and on the part of the lessee to be paid, kept, observed and performed, the Minister by these presents hereby demises and leases unto the lessee, as tenant, all that certain parcel or tract of land situate in the Province of Alberta, and being more

particularly described as follows namely:

All that parcel or tract of land, situate, lying, and being in the 8th Township, in the 5th Range, West of the 5th Meridian, in the Province of Alberta, Canada, and being composed of:

All that portion of the North East quarter of Section 2 of the said Township, required for a pipeline right-of-way and pump house, as shown colored red upon a plan of survey of the said right-of-way of record in the Department of Lands and Forests at Edmonton as No. 1561 P. and on file in the Land Titles Office at Calgary for the South Alberta Land Registration District as No. 755 J.R.

The land herein described containing by admeasurement 0.60 of an acre, more or less.

TO HAVE AND TO HOLD the said lands unto the lessee, subject to the rents hereby reserved and the agreements, conditions and covenants herein contained for the term of twenty-five years to be computed from the 8th day of January, 1962; renewable for further terms of twenty-five years subject to and in the manner provided by the Regulations.

YIELDING AND PAYING THEREFOR unto the Minister

the clear yearly rent of \$35.00 Dollars, such rent being payable yearly in advance of the 8th day of January in each year of said term, the first of which payments has been made on or before the 8th day of January, 1962, and such rent to be free and clear of and from all rates, taxes and assessments and from all manner of deductions.

THE LESSEE HEREBY COVENANTS AND AGREES with the Minister as follows:

1. The lessee shall at all times during the term hereby created, perform, observe and comply with all the provisions, obligations and requirements which the lessee is required to perform, observe and comply with by the Act, and by any Act hereafter enacted in substitution therefor, and the Regulations and any regulations passed in substitution therefor, and the terms, conditions and provisions of all such Acts and regulations shall be deemed to form part of this lease, which shall be read and construed as if the same had been set out and incorporated herein.
2. The lessee shall yield and pay or cause to be yielded and paid to the Minister at Edmonton, or to such other person duly authorized by the Minister in that behalf, the rent hereby reserved in the manner aforesaid.
3. The said lands and the buildings, structures and equipment erected thereon shall be used by the lessee solely for the purposes permitted by the Regulations and any regulations passed in substitution therefor.

THE MINISTER COVENANTS AND AGREES with the lessee as follows:

4. The lessee while it is not in default of performance and observance of the covenants and conditions on its part to be performed and observed shall peaceably hold and enjoy the said lands hereby granted without hindrance, molestation or interruption on the part of the Minister or of any person claiming by, through, under or in trust for the Minister.

THE MINISTER AND THE LESSEE HEREBY COVENANT AND AGREE as follows:

FEB 23 9 12 AM 1952

5. This indenture is a disposition made pursuant to The Public Lands Act and the rights and interest granted hereby are therefore subject to all reservations and exceptions required to be reserved or excepted, as the case may be, by that Act.

6. The provisions of the Act, and any Act passed in substitution therefor, that expressly or by implication relate to all leases and lessees generally apply to this indenture and the lessee, except those sections of any such Act which, according to the Regulations, expressly do not apply.

7. Any notice affecting this indenture which the Minister may desire to serve upon the lessee is sufficiently served upon the lessee by registered mail addressed to the lessee at **Room #427, Petroleum Building, Calgary, Alberta.** or personally left at the said address. Any such notice sent by registered mail shall be deemed to be given at the time when in due course of posting it would be delivered to the address to which it was sent.

8. Unless the context otherwise requires, any terms or expressions used in this lease that are defined in the Act or the regulations have the meaning given them by such Act or regulations, as the case may be.

9. This indenture shall not affect nor shall anything herein contained affect or prejudice the rights of the lessee to acquire public lands pursuant to expropriation or similar proceedings under any Act of the Legislature or of Canada.

IN WITNESS WHEREOF the parties hereto have executed this Indenture the day and year first above written.

SIGNED, SEALED AND DELIVERED)
by the Minister of Lands and Forests)
in the presence of:)

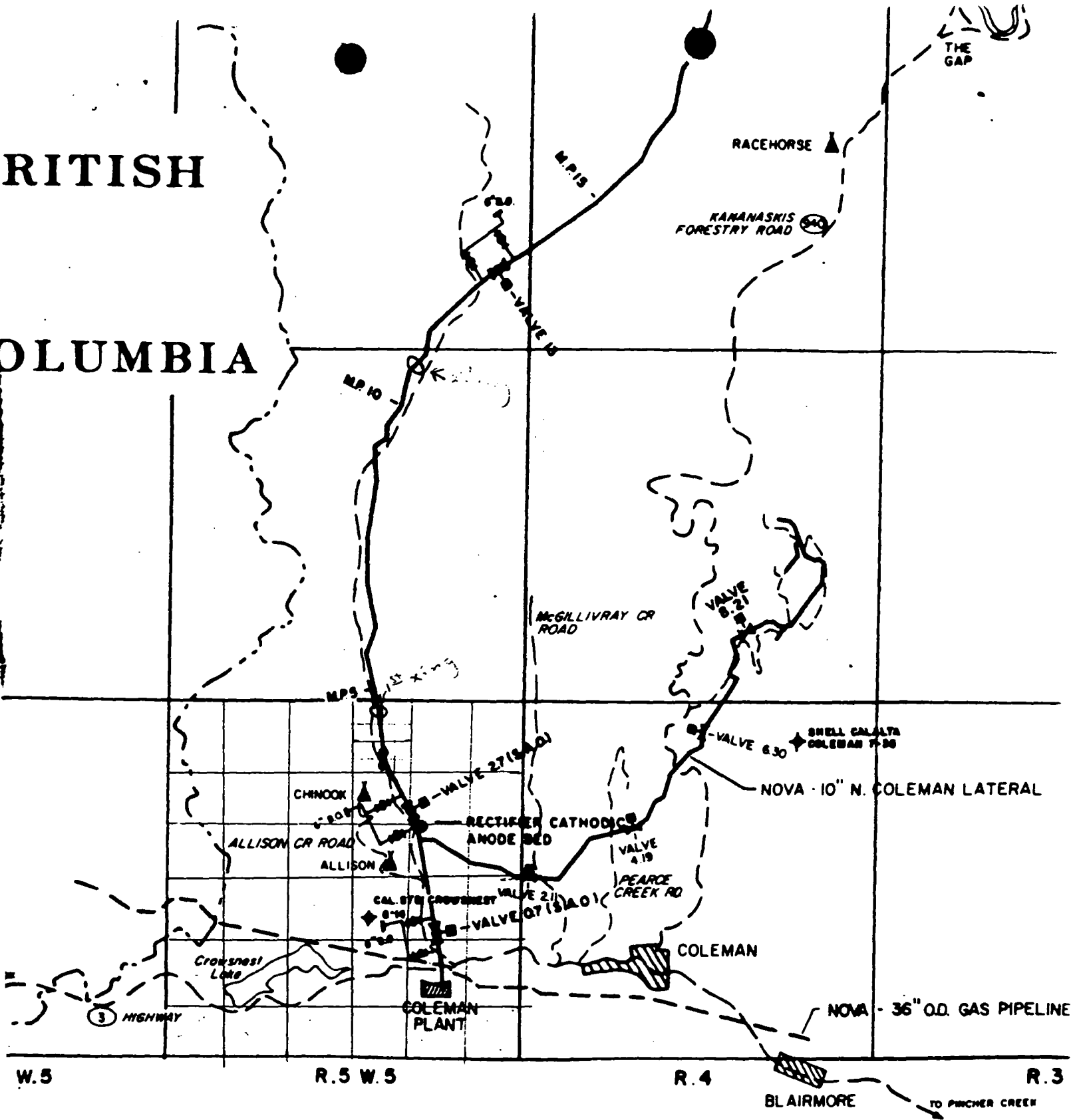
W. J. ...

L. H. ...
For Deputy Minister of Lands and Forests

Saratoga Processing Company Limited

George ...
VICE-PRESIDENT
(Execution by Lessee) *Asst. Secretary*

BRITISH COLUMBIA





ENVIRONMENT

UPDATED AND RE-ISSUED
INTERIM LICENCE

Pursuant to Section 18
THE WATER RESOURCES ACT

Issued to: **Saratoga Processing Co. Ltd.**
Drawer 460
Coleman, Alberta
TOK OMO

No. 4329

File No. 10400

Priority No. 1961-12-14-02

This updated and re-issued Interim Licence particularizes the rights, privileges and obligations embodied in and associated with the original Interim Licence as numbered above, or with any other form of authorization or approval issued in connection with the project identified herein under any former applicable Act or regulation, and updates same to conform to and comply with the current Act, regulations and standards

In particular this Interim Licence provides for the right to

A Construct, maintain and operate works as shown on current plans and reports filed, approved and identified in departmental records as:

- 10400 - 1 Topographic Map
- 10400 - 2 General Plant Plot Plan
- 10400 - 3 Raw Water Intake Structure
- 10400 - 4 Pump House Foundation
- 10400 - 5 Topographic Plan

B Divert and use water as hereinafter specified and described subject to the terms and conditions attached hereto and incorporated herein

PURPOSE: Industrial (processing)

SOURCE OF SUPPLY: Crowsnest River

POINT OF DIVERSION: NE 2-8-5-W5M

GROSS DIVERSION: Up to 100.0 acre-feet annually consisting of:

- 1. Estimated Consumptive Use: NIL
- 2. Estimated Losses: 100.0 acre-feet
- 3. Estimated Return Flow: NIL

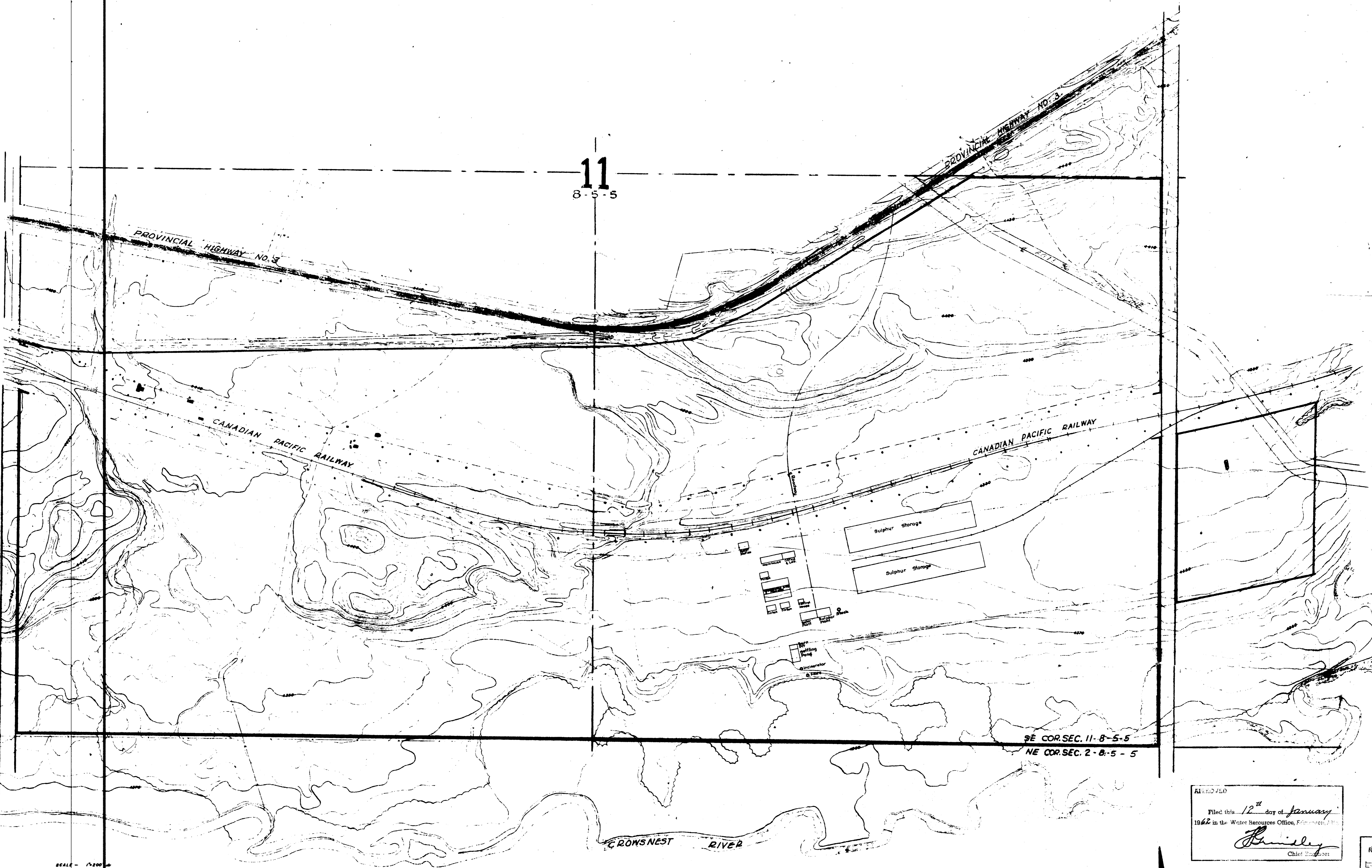
RATE OF DIVERSION: 0.59 cubic feet per second
(220.0 imperial gallons per minute)

Date first issued 1976 07 14

Date re-issued 1982 08 05

Controller of Water Resources

11
8-5-5



SE COR. SEC. 11-8-5-5
NE COR. SEC. 2-8-5-5

SCALE - 1" = 200'
CONTOUR INTERVAL - 5.0'
DATUM - APPROX. C.S.C.

APPROVED

Filed this 12th day of January
1962 in the Water Resources Office, Edmonton, Alberta

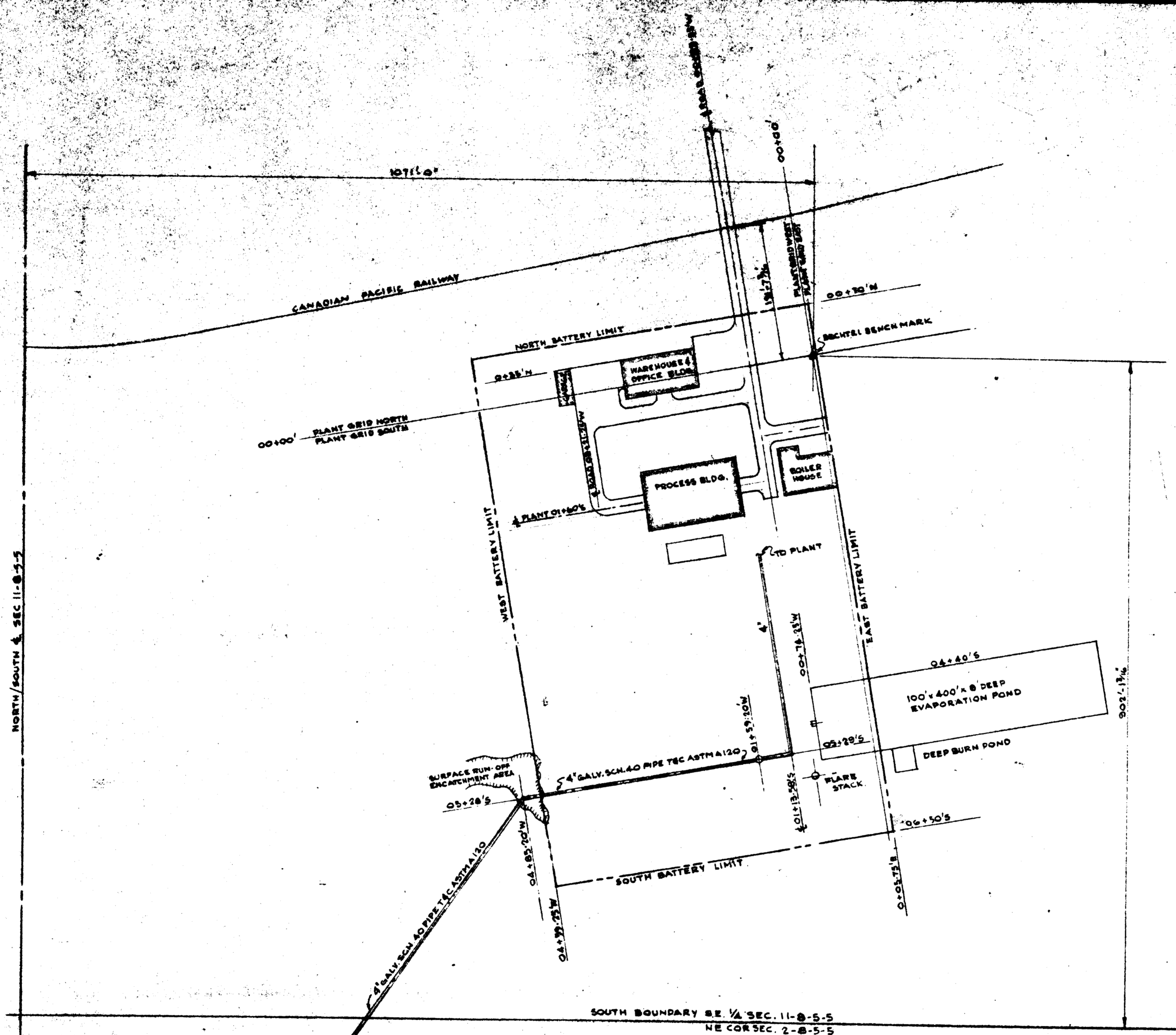
Penisley
Chief Engineer

SCALE REFERENCE
CNE 100H

CANADIAN BECHTEL LIMITED	
CALGARY	ALBERTA
SARATOGA PROCESSING COMPANY LIMITED	
TOPOGRAPHICAL MAP OF PROCESSING PLANT SITE	
DATE: 11-28-61	SCALE: 1" = 200'
CHECKED: 3714	AA-102A

Portions heavily outlined are owned by Westcoast Transmission Company Limited

P.10400-2



NOTE: PUMP: 1 1/2 x 2' CANADIAN BUFFALO TYPE C1 HORIZONTAL CENTRIFUGAL SINGLE STAGE PUMP 2" SUCTION, 1 1/2" DISCHARGE, DIRECT COUPLED TO 10HP 3/60/440/3600 RPM OPEN DRIP PROOF TYPE ELECTRIC MOTOR.

WELL PIPE WELDED ASTM-A-72 WRAPPED IN POLYETH TAP

APPROVED
 Filed this 12th day of January 1962 in the Water Resources Office, Edmonton, Alta.
Reinley
 Chief Engineer

GENERAL NOTES
 1. LOCATE PIPE 5/8 MIN. BELOW EXISTING GRADE
 2. CBL EL. 100'-0" = 4402.75' GSC LEVEL

REFERENCE DRAWINGS
 B.D-34 PUMP HOUSE FOUNDATION
 A.Q-42 INTAKE STRUCTURE

SCALE REFERENCE
 ONE INCH

7/0/61	ISSUED FOR CONSTRUCTION	FM	1/14/62
NO.	REV.	DATE	BY

SCALE 1" = 100'
 DRAWN BY P. HAWES

CANADIAN SICHTEL LIMITED
 TORONTO

SARATOGA PROCESSING COMPANY LIMITED
 CALGARY ALBERTA

GENERAL PLANT PLOT PLAN
COLEMAN GAS PLANT

3714-30	BA-22	0
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F.10400-3

LIST OF MATERIAL ¹⁰⁴⁰⁰⁻³

ITEM	QUAN	DESCRIPTION	ORDER NO.
1	5.3	CU YDS CONCRETE	Q-1
2	1 LOT	REINFORCING BARS	↓
3	1 LOT	MISCELLANEOUS STEEL	FIELD
4	4'-10"	36" REINF. CONC. SEWER PIPE	Q-1
5	3	2" TH. 10' x 2'-11" CEDAR BOARDS	FIELD
6			
7			
8	1 LOT	FLOWFORGE GRATING OR EQUAL	FIELD

GENERAL NOTES

- FOR LOCATION SEE SITE PLAN AA-1
- FOR DESIGN AND CONSTRUCTION NOTES FOR REINFORCED CONCRETE SEE CBL SPEC. EQ-1
- BECHTEL ELEVATION 100'-0" = PROCESS PLANT DATUM ELEVATION 4402.75'
- ALL STEEL TO BE PAINTED ONE COAT OF RUST INHIBITIVE PRIMER & TWO COATS OF BITUMASTIC PAINT.
- ARMO ASBESTOS BONDED CORRUGATED PIPE TO BE MADE TO MATCH EXIST. CONSTRUCTION WITH R.D. COUPLERS & NEOPRENE GASKETS. FOR MATERIAL SEE AS-B

REFERENCE DRAWINGS

DRAWING	NO.
SITE PLAN	AA-1
GRADING AT PUMPHOUSE, INTAKE & RUN-OFF CATCH BASIN	AS-3
PUMP HOUSE FOUNDATION	BQ-34

SCALE REFERENCE ONE INCH EQUALS ONE FOOT

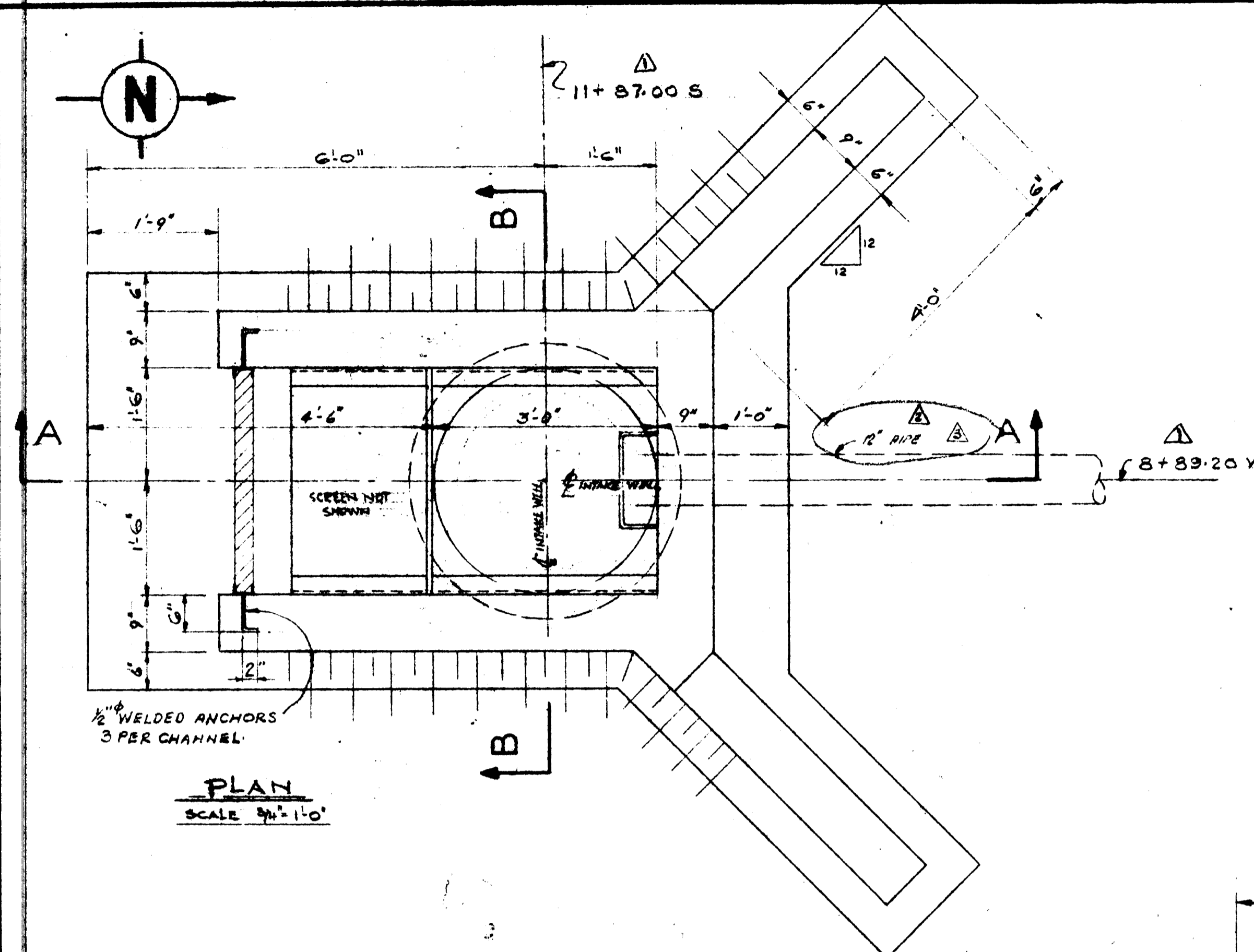
NO.	DATE	REVISIONS	BY	CHKD	APP'D
1	10/11/62	18" R.I. PIPE CHANGED TO 18" ARMO ASBESTOS BONDED PIPE. DELETED 18" R.I. PIPE FROM BILL OF MATERIALS.	J.R.	J.S.	J.S.
2	11/1/62	REVISOR'S MATERIAL LIST AND ADD COORDINATES.	J.R.	J.S.	J.S.
3	5/2/63	ISSUED FOR CONSTRUCTION	J.S.	J.S.	J.S.

CANADIAN BECHTEL LIMITED
TORONTO

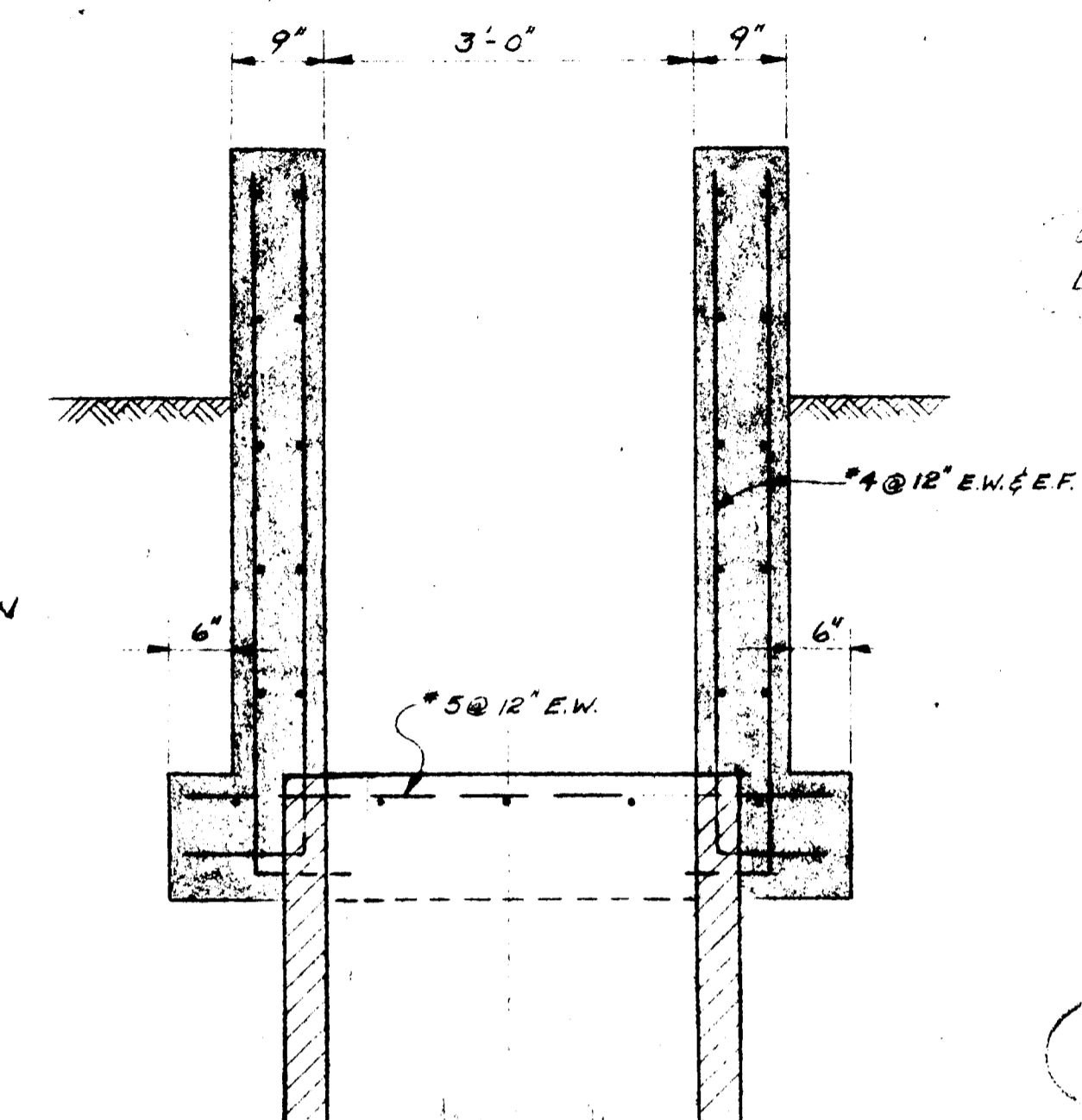
SARATOGA PROCESSING COMPANY LTD.
CALGARY ALBERTA

RAW WATER INTAKE STRUCTURE
COLEMAN GAS PLANT

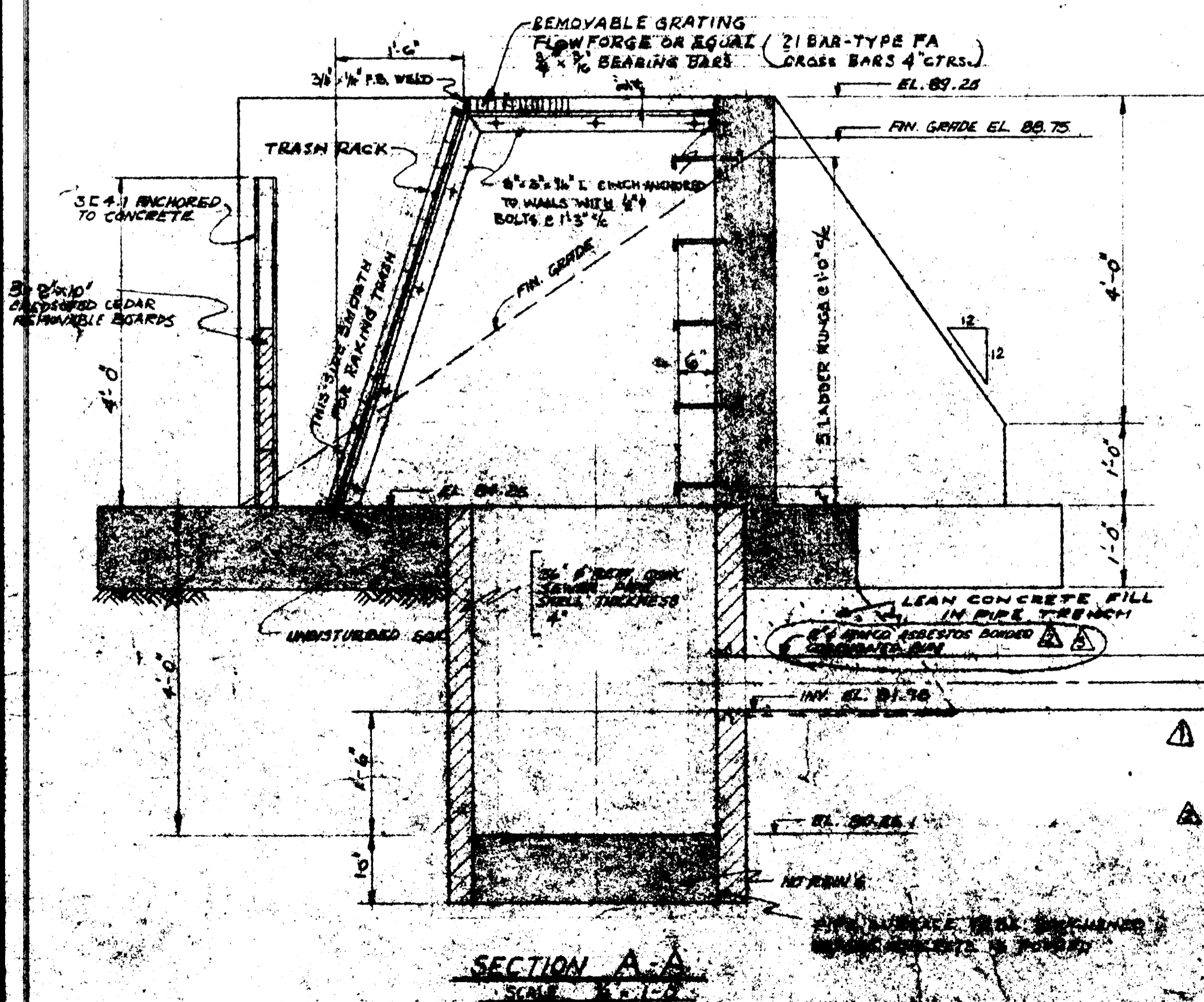
3714-30	BQ-42	3
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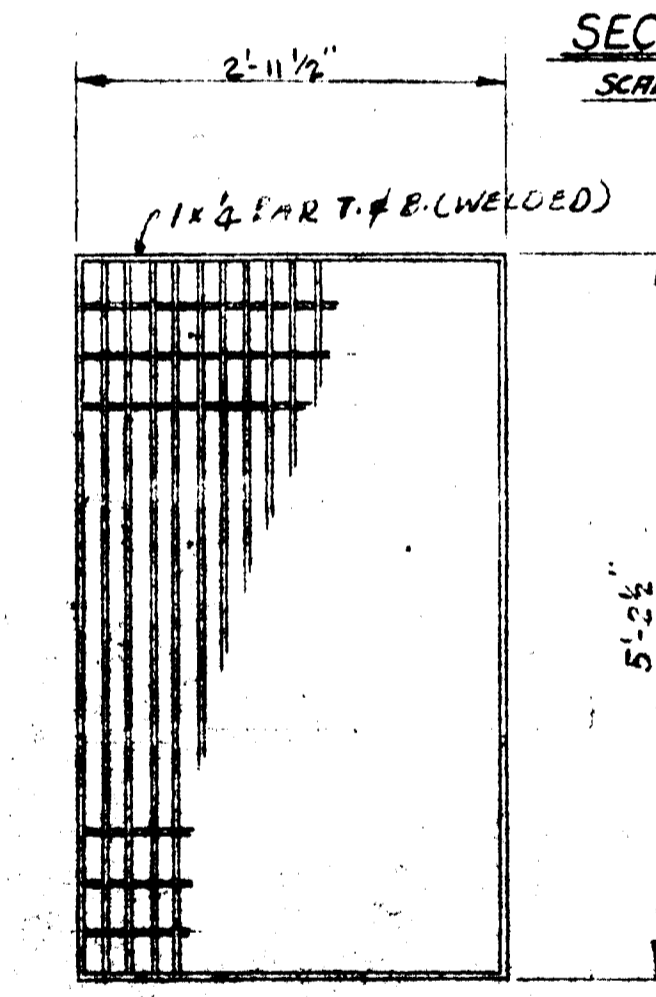
PLAN
SCALE 3/4" = 1'-0"



SECTION B-B
SCALE 3/4" = 1'-0"



SECTION A-A
SCALE 3/4" = 1'-0"



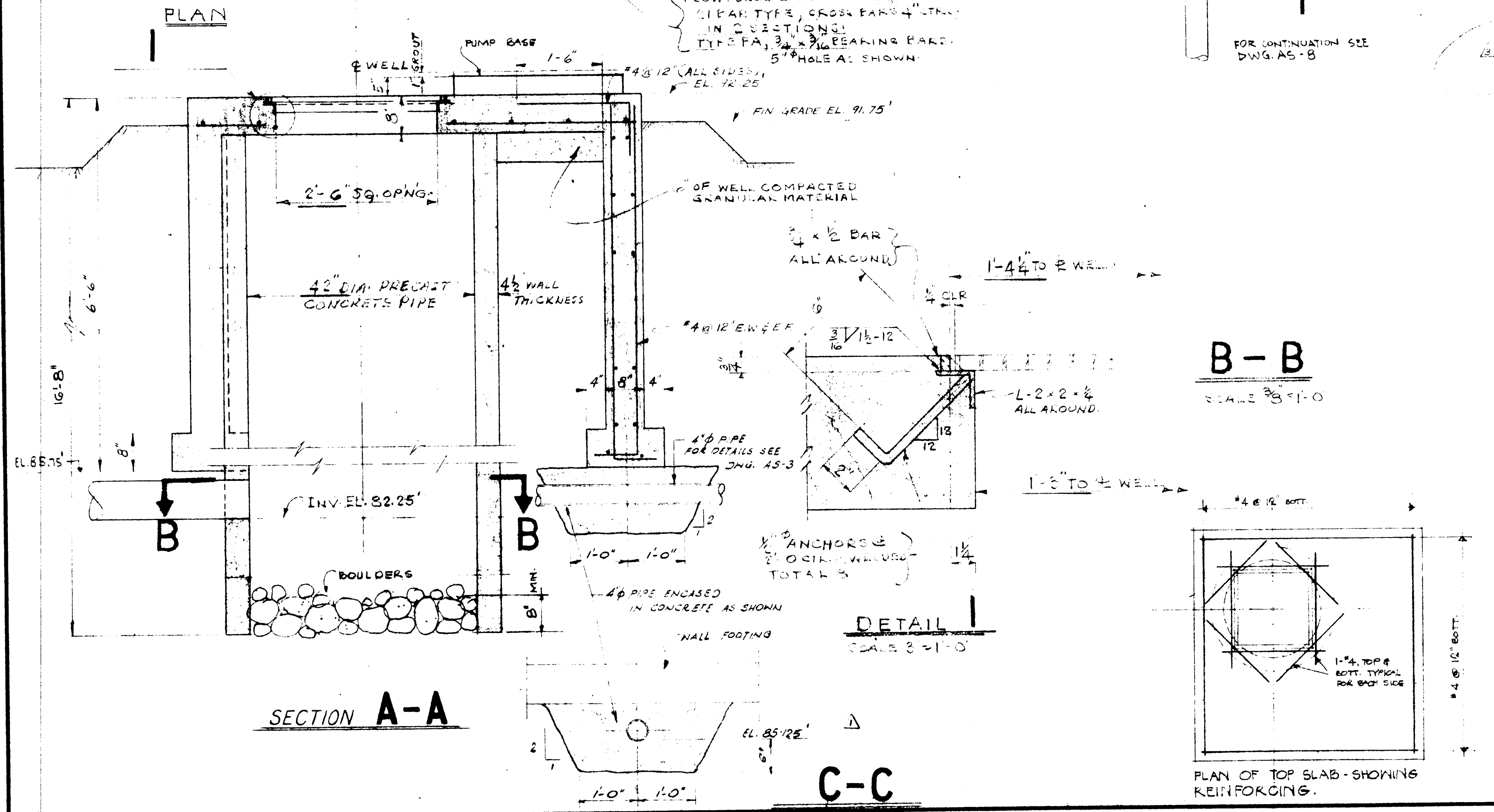
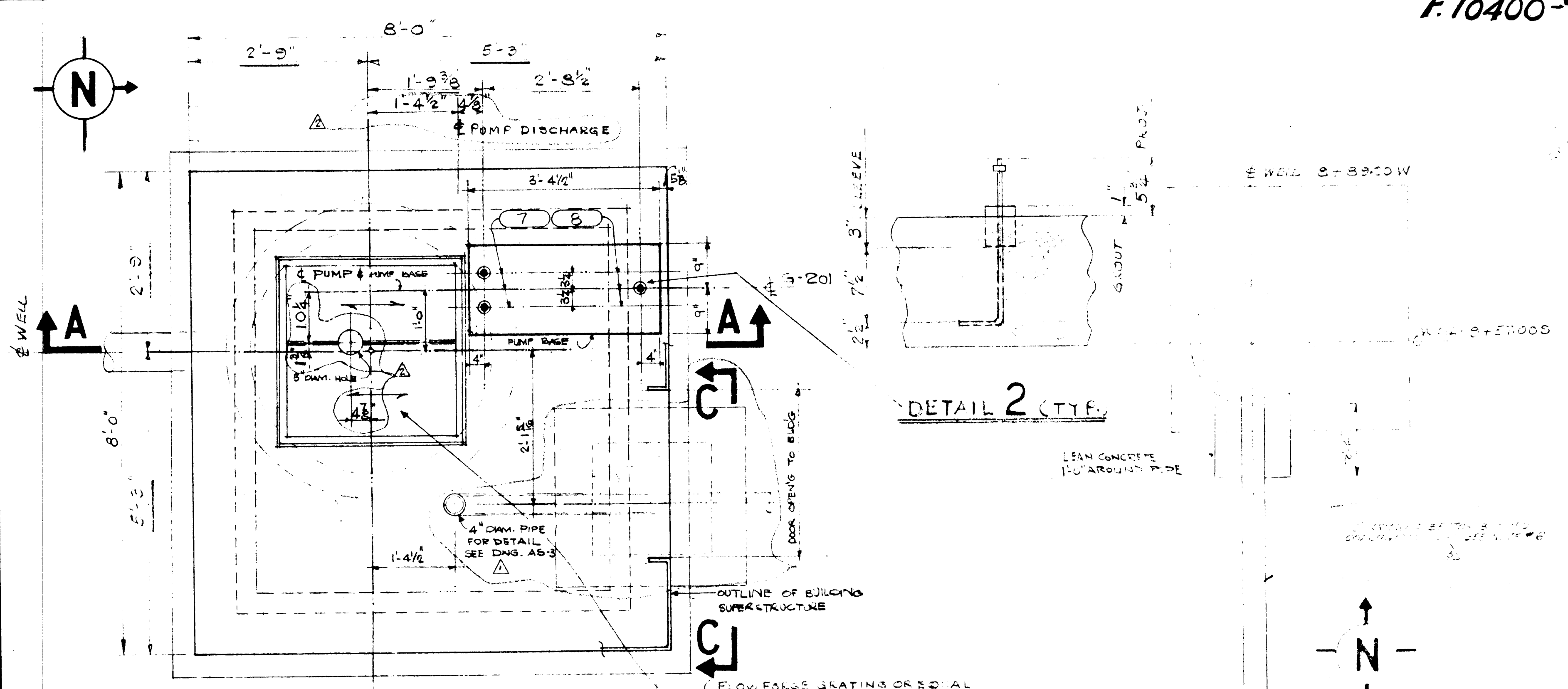
TRASH RACK
FLOWFORGE GRATING OR EQUAL
21 BAR-TYPE FA
2 1/2" x 1/2" BEARING BARS
USE TYPE 'D' FIXING CLIPS (2 EACH SIDE)

APPROVED
Filed this 12th day of January
1962 in the Water Resources Office, Edmonton, Alta.
Pennington
Chief Engineer

F.10400-4

LIST OF MATERIAL - F.10400-4

ITEM	QTY	DESCRIPTION	ORDERS
1	7-0	CONCRETE	Q-1
2	1 LOT	RAINPROOFING	Q-1
3	1 LST	ME. LOSS STEEL	Q-1
4	16-0	42" DIA. PRECAST CONCRETE PIPE	Q-1
5			
6			
7	2	5" X L-1-4" L-1-4" TYPE ANCHOR BOLT WITH WASHER & NUT	Q-1
8	1	4" DIA. PRECAST CONCRETE PIPE	Q-1



- GENERAL NOTES
- FOR LOCATION SEE SITE PLAN & PLAN
 - FOR DESIGN & CONSTRUCTION NOTES FOR REINFORCED CONCRETE SEE DWG. AS-1
 - ECHTEL ELEVATION 100'-0" FROM BENCH MARK. DATE: 1/15/62. ELEVATION: NN 44 200'
 - ALL STEEL TO BE PAINTED ONE COAT SPECTRAL INHIBITED PRIMER & ONE COAT EPDM PAINTING
 - FOR ANCHOR BOLT SETTING PLAN SEE 'ARMCO' DRAWINGS: E1-3 & E-7/8 (TO BE ISSUED LATER)
 - ALL WALLS & FOUNDATION TO BE MADE TO SATISFY ALL REQUIREMENTS FOR LOCAL CODES & SPECIFICATIONS. FOR DETAILS SEE DWG. AS-3

REFERENCES

SITE PLAN	AS-1
INTAKE STRUCTURE	AS-2
SPRINGS, SHEET 2	AS-3
UNDERGROUND PIPING PLAN	AS-3

12th January

Handwritten signature

No.	DATE	REVISIONS	BY	CHK	DATE	EMR	CHK	DATE
3	8/10/61	ISSUED FOR CONSTRUCTION	JN	IHS	1/15/62	W.F.		
4	8/10/61	ISSUED FOR CONSTRUCTION	JN	IHS	1/15/62	W.F.		
5	8/10/61	ISSUED FOR CONSTRUCTION	JN	IHS	1/15/62	W.F.		
6	8/10/61	ISSUED FOR CONSTRUCTION	JN	IHS	1/15/62	W.F.		

SCALE 3/4" = 1'-0"

DESIGNED: [Signature]

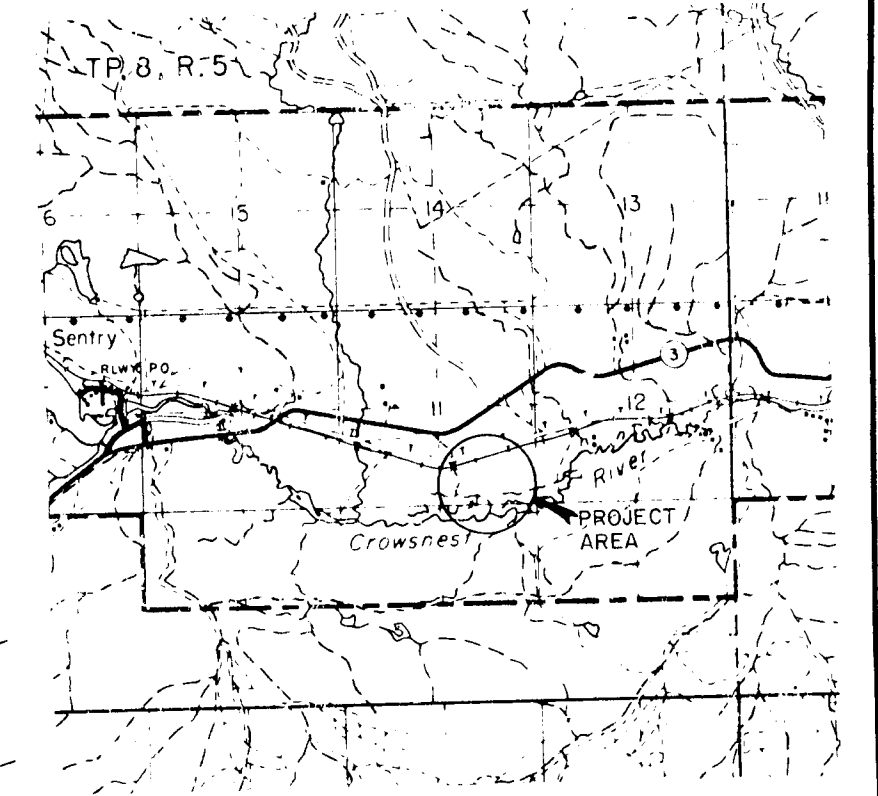
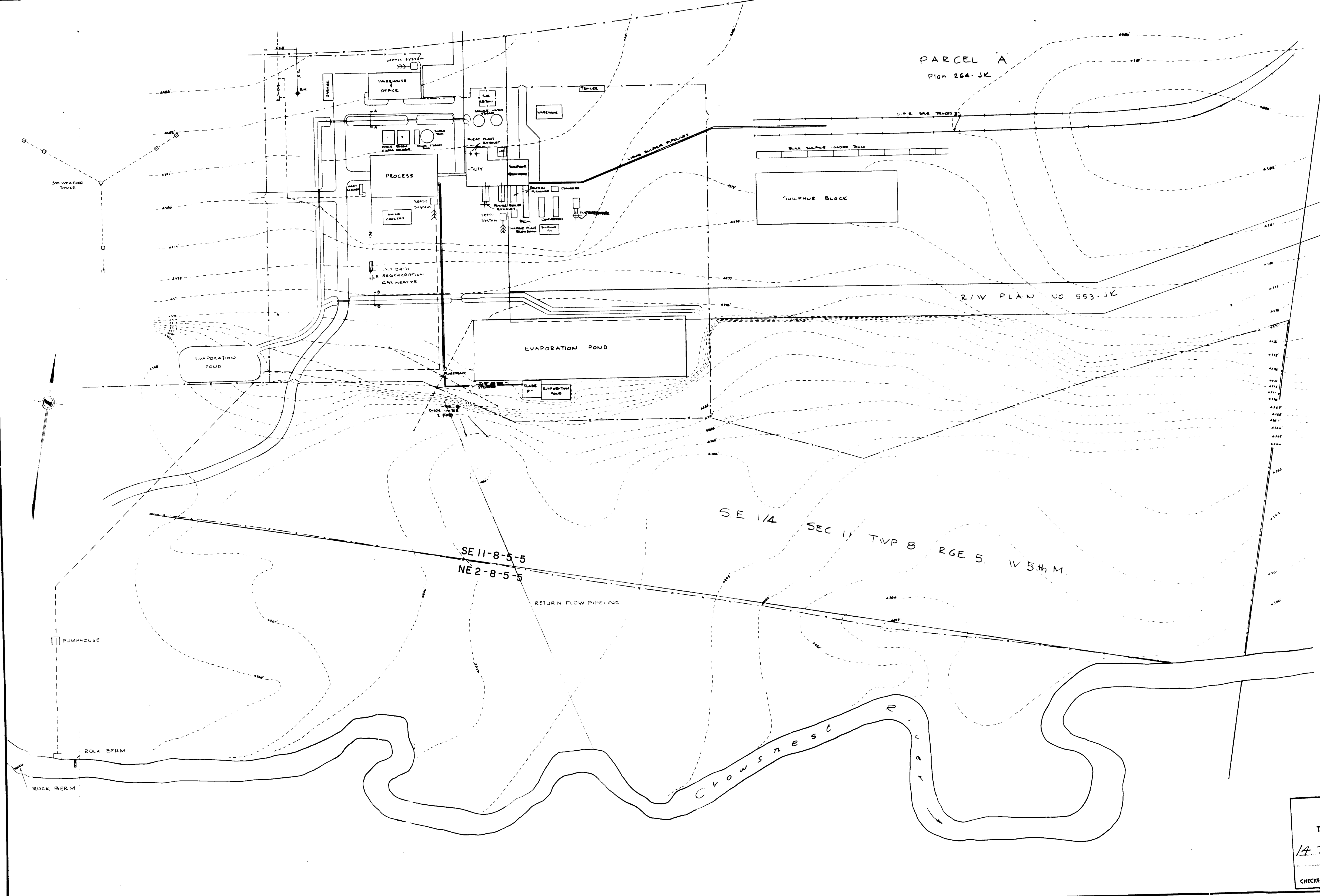
DRAWN: [Signature]

CANADIAN BECHTEL LIMITED
TORONTO

SARATOGA PROCESSING COMPANY LTD.
CALGARY ALBERTA

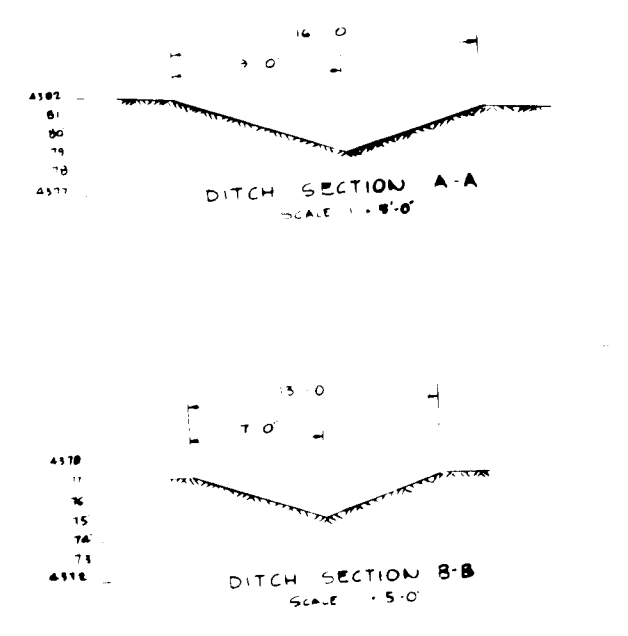
PUMP HOUSE FOUNDATION
COLEMAN GAS PLANT

JOB No.	DRAWING No.	REV.
3714-30	BQ-34	



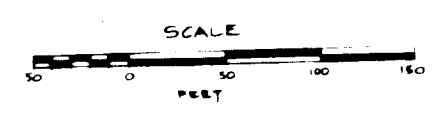
KEY PLAN
1" = 1 MILE

MICROFILMED
OCT - 1976
ALBERTA ENVIRONMENT
WATER RIGHTS



PUMP INFORMATION

PUMP MAKE - INGERSOLL RAND
 PUMP TYPE - 2CRVH
 PUMP CAPACITY - 220 Imp. Gals./Min.
 INLET SIZE - 4" Dia.
 OUTLET SIZE - 2" DIA.
 LIFT - 150' (7" Dia.)



APPROVED FOR FILING
 UNDER PROVISIONS OF
 THE WATER RESOURCES ACT

17 JULY 1976
 CONTROLLER OF WATER RESOURCES

NE 2-8-5-5
 SARATOGA PROCESSING
 COMPANY LIMITED
 TOPOGRAPHIC PLAN
 PROCESS PLANT

PP 3-109

FIGURE 2



Photo 1 – Devon Water Intake on the Crowsnest River



Photo 2 – Part of the Devon Water Intake System on the Crowsnest River

Attachment C

Request for:

**Water Licence Transfer (temporary) From
the Municipality of Crowsnest Pass
(Licence No. 45622) to**

Benga Mining Limited

Temporary transfer for 250,400 m³ (203 ac. ft.)

Contents

York Creek Licence to Divert and Use Water 45622-00-00 and 45622-00-01

Application Form for Transfer of Water Allocation

- Part 1A – Existing Licence
- Part 1B – Existing Licence Certification of Licence in Good Standing
- Part 2 – Proposed Licencee

Licencee Declaration form

Photographs of York Creek Intake Structure

Current plans and reports filed:

- 517-1 General Plan – Location of Dam and Water Supply Main
- 517-2 General Plan No. 2 – Distribution System
- 517-6 Right of Way Plan
- 517-7 York Creek Reservoir Layout and Capacity Details
- 517-8 York Creek Dam Structural Details
- 517-9 York Creek Dam Modifications

Site Survey Plan



Alberta

LICENCE to DIVERT AND USE WATER

ENVIRONMENT

Pursuant to Sections 11 and 33
THE WATER RESOURCES ACT

File No. 517

Priority No. 1910-09-19-01

Purpose Municipal

Drainage Basin Oldman River

First Issued 1920 01 07

Municipality of Crowsnest Pass
P.O. Box 370
Coleman, Alberta
TCK OMO

HAVING COMPLIED with the applicable provisions of The Water Resources Act and the regulations thereunder and Interim Licence No. * , a copy of which is attached hereto and incorporated herein,

IS HEREBY GRANTED LICENCE to divert and use the quantities of water prescribed in the Interim Licence in accordance with and subject to all other applicable provisions of that Act and the regulations thereunder, and the terms and conditions attached hereto and incorporated herein, at locations described in the Interim Licence,

BY MEANS AND THROUGH works and undertakings described in the Interim Licence.

* dated September 5, 1911

1983 08 16

Controller of Water Resources



ENVIRONMENT

UPDATED AND RE-ISSUED
INTERIM LICENCE

Pursuant to Section 18
THE WATER RESOURCES ACT

Issued to: Municipality of Crowsnest Pass
P.O. Box 370
Coleman, Alberta
TOK OMO

No. dated September 5, 1911

File No. 517

Priority No. 1910-09-19-01

This updated and re-issued Interim Licence particularizes the rights, privileges and obligations embodied in and associated with the original Interim Licence as numbered above, or with any other form of authorization or approval issued in connection with the project identified herein under any former applicable Act or regulation, and updates same to conform to and comply with the current Act, regulations and standards.

In particular this Interim Licence provides for the right to:

- A. Construct, maintain and operate works as shown on current plans and reports filed, approved and identified in departmental records as:

See attached list of approved plans & report

- B. Divert and use water as hereinafter specified and described subject to the terms and conditions attached hereto and incorporated herein:

PURPOSE: Municipal (urban water supply for Blairmore)

SOURCE OF SUPPLY: York Creek

POINT OF DIVERSION: NW 34-7-4-5

GROSS DIVERSION: Up to 250.0 acre-feet annually consisting of:

- 1. Estimated Consumptive Use: 25.0 acre-feet
- 2. Estimated Losses: 2.0 acre-feet
- 3. Estimated Return Flow: 223.0 acre-feet to Crowsnest River

RESERVOIR CAPACITY: 13.0 acre-feet

Date first issued 1911 09 05

Date re-issued 1983 08 16

Controller of Water Resources

First issued to the Village of Blairmore

Original—Department

Copy—Licensee

WR 2A (Aug/82)

TERMS AND CONDITIONS INTERIM LICENCE DATED SEPTEMBER 5, 1911

1. The licensee shall provide facilities for the release of water to riparians and prior licensees when requested to do so by the Controller of Water Resources.
2. The licensee is responsible for the operation and maintenance of the works and for any damages that may result therefrom.
3. The licensee shall submit an annual water use return to the Controller of Water Resources, Alberta Environment on or before January 31st in each year for the preceding calendar year showing:
 - (a) periods and rates of diversion;
 - (b) the total monthly quantity of water diverted;
 - (c) the total monthly quantity of water returned;
 - (d) the total annual quantity of water diverted;
 - (e) the total annual quantity of water returned;
 - (f) such other information as may be required from time to time.
4. The rights and privileges hereby granted are subject to periodic review and to modification to ensure the most beneficial use of the water in the public interest and more particularly to ensure preservation of the rights of other water users.
5. The rights and privileges hereby granted can only be extended or modified with the approval of the Controller of Water Resources and are subject to cancellation or modification as provided in the Water Resources Act.
6. Following completion of the works herein authorized this interim licence and its terms and conditions shall be attached to and become part of the licence to use water issued under the provisions of Section 33 of the Water Resources Act.

1983 08 16
Dated at Edmonton

V. Carlson
Controller of Water Resources

LIST OF APPROVED PLANS AND REPORTS - INTERIM LICENCE DATED SEPTEMBER 5, 1911

PLANS

<u>W. R. NO.</u>	<u>TITLE</u>
517-1	General Plan - Location of Dam and Water Supply Main
517-2	General Plan No. 2 - Distribution System
517-6	Right-of-way Plan
517-7	York Creek Reservoir Layout & Capacity Details
517-8	York Creek Dam Structural Details
517-9	York Creek Dam Modifications

REPORTS

<u>W. R. NO.</u>	<u>TITLE</u>
517-R1	York Creek Dam Assesment for the Town of Blairmore

1983 08 16
Dated at Edmonton



Controller of Water Resources

LICENCE No. Dated 1983 08 16
FILE No. 00517
PRIORITY No. 1910-09-19-001
EFFECTIVE DATE **MAR 0 6 2011**
AMENDMENT No. 00045622-00-01

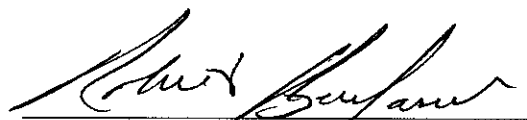
Municipality of Crowsnest Pass

The licence is amended as follows:

1. Delete condition 3 and substitute with the following:
 - 3.0 The Licensee shall:
 - (a) measure the total volume of water diverted on a monthly basis;
 - (b) monitor the rate of diversion on a daily basis; and
 - (c) measure the total volume of water returned to the water source on a monthly basis.
 - 3.1 The Licensee shall record and retain all of the following information for a minimum of 5 years after being collected:
 - (a) the place, date and time of all measuring and monitoring; and
 - (b) the results obtained pursuant to 3.0.
 - 3.2 The Licensee shall report to the Director the results of the measuring and monitoring required in 3.0 using the "Water Use Reporting System" and any other information required in writing by the Director.
 - 3.3 The Licensee shall submit the report required in 3.2 on or before the end of the month following the month in which the information is based upon was collected.
 - 3.4 "Water Use Reporting System" means the secure internet website provided by Alberta Environment at <http://www.environment.alberta.ca/1286.html> for submitting measuring and monitoring results electronically to the Director.

AMENDMENT

- 3.5 The licensee shall comply with the terms and conditions of the "Water Use Reporting System User Consent".



**Designated Director under the Act
Rob Burland**

FEB 04 2011

Dated (Y/M/D)

Application Form for Transfer of Water Allocation



PART 1A

EXISTING LICENCE

IMPORTANT: A LICENCE MUST BE IN GOOD STANDING TO BE ELIGIBLE FOR TRANSFER (SEE SECTION 1B).

EXISTING LICENSEE INFORMATION

Name or Company Name: Municipality of Crowsnest Pass [Patrick Thomas]		Home Telephone: n/a
Address (Street, PO Box, etc.): PO Box 600, Crowsnest Pass, AB T0K 0E0.		Bus. Telephone: 403- 562-8833
		Fax: 403 563-5474
Place, Province: Crowsnest Pass, Alberta	Postal Code: T0K 0E0	Email: patrick.thomas@crowsnestpass.com

CONTACT PERSON FOR LICENSEE (IF DIFFERENT FROM ABOVE)

Name or Company Name:		Home Telephone:
Address (Street, PO Box, etc.):		Bus. Telephone:
		Fax:
Place, Province:	Postal Code:	Email:

EXISTING LICENCE INFORMATION

Licence Number*:0004562-00-01	File Number: 517
Approved Plan Numbers*: 517-1, 517-2, 517-6, 517-7, 517-8, 517-9	
Purpose: Municipal (urban water supply for Blairmore)	Source: York Creek (NW 34-7-4-W5M)

* Attach copies (e.g., licence, interim licence, licence amendments, approved plans, etc.)

Is the licence the result of a previous transfer where the transferred allocation is to revert back to the original licence? Yes No If yes, attach relevant documentation describing the temporary transfer.

PROPOSED TRANSFER INFORMATION

The proposed transfer is: Permanent Temporary

If temporary, describe the terms of the transfer:

Date of expiry for the temporary transfer: December 31, 2042
Additional terms of the temporary transfer:

The proposed transfer is for: the entire allocation a portion of the allocation

Application Form for Transfer of Water Allocation



Describe the allocation to be transferred:

Priority Number: 1910-09-19-01
Quantity of water to be transferred (indicate units): 203 acre-feet annually
Rate of diversion to be transferred (indicate units): n/a
Second priority number (if applicable): n/a
Quantity of water to be transferred (indicate units):
Rate of diversion to be transferred (indicate units):

I hereby certify that I have read and understand the above information, it is correct to the best of my knowledge, and I agree to the above allocation of water being transferred.

14/09/17 Patrick Thomas *Patrick Thomas* Municipality of Crowsnest Pass
Date (dd/mm/yy) Print Name Signature Company Name

PART 1B

EXISTING LICENCE

CERTIFICATION OF LICENCE IN GOOD STANDING

Complete and attach a Licensee Declaration Document.

PART 2

PROPOSED LICENSEE

PROPOSED LICENSEE INFORMATION

Name or Company Name: Benga Mining Ltd.		Home Telephone:
Address (Street, PO Box, etc.): PO Box 660, 12331 – 20 Ave		Bus. Telephone: 403-753-5160
		Fax:
Place, Province: Blairmore, AB	Postal Code: TOK OE0	Email: Cal.Clark@rivresources.com

CONTACT PERSON FOR LICENSEE (IF DIFFERENT FROM ABOVE)

Name or Company Name: Cal Clark,		Home Telephone:
Address (Street, PO Box, etc.): PO Box 660, 12331 – 20 Ave,		Bus. Telephone: 403-563-6455
		Fax:
Place, Province: Blairmore, AB	Postal Code: TOK OE0	Email: Cal.Clark@rivresources.com

PROPOSED LICENCE INFORMATION

Point of diversion (legal land description): SW-024-008-04-W5M, raw water pond collects surface runoff and seepage within the Fence-line approval area
Point(s) of use (legal land description): within the Grassy Mountain Mine Permit area/fence-line approval
Source: Precipitation that would ordinarily report to Blairmore Creek and Gold Creek
Purpose: Coal Mine Landscape re-contouring, coal washing and mine operations
Annual quantity to be transferred (indicate units): 203 acre feet
Rate of diversion to be transferred (indicate units): n/a
Proposed rate of diversion if more/less than transferred rate of diversion (indicate units)

The proposed transfer is: Permanent Temporary

If temporary, describe the terms of the transfer:

Date of expiry for the temporary transfer: December 31, 2042
Additional terms of the temporary transfer:

FOLLOWING INFORMATION IS REQUIRED

- Description of the construction or development required for the proposed project. This includes tentative starting date, phases of construction, etc. (can be described in the space provided below).
- Detailed plans for the proposed project.
- Written consent from the owner of the appurtenance(s). This includes any land or undertakings the licence is appurtenant to.
- Written consent to access other land(s) which the licence is not appurtenant to. This includes access to the point of diversion, access to adjacent lands, road allowances, use of works agreements, conveyance agreements, etc.
- Status of other permits/authorizations with other agencies, e.g. municipal, provincial, federal (optional).
- Water Shortage Response Plan.

DESCRIPTION OF ACTIVITIES RELATING TO THE PROJECT:

Benga currently owns the lands where the raw water pond is proposed to be constructed.

The transferred allocation will be used for make-up water that is required for the coal wash plant and other components of the project. The transfer of allocation from the York Creek site will be one of three allocations required to licence the projects water needs.

Benga requests the term of the transferred licence to be 25 years+ from the start date of the project on January 1, 2018 to ensure the viability of the project once started. If the time were shorter and the licence not renewed it would be impossible to complete the reclamation of the mine site.

Benga requests the 10% holdback not be taken in this transfer because the entire allocation is being moved downstream a considerable distance and there will be no impacts on downstream users and no impacts to the environment.

To protect the aquatic environment or to implement a water conservation objective, I understand that Director may withhold up to 10% of the transferred amount of water.

I hereby certify that I have read and understand the above information and it is correct to the best of my knowledge.

23/08/2017
Date (dd/mm/yyyy)

Cal Clark
Print Name


Signature

Benga Mining Limited
Company Name



Photo 1 – Dam Structure on York Creek

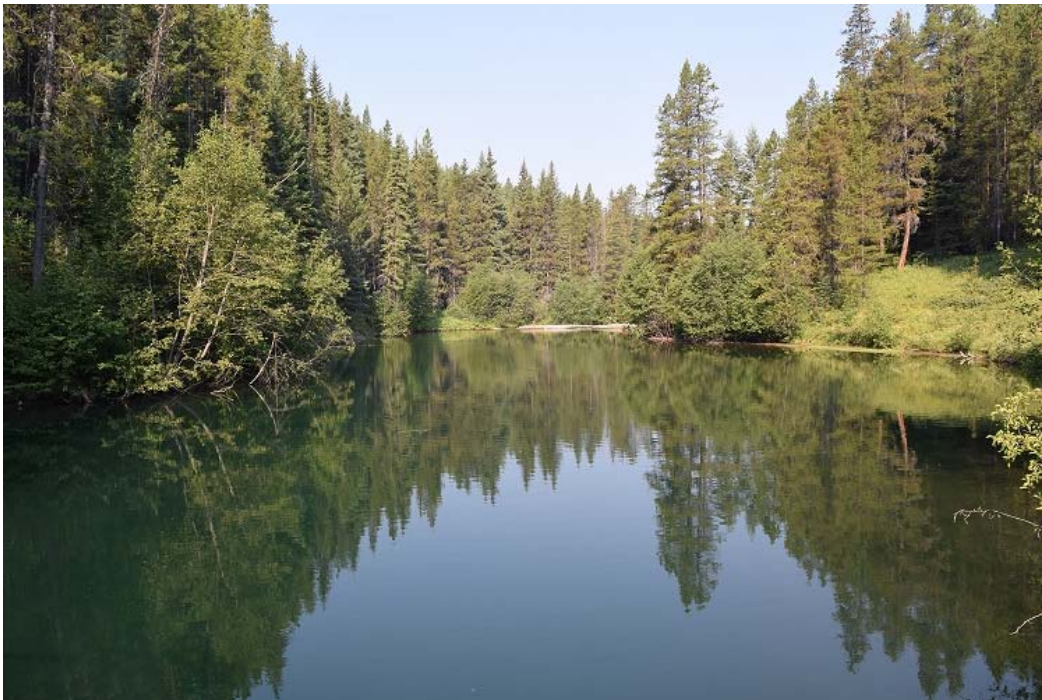


Photo 2 – Reservoir Backed Up by Dam on York Creek



Photo 3 – Drop Structure and Water Release From Dam

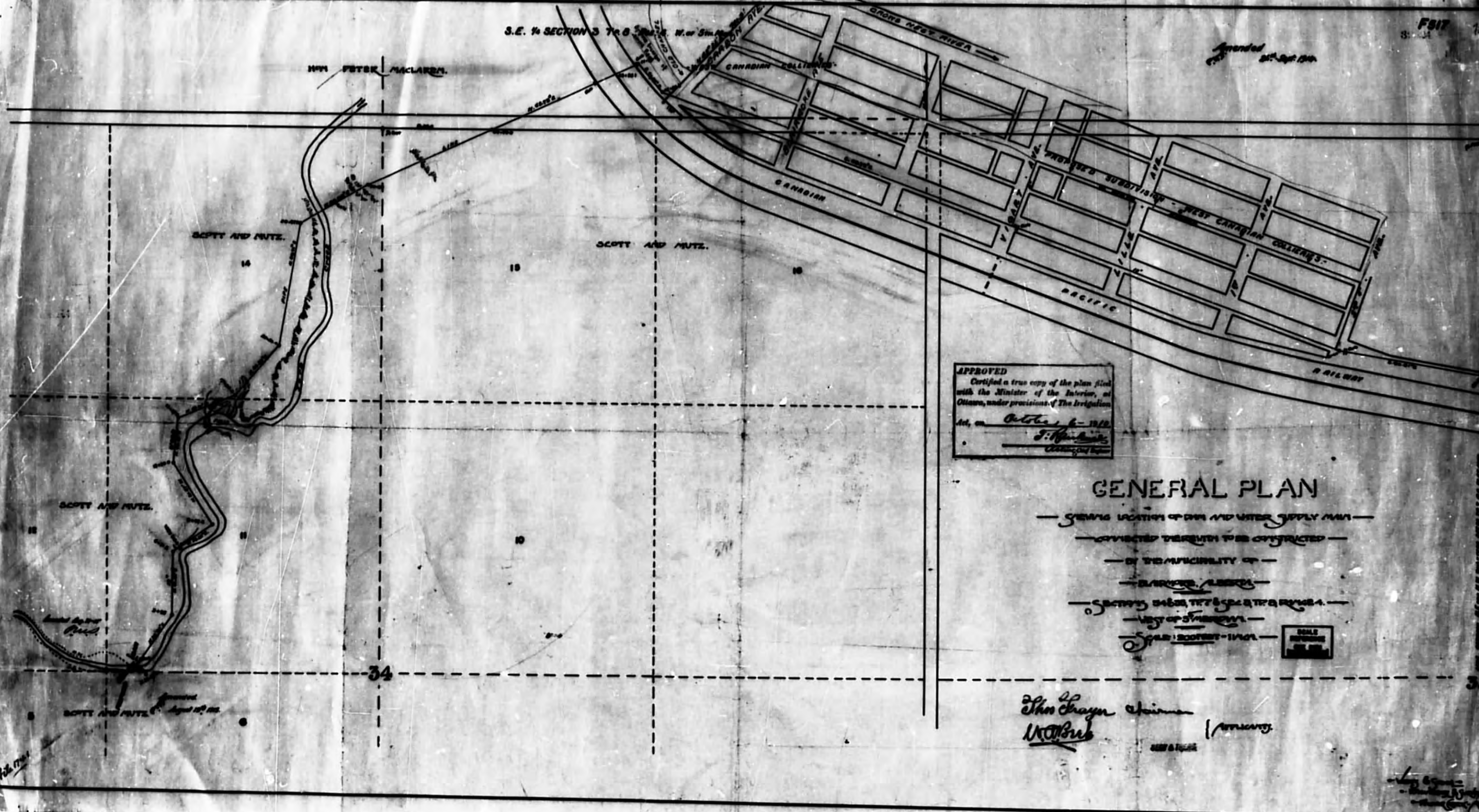


Photo 4 – Part of the existing York Creek diversion system

Amended
21st Sept 1910

S.E. 1/4 SECTION 3 T.8 R.10

Wm PETER McCLAREN.



APPROVED
 Certified a true copy of the plan filed
 with the Minister of the Interior, at
 Ottawa, under provisions of The Irrigation
 Act, on October 6 - 1910
J. H. [Signature]
 Acting [Title]

GENERAL PLAN

- SHOWING LOCATION OF DAM AND WATER SUPPLY MAIN —
- CONSTRUCTED THEREWITH TO BE CONSTRUCTED —
- BY THE MUNICIPALITY OF —
- BARRETT, ALBERTA —
- SECTION 34, T. 8, R. 10, S. 14 —
- DISTRICT OF SERRAVALLO —
- SCALE: 1 INCH = 100 FEET —

John Gray Chairman
W. A. [Signature] Secretary

1/2 1/2

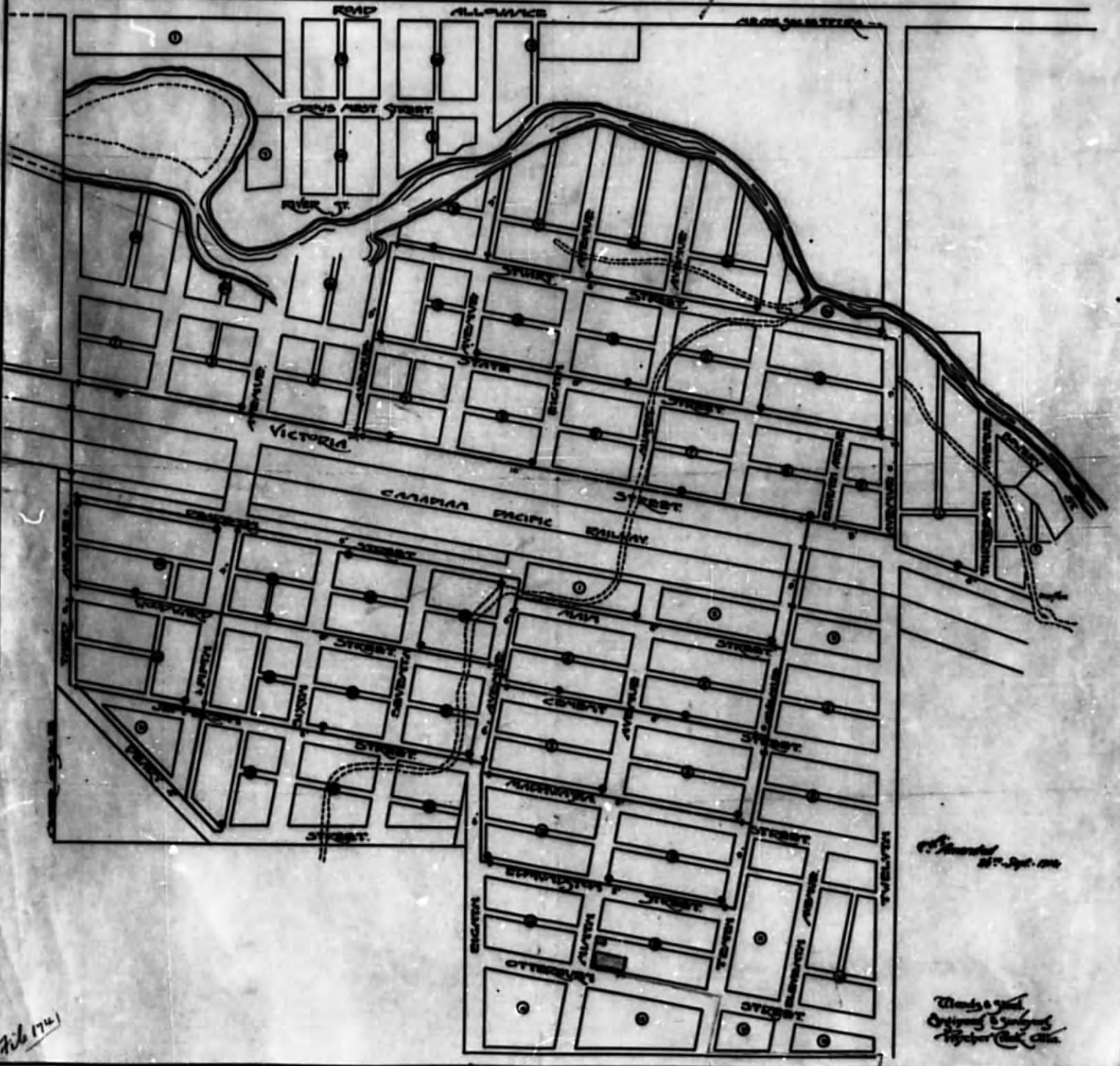
[Handwritten notes]

APPROVED
 Certified a true copy of the plan filed
 with the Minister of the Interior, at
 Ottawa, under provisions of The Irrigation
 Act, on October 6-1910
J. H. Perkins
 Consulting Engineer

GENERAL PLAN NO 2

FS17

SHOWING DISTRIBUTION SYSTEM IN CONNECTION WITH DRAINAGE
 WATER SUPPLY MAIN TO BE CONSTRUCTED BY THE
 MUNICIPALITY OF BLAINVILLE
 SECTION IN T. 1. RANGE 4
 JOB: IMPROVEMENT



J. H. Perkins
 27-Sept-10

Woods & Sons
 Drafting & Surveying
 115-117-119

File 1741

To be approved

S.E. 1/4 SEC. 3, T. 8, R. 24 E.

AND F. W. CLARK
1897-1898 Cont.

JOHN W. WATKINS

RIGHT OF WAY 1870-1887 Cont.

ELMER W. FLETCHER
RIGHT OF WAY 1871-1880
18-82 Cont.

ELMER W. FLETCHER
RIGHT OF WAY 1871-1880
18-82 Cont.

ELMER W. FLETCHER
RIGHT OF WAY 1871-1880
18-82 Cont.

Created a true copy of the plan filed in
Land Titles Office for the South Alberta
and Registration District of Calgary
under provisions of Section 112, 113
The Irrigation Act, on August 23, 1911
F.H.P. [Signature]
Clerk

IRR. 182

ELMORE WATERWORKS PLAN

RIGHT OF WAY OF PIPE LINE FROM INTAKE
TO CANADIAN PACIFIC RAILWAY THROUGH
SECTION 34, T. 8, R. 24 E. AND SW CORNER
SECTION 35, T. 8, R. 24 E.
WEST OF FIFTH MERIDIAN
1870-1887 Cont.

I certify the within to be a true and
correct copy of Instrument No. 1172
filed in the Land Titles Office and
for the Land Registration District of
Southern Alberta in Book
No. 235 at 11:22 o'clock AM
on the 13th day of
September 1911
D. W. [Signature]
Registrar
S. A. L. R. D.

I hereby certify that the within is a true and
correct copy of the plan filed in the
Land Titles Office for the South Alberta
and Registration District of Calgary
under provisions of Section 112, 113
The Irrigation Act, on August 23, 1911
at 11:22 o'clock AM
of the 13th day of September 1911
in the presence of
R. Woods
[Signature]

Randi

I hereby certify that the within is a true and
correct copy of the plan filed in the
Land Titles Office for the South Alberta
and Registration District of Calgary
under provisions of Section 112, 113
The Irrigation Act, on August 23, 1911
at 11:22 o'clock AM
of the 13th day of September 1911
in the presence of
R. Woods
[Signature]

Randi

Tracy
Proprietor of the Village of Hainault
The Tracy Bros
W. A. [Signature] [Signature]

I, F. M. [Signature] of the Town of Hainault in the County of
[Signature] do hereby certify that the within is a true and
correct copy of the plan filed in the Land Titles Office for the
South Alberta and Registration District of Calgary under provisions
of Section 112, 113 The Irrigation Act, on August 23, 1911 at
11:22 o'clock AM of the 13th day of September 1911 in the
presence of
R. Woods
[Signature]

Franco [Signature]

File 1172

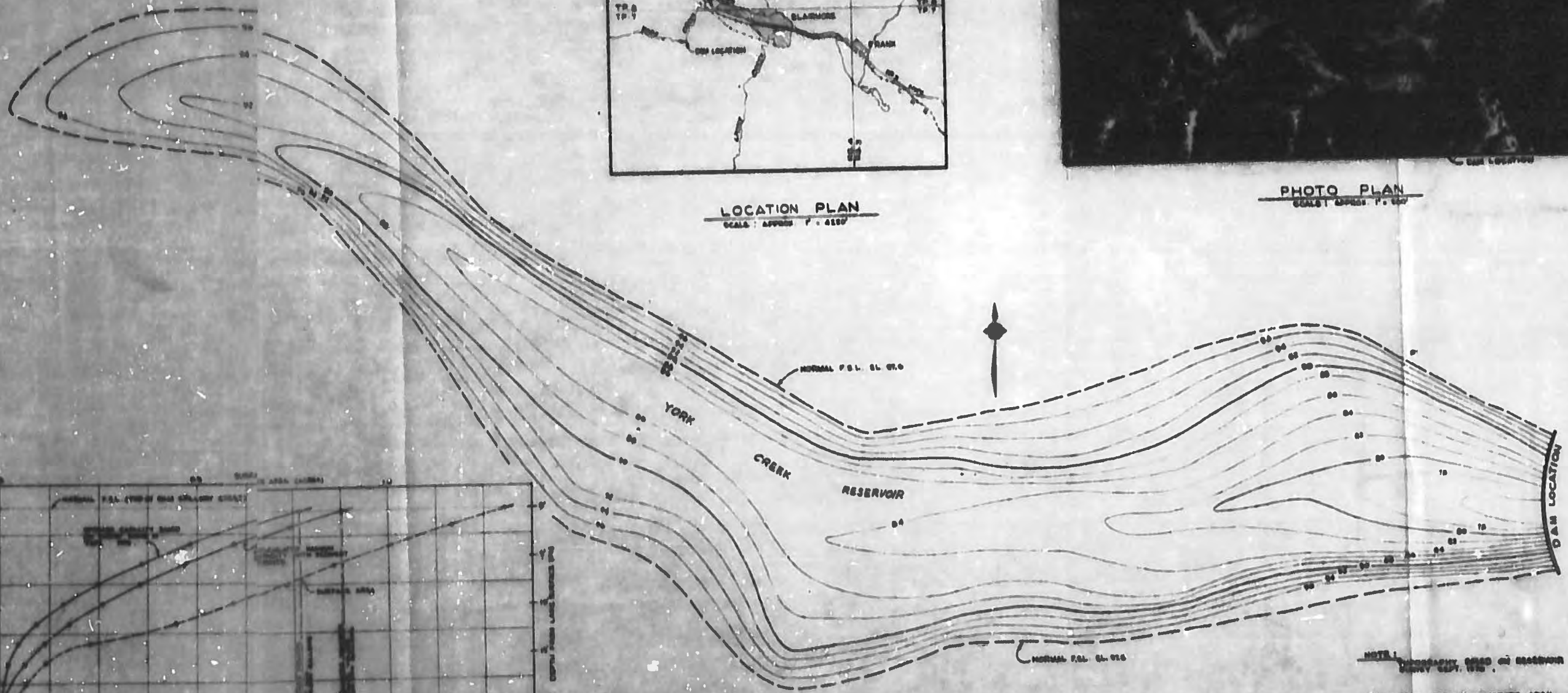
PLAN NO. 5175
 THIS DRAWING FORMS PART OF AN APPROVED WATER WORKS PLAN UNDER SECTION 827
 APPROVED BY [Signature]
 REVISED BY [Signature]
 APPROVED BY [Signature]



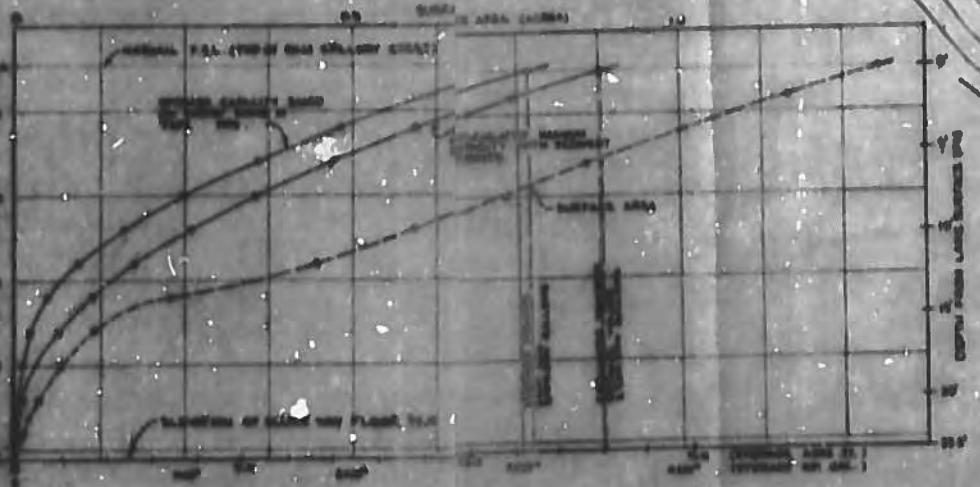
LOCATION PLAN
 SCALE: APPROX. 1" = 4000'



PHOTO PLAN
 SCALE: 1" = 500'



TOPO PLAN
 SCALE: 1" = 50'



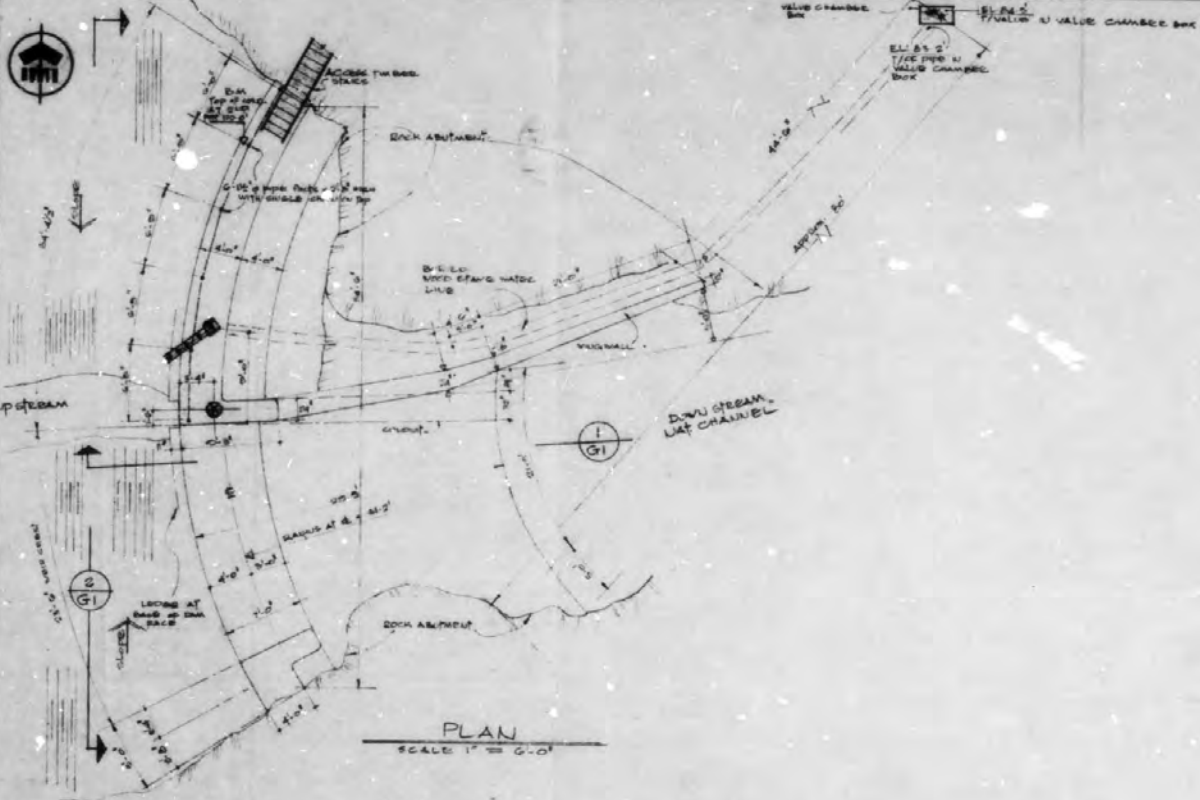
STORAGE-AREA CURVE

NOTE 1: TOPOGRAPHY USED ON RESERVOIR
 DURING SEPT. 1935.
 NOTE 2: TOP OF CONCRETE DAM
 TO BE 10' ABOVE HIGHEST
 ELEVATION 90.0 (ASSUMED)

RECEIVED
 ALBERTA ENVIRONMENT
 1934 5 1935

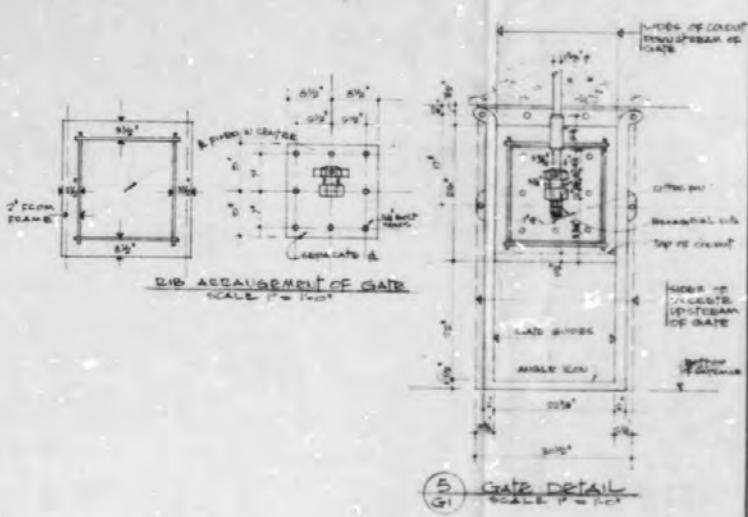
TOWN OF BLAIRMORE
 YORK CREEK RESERVOIR
 LAYOUT & CAPACITY DETAILS

UNDERWOOD McLELLAN & ASSOCIATES LIMITED
 CONSULTING ENGINEERS - CIVIL ENGINEERS
 1000 - 10th Avenue S.W. - Calgary, Alberta
 RECEIVED
 ALBERTA ENVIRONMENT
 1934 5 1935



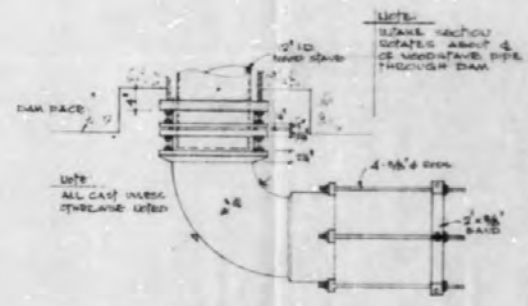
PLAN
SCALE 1" = 60'

Note:
DIMENSIONS BASED ON FIELD MEASUREMENTS MADE ON SEPTEMBER 23RD 1976

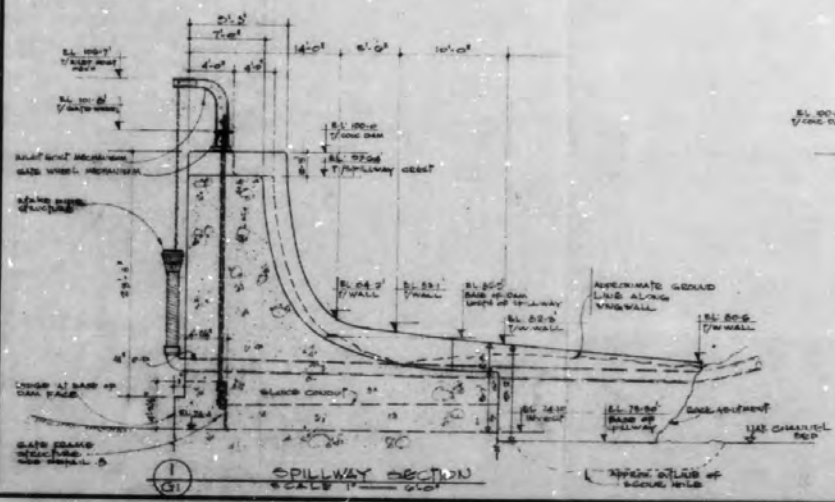


RID ARRANGEMENT OF GATE
SCALE 1/4" = 1'-0"

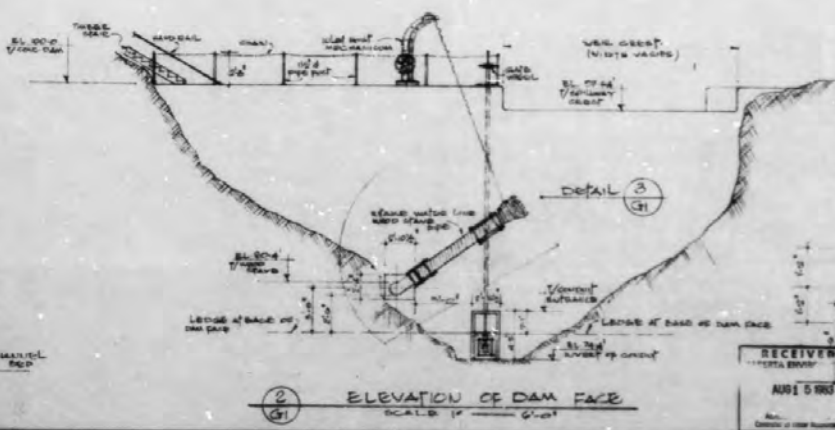
5 GATE DETAIL
SCALE 1/4" = 1'-0"



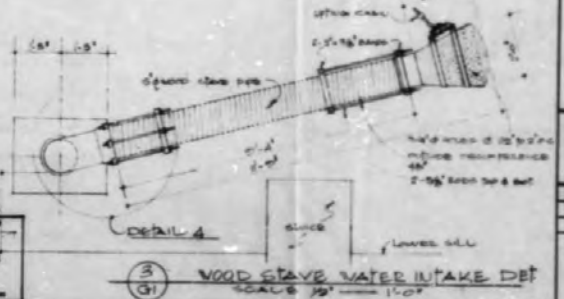
4 INTAKE ELBOW DETAIL
SCALE 1/4" = 1'-0"



1 SPILLWAY SECTION
SCALE 1" = 60'



2 ELEVATION OF DAM FACE
SCALE 1" = 60'



3 WOOD STAVE WATER INTAKE DETAIL
SCALE 1/4" = 1'-0"

PLAN NO. 100
AS SHOWN
REVISED BY

REVISIONS

NO.	REVISION	DATE	BY

TOWN OF BURLINGTON
YORK GREEN
STRUCTURAL DESIGN

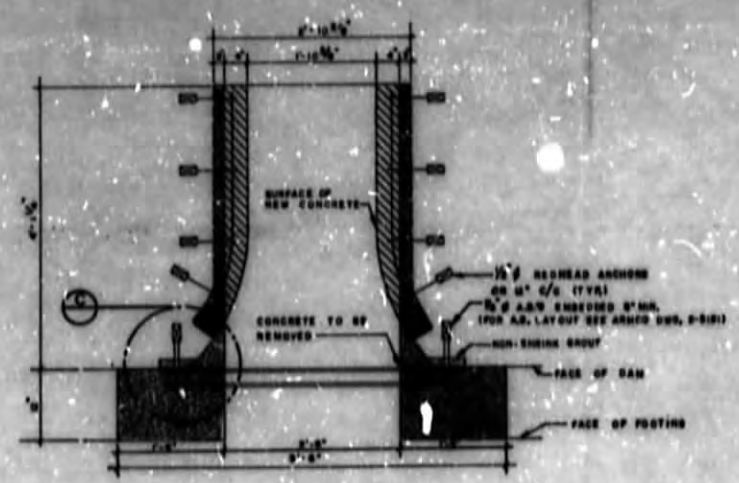
UNDERWOOD McLELLAN & ASSOCIATES LIMITED
CONSULTING ENGINEERS
1000 BROADVIEW AVENUE, SUITE 100, BURLINGTON, ONTARIO L7R 4K6

RECEIVED
MAY 5 1980
MAY 5 1980

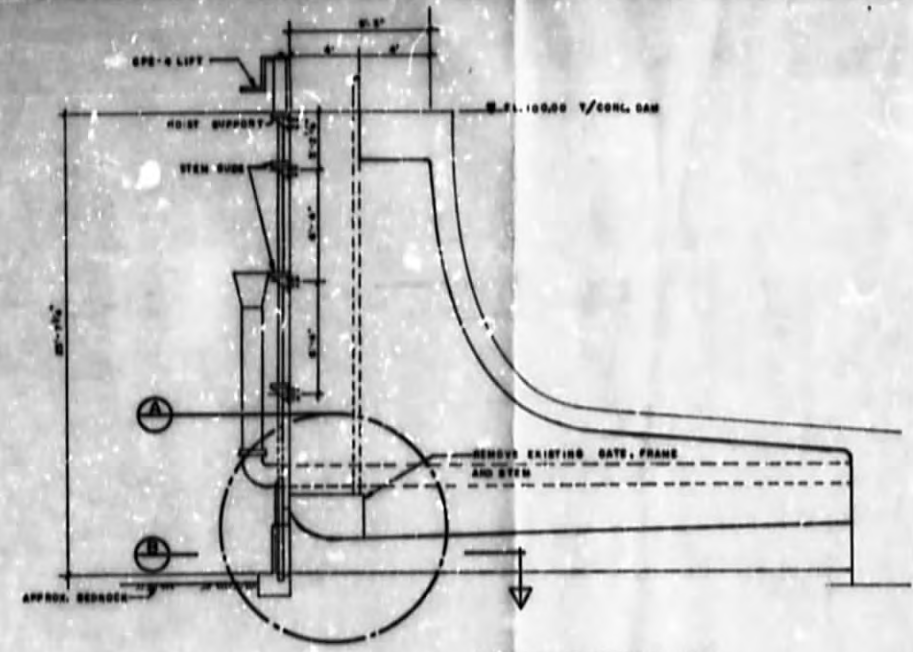
DEVELOPED BY
PROFESSIONAL ENGINEER
OF ALBERTA
PERMIT NO. 1000
P.O. 257
EDMONTON, ALBERTA
T6C 2E5

AS UTD

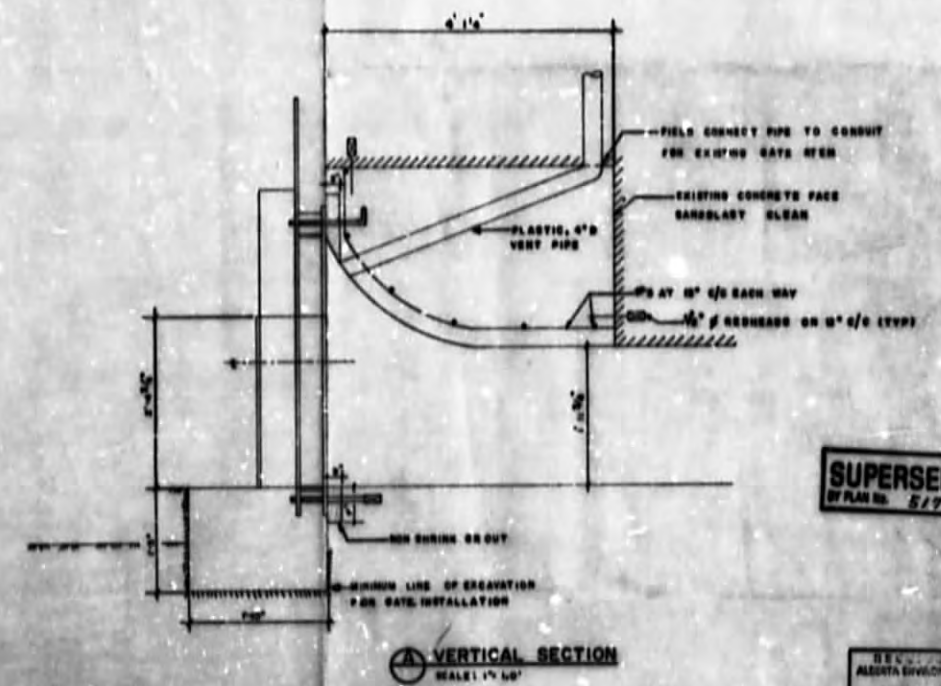
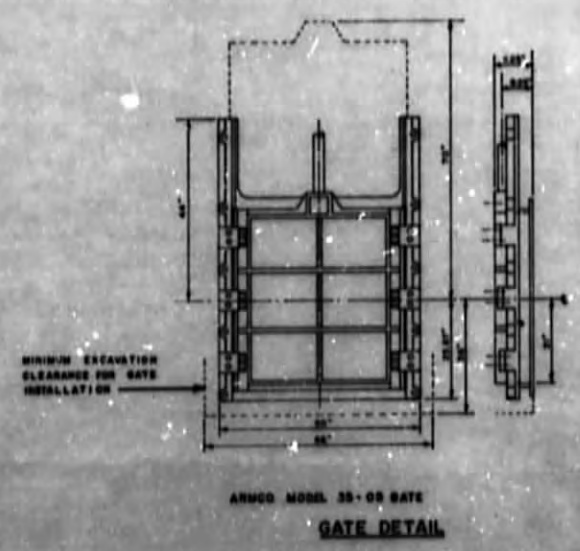
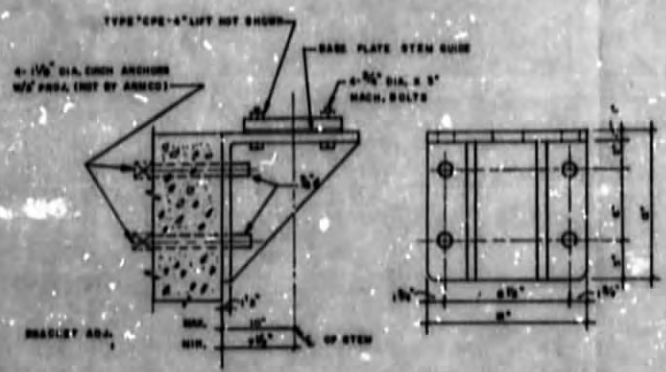
MICROFILMED
 JUNE 1975
 NORTH OREGON
 WATER SERVICE



PLAN SECTION
 SCALE: 1" = 10'



SECTION THROUGH DAM
 SCALE: 1" = 4'-0"



VERTICAL SECTION
 SCALE: 1" = 10'

SUPERSEDED
 BY PLAN NO. 517-5

DESIGNED BY
 ALBERTA DEVELOPMENT
 1981.0.1001

NO.	DATE	REVISION	BY	CHKD BY



Underwood McLeellan Ltd.
 Consulting Engineers and Planners
 Calgary, Alberta



DESIGNED BY
 CHECKED BY
 DRAWN BY
 SCALE
 AS SHOWN

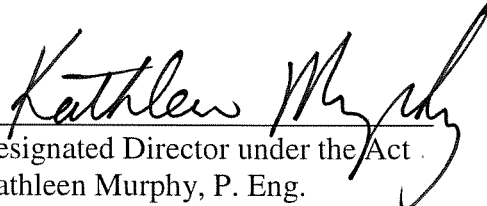
THE MUNICIPALITY OF CROWSNEST PASS
 YORK CREEK DAM MODIFICATIONS

NO. 02/03/81
 SHEET NO. 63
 OF 63

WATER ACT
Certification for Licence In Good Standing
File 00517 Municipality of Crowsnest Pass
Licence No. dated 1983 08 16

CERTIFICATION STATEMENT

Based on a review of records contained in File 00517, on this date **Licence No. dated 1983 08 16** is in good standing.



Designated Director under the Act
Kathleen Murphy, P. Eng.

OCT 17 2017

Date

LICENCE AMENDMENT

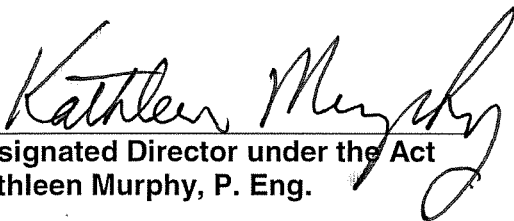
PURSUANT TO THE PROVISIONS
OF THE WATER ACT

LICENCE No. Dated 1983 08 16
FILE No. 00517
PRIORITY No. 1910-09-19-001
AMENDMENT No. 00045622-00-02

Municipality of Crowsnest Pass

The licence is amended as follows:

- To correct a clerical error and add the maximum rate of diversion:
At flood stage 3.70 cubic feet per second
At high water stage 0.74 cubic feet per second
At low water stage 0.37 cubic feet per second


Designated Director under the Act
Kathleen Murphy, P. Eng.

OCT 17 2017
Dated