

March 31, 2022

Project No. 21455283 (1000)

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**2021 ANNUAL FACILITY PERFORMANCE REVIEW REPORT
DUCK POND OPERATIONS TAILINGS MANAGEMENT FACILITY**

Dear Darren:

The attached report provides the results of the 2021 annual facility performance review for the Tailings Management Facility (TMF) at the Duck Pond Operations. The facility inspection was completed by the Engineer of Record, Peter Merry, P.Eng. on August 17, 2021. The results of the facility inspection were discussed with mine personnel immediately following the site visit. This is a final report based on feedback from Teck on the draft version.

We trust that this report satisfies your current requirements. If you have any questions regarding this report, or require additional information, please do not hesitate to contact us.

Golder Associates Ltd.



Peter Merry, P.Eng.
Senior Principal Mine Waste Engineer

WPM/

CC: Andrew Thrift (Teck), Siavash Farhangi, David Brown (Golder)

Attachments: 2021 Annual Facility Performance Review Report; Reference No. 21455283-001-R-Rev0-1000

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ATTACHMENT 1

**2021 Annual Facility Performance
Review Report; Reference No.
21455283-001-R-Rev0-1000**



REPORT

2021 Annual Facility Performance Review Report

Duck Pond Operations Tailings Management Facility

Submitted to:

Teck Resources Limited

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Submitted by:

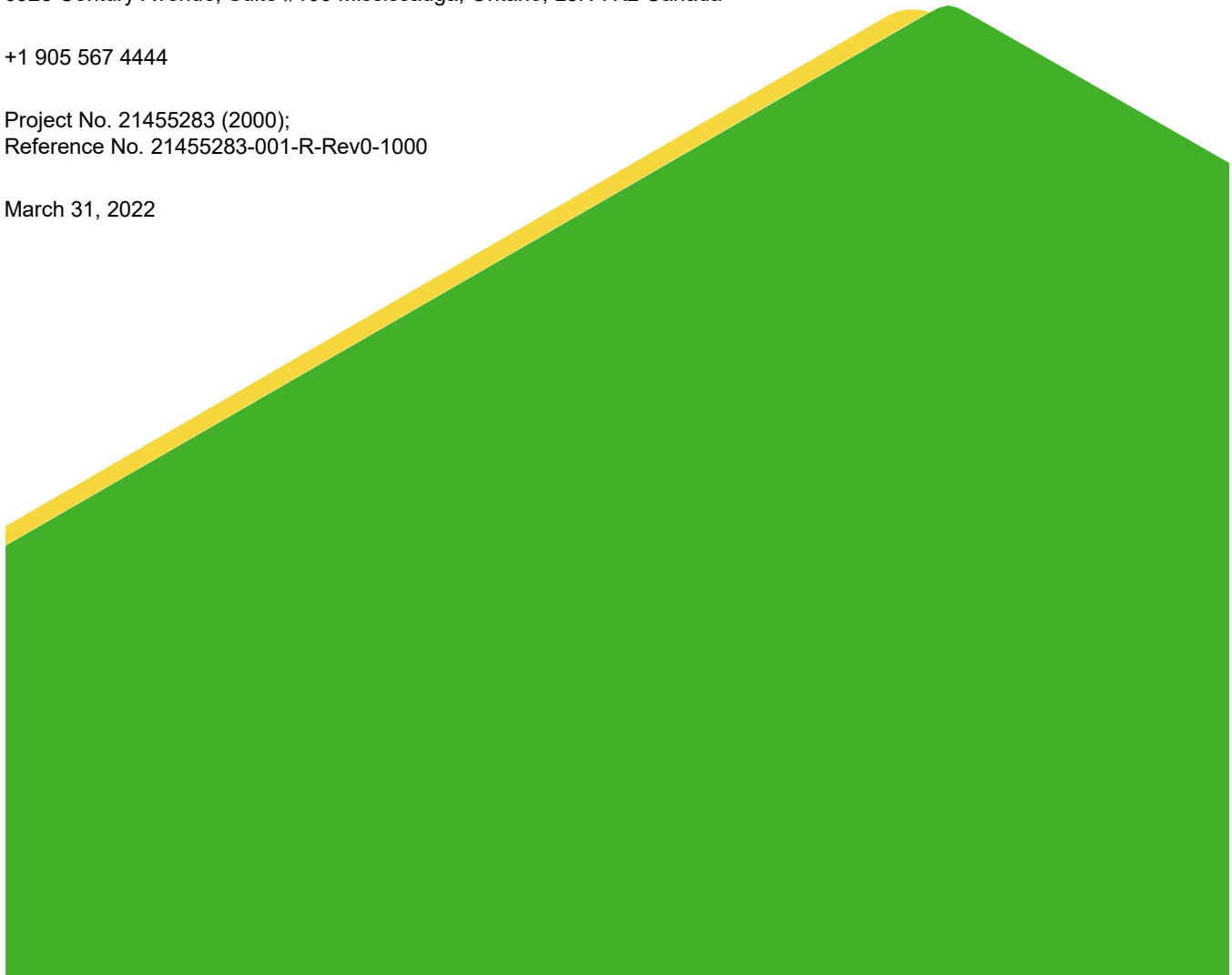
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Project No. 21455283 (2000);
Reference No. 21455283-001-R-Rev0-1000

March 31, 2022



Distribution List

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Executive Summary

This report presents the results of the 2021 annual facility performance review (AFPR) for the Teck Resources Limited (Teck), Duck Pond Operations (DPO), Tailings Management Facility (TMF) structures. This report was prepared based on a site visit carried out by the Engineer of Record, Peter Merry of Golder Associates Ltd. (Golder), on August 17, 2021 and a review of the available monitoring and maintenance records.

Description of Facility and Dams

The TMF is located adjacent to the plant site and consists of two components, the Tailings Management Area (TMA) and the Polishing Pond. The TMA is contained by natural ground and two containment dams (Dams A and B). The Polishing Pond is located about 500 m west of the TMA where containment is provided by Dam C at the western end of the pond.

All three perimeter containment dams around the TMF are zoned earthfill embankments incorporating a thick central core of relatively low permeability glacial till, keyed into the glacial till foundation soils, as a seepage barrier. A filter zone is provided adjacent to the downstream face of the core to prevent internal erosion (piping) of the core material under seepage pressures. The core and filter zones are supported by upstream and downstream shells of compacted, free draining granular materials. Internal drainage systems are designed to promote drainage of the downstream shell. Emergency spillways at Dam B in the TMA and Dam C at the Polishing Pond are designed to protect the dams from overtopping during extreme flood events.

The TMF is currently in a transition period which is the first stage of reclamation and closure. At the time of the inspection, the water level in the TMA was below the minimum operating water level to facilitate placement of contaminated soils within the TMA as part of reclamation activities. Construction of the internal berms within the TMA was completed in late 2017. The internal berms across the TMA are rockfill embankments designed to reduce the fetch length and required water cover depth to prevent the long-term re-suspension of the tailings.

Summary of the Annual Facility Inspection

The TMF dams appeared to be in a good condition at the time of the site visit and the facility was performing well. A well-established maintenance program exists on site and there has been significant effort in recent years to close out recommendations from previous annual facility performance reviews. Minor deficiencies noted during the inspection are not considered to be indicative of poor performance. The structures should continue to function as intended, provided they are routinely inspected and maintained.

A summary of the findings and recommendations from the 2021 AFPR are provided in Table E1.

Table E1: Summary of the 2021 Annual Facility Performance Review Recommendations

Structure	ID Number	Deficiency or Non-Conformance	Recommended Action	Status	Priority ⁽¹⁾
General	2018-02	Shrubs larger than 1 m in height were cleared from most structures on site in 2018 (except those locations specifically mentioned below). Another round of clearing is likely required in 2020 to allow continued visual observations of the structures.	Additional clearing was carried out in 2019. Plan another round of clearing for all structures around the TMF in 2021.	Closed – vegetation was cleared in 2021 with the exception of the downstream shell of Dam A (addressed as a new action item below).	4
Polishing Pond	2018-12	Sediment accumulation in the Polishing Pond may reduce its storage capacity.	A bathymetric survey and sampling program should be carried out in the Polishing Pond to determine the degree of sediment accumulation and remaining available capacity in the pond.	Closed – Teck completed a sampling program (executed by Wood) in the Polishing Pond in 2021 to determine if any sludge has accumulated at the base of the pond. The results identified elevated concentrations of some metals. The accumulated sludge will need to be capped for Passive Closure or relocated to the TMA. An allowance for managing the sludge has been included in the site Closure Plan and this item is considered.	3
Dam C	2018-13	Minor rusting was observed around the inlet of the Decant Structure on Dam C.	The structure should be monitored for changing conditions that might affect its integrity.	Ongoing – No change in the condition of the structure in recent years.	3
Diversion Ditches	2018-15	A pipeline crossing was constructed in the winter of 2012/2013 across Diversion Ditch A2 at Sta. 0+350. The pipeline crossing includes a 0.3 m diameter HDPE culvert through the diversion ditch. The culvert is likely too small to convey the design storm flow and appears to be partially blocked with sediment and vegetation. However, the diversion ditch would not be overtopped under the design storm event as there is sufficient freeboard above the crossing to the top of bank on the diversion ditch.	The pipeline crossing should be monitored closely and repaired if damaged.	Ongoing – No observed change in the condition of the structure in recent years.	4
TMF	2019-01	Additional flows will be entering the TMA from Boundary site and the underground workings.	Once the flows from the underground workings and Boundary site are better understood, the TMF water balance should be reviewed and updated for impacts on water levels and discharge rates.	Open – A review of annual discharge volume to the environment indicates the current water balance is underestimating the amount of water to be managed on site. Teck plans to initiate a study to update the water balance in 2022.	3
Dam B	2020-01	A low area at the north abutment of Dam B was identified between the crest and spillway that may be lower than the crest elevation.	A topographic survey of the area should be completed to confirm the crest elevations and freeboard is maintained.	Closed – Teck completed a survey in 2021 (included in Appendix B) which confirms the dam crest elevation (279.0m) is maintained from the north abutment through the Dam B Emergency Spillway.	3
General	2020-02	A large amount of ponded water was observed along the downstream toe of Dams A, B, and C during the inspection.	Drainage could be improved to prevent ponding water.	Closed – Seepage collection ditches were cleared of debris and vegetation at Dam A and Dam C in 2021. Elimination of ponding water at the toe of Dam B is not possible given the local topography and swamp in the area.	4
Piezometers	2020-03	Piezometers are present on the crest of Dams A, B, and C. Four of the piezometers have experienced water levels up to the dam crest elevation. The surface casings on all piezometer nests were raised in 2019 to prevent the ingress of surface runoff. Since the raise, three of the piezometers have begun to return to historical levels while one is still experiencing higher levels. The piezometer data should be reviewed.	Teck should continue to monitor the piezometers on Dams A, B, and C monthly during non-freezing conditions and provide the data to Golder for review during the annual facility inspection.	Closed – While the piezometers must continue to be monitored monthly during non-freezing conditions as part of routine monitoring, this item is being removed from the list of specific recommendations.	3
Spillways	2020-04	Spillways observed to be generally clear with some vegetation present during the inspection.	Ongoing maintenance should include routine clearing in the spillway channels to maintain their flow capacity and permit visual inspection. Another round of vegetation clearing is required in 2021.	Closed – the spillways were cleared of vegetation in 2021.	4
Diversion Ditches	2020-05	The Diversion Ditch C1 CSP culvert beneath the mine access road is partially filled with debris, significantly reducing its capacity.	The culvert should be cleared of the debris.	Closed – the culvert was replaced with an HDPE pipe in 2021.	3

Table E1: Summary of the 2021 Annual Facility Performance Review Recommendations

Structure	ID Number	Deficiency or Non-Conformance	Recommended Action	Status	Priority ⁽¹⁾
General	2021-01	Shrubs larger than 1 m in height were cleared from all structures around the TMF in 2021, with the exception of the downstream shell of Dam A.	Clear vegetation from the downstream shell of Dam A in 2022 and plan another round of clearing of all structures around the TMF in 2023 to allow continued visual observations of the structures.	Open	4
Settlement Plates	2021-02	Settlement plate 18-01 on Dam A raised 68 mm since the last reading in 2020 although no visible movement was observed.	Settlement plate 18-01 should be re-surveyed to determine if the measurement obtained in 2021 is correct and the data should be provided to Golder for review.	Open	3
Dam C	2021-03	The drain valve on the Hydraulic Discharge Structure has corroded and is difficult to open and close	The drain valve should be replaced to maintain a tight seal.	Open	4
General	2021-04	The OMS Manual was last updated in 2020. The OMS Manual will require a detailed review and update once the mill has been demolished and all contaminated soils placed within the TMA.	Update the OMS Manual in late 2022.	Open	4

Legend:

Priority	Description
1	A high probability of actual dam safety issue considered immediately dangerous to life, health, or the environment, or a significant risk of regulatory enforcement.
2	If not corrected, could likely result in a dam safety issue leading to injury, environmental impact or significant regulatory enforcement; or a repetitive deficiency that demonstrates a systematic breakdown of procedures.
3	Single occurrences or deficiencies or non-conformances that alone would not be expected to result in a dam safety issue.
4	Best Management Practice – Further improvements are necessary to meet industry best practices or reduce potential risks.

1) Source: British Columbia Health, Safety and Reclamation Code Guidance document, Section 4.2 (MEM 2016).

Table of Contents

1.0 INTRODUCTION	1
2.0 FACILITY DESCRIPTION.....	2
3.0 INSPECTION PROCEDURES	5
4.0 GENERAL COMMENTS AND OBSERVATIONS	6
5.0 FINDINGS AND RECOMMENDED ACTIONS	11
6.0 CLOSING	14
REFERENCES	15

TABLES

Table 1: Summary of Structures Inspected	5
Table 2: Summary of the 2021 Annual Facility Performance Review Recommendations.....	12

FIGURES

Figure 1: Site Location Plan	19
Figure 2: General Arrangement Plan.....	20
Figure 3: Dams A and B Instrumented Cross-Sections.....	21
Figure 4: Dam C Instrumented Cross-Section and Internal Berm Typical Cross-Section	22

APPENDICES

APPENDIX A

Completed Inspection Report Forms

APPENDIX B

Dam B Survey Data

1.0 INTRODUCTION

The Teck Resources Limited (Teck) Duck Pond Operations (DPO) is located approximately 30 km south of the community of Millertown, in west central Newfoundland (see Figure 1). Golder Associates Ltd. (Golder) completed detailed engineering for the Tailings Management Facility (TMF) in early 2006 (Golder, 2006) and construction of the facility was completed in late 2006. SGE Acres Limited (SGEA), now a part of the Hatch group of companies, provided construction management and Quality Assurance inspection and testing services during the TMF construction. Golder made periodic site visits during construction and provided engineering support on an as required basis to SGEA. The results of Quality Assurance inspection and testing by SGEA are provided in the as-built report for the TMF (SGEA, 2007). The mine operated between 2007 and 2015 and the TMF is currently in a transition period which is the first stage of reclamation and closure.

Golder was retained by Teck to complete the 2021 annual facility performance review (AFPR) for the TMF at DPO. Prior to 2021, the AFPR was referred to as an annual inspection or dam safety inspection. The first AFPR of the TMF was completed in 2007 by Golder and the most recent comprehensive Dam Safety Review (DSR) was completed by GEMTEC Limited in 2016 (GEMTEC, 2017). The primary objectives of the AFPR are to assess the condition of the dams and flow conveyance structures at the TMF, and to review the adequacy of maintenance procedures. In addition to a visual inspection of the facility, the results from monitoring of instrumentation are reviewed for comparison with previous readings.

As outlined in the Operation, Maintenance and Surveillance (OMS) Manual (Golder, 2020b), daily, weekly, and quarterly inspections are to be completed by site personnel to assess changing conditions and identify maintenance requirements throughout the year. A detailed inspection of the facility should be completed annually by the Engineer of Record (EoR) and after any unusual events such as an extreme rainfall or seismic event.

This AFPR report describes the observations made during an inspection of the dams and drainage facilities at the TMF conducted on August 17, 2021. The inspection was carried out by Peter Merry of the Golder Mississauga Ontario office. Mr. Merry is a registered professional engineer and is the EoR for the TMF. The results of the inspection were discussed with site personnel following the site visit.

2.0 FACILITY DESCRIPTION

The TMF is located immediately north of the plant site and consists of two components, the Tailings Management Area (TMA) and the Polishing Pond (see Figure 2). The TMA is located in the historic Trout Pond valley, where high ground provides natural containment along the northern and southern perimeters. Two tailings containment dams (Dams A and B) were constructed across the valley to complete the impoundment. The Polishing Pond is located about 500 m west of the TMA where containment is provided by Dam C at the western end of the pond. A decant structure is incorporated in Dam C to manage water levels within the pond. Fresh water diversion ditches around the TMF are designed to reduce surface water inflows into these facilities under normal operations.

The TMF was originally designed to accommodate approximately 2.5 million tonnes (2.5 Mt) of tailings at a nominal production rate of 1,800 tonnes per day (1,800 tpd) over the planned 6.2-year life-of-mine. Processing of ore from the mine started in January 2007 with full operation commencing in June 2007. Mining and milling finished in mid-2015 with a total of approximately 2.7 Mt of tailings deposited in the TMA over the mine life. The additional 0.2 Mt of tailings stored in the TMA above the original design capacity was achievable based on improved deposition efficiencies.

The Potentially Acid Generating (PAG) tailings were transported to the TMA as a slurry and then deposited subaqueously. A minimum 0.4 m deep water cover was provided over the tailings to inhibit oxidation and acid generation during the operating period. Teck has lowered the water level in the TMA frequently since 2017 to facilitate the placement of contaminated soils between the internal berms. This practice will continue until after the mill is demolished in late 2021 and the plant site remediated, currently planned for 2022. The internal berms across the TMA are rockfill embankments designed to reduce the fetch length and required water cover depth to prevent the long-term re-suspension of the tailings (Golder, 2015b). Construction of the internal berms was completed in late 2017. A typical section of the internal berms is illustrated on Figure 4. Future reclamation activities will include a dredging program to lower all tailings below the design maximum tailings elevation of 274.2 metres above sea level (masl).

Closure of DPO, including the TMF, is described in the site reclamation and closure plan (AMEC, 2014). The TMF is currently in a transition period which is the first stage of reclamation and closure as defined by CDA (2019). This typically includes a period of time after the mine has permanently ceased operations and activities are undertaken to prepare the TMF for the active or passive care closure phases. In its current state, water continues to be treated in the TMA and discharged to the Polishing Pond, prior to final discharge to the environment. As the site has a positive water balance, some treatment and discharge of water is required until it can be demonstrated that the water quality in the TMA meets regulatory criteria for direct discharge to the environment. For the transition period, the maximum operating water level in the TMA is 276.9 masl to provide 0.8 m of depth to the Dam B spillway, which is sufficient to store the environmental design flood. To facilitate the internal berm construction and placement of contaminated soils, the operating water level has been drawn down to approximately 273.0 m every summer since 2017. Once placement of the contaminated soils is complete, the water level will be increased to at least its minimum operating level of 276.3 masl in order to maintain 0.6 m of water cover over the PAG waste rock placed in the TMA as part of the berm construction and PAG waste rock cover over the contaminated soils. PAG waste rock used for construction of the internal berms was not placed above the minimum operating water level as this would result in the rock being flushed with changes in water levels. The ultimate required closure water cover depth over the tailings and waste rock is not achieved during the current transition period. There is therefore a risk of the generation of suspended solids during the spring thaw

and significant wind events. Similar to the operating phase, this risk is managed by delaying the pumping of water from the TMA to the Polishing Pond until acceptable water quality criteria is achieved.

Results of the water balance modelling for the transition period predicts a fluctuation in the TMA water level of 0.6 m for a 100-year wet return period and a minimum operating water level of 276.3 m was proposed. The water balance was run based on the same water management procedures implemented during operations in which water inflows are stored in the TMA for a period of seven months, from the beginning of December through the end of June each year. Water is planned to be discharged to the Polishing Pond by pumping at a constant rate over a five-month period from July through November. While the underground workings have already flooded, the ultimate discharge rate from the underground workings has not been clearly defined and may affect the water management levels and discharge rates from the TMA in the coming years. No discharge from the underground workings was observed while the underground water level stabilized between 2015 and 2019. In 2020, Teck installed a pumping system in the portal to manage water levels in the underground workings with excess water pumped to the TMA. Since 2020, Teck has allowed the water levels in the underground workings to stabilize without pumping to the TMA. Over this period, the water level has fluctuated seasonally but has been contained within the ramp and did not overtop to the TMA. Excess water accumulated at the Boundary site is also pumped to the TMA near the south abutment of Dam A and contributes to the net inflow to the TMA. In recent years, Teck has reported approximately 2.0 - 2.2M-m³ of water was discharged from the Polishing Pond to the environment on an annual basis, with discharge occurring up to 12 months a year. While this is more than the discharge rate predicted with the water balance for the transition period, the increased discharge is attributed to lowering the water level in the TMA to facilitate placement of the contaminated soils and some of the unknowns attributed to the underground mine flooding and inflows from the Boundary site in recent years. It is recommended that the TMF water balance be updated and calibrated with actual data once the Boundary site and underground dewatering flows are better understood to determine the impacts on the TMA water levels and discharge rates. It is currently understood this study will be initiated in 2022.

The Polishing Pond will continue to serve as a settling basin for treated effluent from the TMA during the transition phase, prior to its release into the environment.

Since commissioning the facility in 2007, the water management operating procedures have been modified to allow for batch discharge when required to meet effluent water quality objectives. This has resulted in extending the discharge period, discharging at increased rates, and exceeding the design maximum operating water level in the TMA on occasions. A similar procedure will remain in effect during the transition phase; however, it is less likely to be implemented as a result of less inflow into the TMA than previously occurred from the milling operation. Details are discussed further in the OMS Manual (2020b).

All three containment dams around the TMF are zoned earthfill embankments incorporating a thick central core of relatively low permeability glacial till, keyed into the glacial till foundation soils, as a seepage barrier. A filter zone is provided adjacent to the downstream face of the core to prevent internal erosion (piping) of the core material under seepage pressures. The core and filter zones are supported by upstream and downstream shells of compacted, free draining granular materials. Internal drainage systems are designed to promote drainage of the downstream shell. Emergency spillways at Dam B in the TMA and Dam C at the Polishing Pond are designed to protect the dams from overtopping during extreme flood events.

The downstream shells of the dams are protected from surface runoff and wind erosion by a layer of cobble size stone (rip rap). Armour stone erosion protection comprised of boulder size particles protects the upstream shells from erosion by wave action, as well as surface runoff and fluctuations in pond water levels. Typical cross-sections of the dams are illustrated on Figure 3 and Figure 4.

All three perimeter dams were classified as Low consequence structures during the 2016 DSR conducted by GEMTEC (2017) based on CDA (2013). A review of the classification as part of the 2021 annual facility inspection report indicates the classification is still appropriate as no changes to the dams or downstream environment have occurred. The next DSR is scheduled for 2022.

The freshwater diversion ditches and emergency spillway channels have been formed in the glacial till soils. Rip rap and armour stone erosion protection is provided in locations where high flow velocities are anticipated. At other locations, the ditch and channel inverts are protected against erosion by a vegetative cover. Culverts have been installed beneath access roads that cross the ditch and channel alignments.

A total of 11 standpipe type piezometers were installed in the containment dams in August 2007 to monitor water levels within the dams and foundation soils (Golder, 2008a). The piezometers are illustrated on Figure 3 and Figure 4 and are still monitored to evaluate dam performance. Plots of the historical piezometer readings are provided with the inspection forms for each dam in Appendix A. In addition, four monitoring wells, installed by SGEA during construction in 2006, are being monitored for groundwater quality by Teck.

3.0 INSPECTION PROCEDURES

The AFPR involved a detailed visual inspection of the facility on August 17, 2021, including those structures identified in Table 1. Any deficiencies apparent in the condition of the structures were noted and recommendations for remedial action, if required, were identified.

Table 1: Summary of Structures Inspected

Structure	Description
Dam A	Provides containment along the eastern end of the TMA.
Dam B	Provides containment along the western end of the TMA.
Dam C	Provides containment along the western end of the Polishing Pond and contains the decant structure for final discharge to the environment.
Internal Berms	Reduces fetch length across the TMA during closure.
Dam B Emergency Spillway and Channel	Emergency spillway for the TMA. The Channel also diverts surface water runoff away from the northern side of the Polishing Pond.
Dam C Emergency Spillway	Emergency spillway for the Polishing Pond.
Diversion Ditches A1, A2, B1, C1	Divert surface water runoff away from the TMA and Polishing Pond.
Discharge Ditch	Conveys treated effluent from the TMA to the Polishing Pond.
Pipelines	Pipelines required to convey water and treated effluent around the TMF.
Access Roads	Provide access to all structures around the TMF for monitoring and surveillance purposes.

Details of the inspection are contained in Appendix A. The condition of each structure was recorded on individual inspection sheets (Forms A and B). Measured piezometric water levels recorded on August 13, 2021 by site personnel are provided in plots in Appendix A and illustrated on Figure 3 and Figure 4. Representative photographs are included with each form for clarity. A complete photographic record of the site inspection along with detailed field inspection notes are maintained in the project files in Golder's Mississauga, Ontario office.

4.0 GENERAL COMMENTS AND OBSERVATIONS

The overall condition of the TMF appears to be substantially unchanged since the last site visit in 2020. Some of the recommendations provided in the 2020 annual report have been completed by Teck over the past year. Outstanding items are discussed in the subsections below.

Generally, all structures at the TMF appeared to be in good operating condition. The containment dams show no evidence of instability. No unusual seepage was observed at any of the dam structures, suggesting proper functioning of the dams and internal drainage system.

Vegetation is growing on and around the dams and within the hydraulic flow structures. Ongoing maintenance should include routine clearing of the dams, ditches and spillway channels in order to maintain flow capacities, prevent internal damage to the dams, and permit visual inspection. A large campaign of vegetation clearing was carried out in 2021 and another one will likely be required in 2023.

Observations made during the inspection are summarized in the following sections, and fully documented in Appendix A. Forms A and B in Appendix A document minor deficiencies that were noted at the time of the inspection. These deficiencies should be addressed as part of the ongoing maintenance program.

TMF Water Management

In mid-2015, mining and milling operations ceased, and Teck has lowered the water level in the TMA to facilitate construction of the internal berms and placement of contaminated soils most summers since 2016. At the time of the site inspection, the water level in the TMA (274.8 m) was approximately 1.5 m below the design minimum operating water level for the transition period (276.3 m). Teck will keep the water level low until placement of contaminated soils is complete, likely in 2022. The amount of time that the tailings are exposed for placement of the contaminated soils will be minimized to inhibit oxidation and acid generation and affect water quality in the TMA.

A site wide water balance exists for the site and was developed by Golder in GoldSim. A review of the annual discharge volumes from site in recent years shows that typically $2.0 \text{ M m}^3 - 2.2 \text{ M m}^3$ of water is discharged to the environment annually from Dam C. This exceeds the predicted volume of $1.0 \text{ M m}^3 - 1.2 \text{ M m}^3$ under average hydrological conditions (Golder 2015a). It is acknowledged that the water level in the TMA has been drawn down in recent years to facilitate placement of contaminated soils which could increase the volume typically discharged. However, it is recommended that the water balance be updated and calibrated to actual site conditions.

Dam A

The dam appeared to be in good overall condition. The crest was noted as being topped with mostly sand and gravel with some cobbles with no apparent crossfall or camber.

Vegetation was cleared from the downstream toe and the seepage collection ditch was re-excavated in 2021 to promote visual surveillance of seepage conditions. There was very little vegetation observed along the upstream slopes and the high-water mark was visible with a large amount of normal freeboard. Some areas along the downstream slope were observed to be covered with large vegetation (i.e., small trees and shrubs) and should be cleared in 2022.

Ponded water was observed along the toe at some locations and visible seepage was noted. There was no water upwelling or flowing directly out of the toe, and the seepage was noted as slightly more than a trickle.

The seepage emanating from the downstream shell and accumulating in the Seepage Collection Sump at

Sta 0+550, along with surface runoff from the area, flows through the high-density polyethylene (HDPE) culvert beneath the access road to the environment. The water observed at the toe and discharging through the HDPE culvert was clear (i.e., free of sediment) and showed very little sign of discolouration due to oxidation. Although some portion of this water may be seepage from the TMA, it is understood from site personnel that the water quality at the culvert meets discharge criteria. In 2019, Teck started recording the flowrate at the culvert following recommendations in previous years. The flowrate on May 11th, 2021 was 0.9 L/s, which is consistent with historical observations. Golder developed a tracking sheet (attached to Form A in Appendix A) that should be used by Teck in the future to identify any trends in seepage flowrates.

Three piezometers (P07-01A in one nest and P07-02A and P07-02B in another nest) and a settlement plate (S18-08) were present on the crest of the dam at its maximum height. The instrumentation appeared in good condition; the concrete around the piezometers was in good condition, with only minor cracking around the edges.

The piezometers are generally responding well to fluctuating water levels in the TMA, indicating the dam is performing as intended. Piezometer P07-02B was reported as full to the dam crest elevation, well above the TMA pond level, in 2018 which prompted the casings on both piezometer nests to be raised in 2019 to prevent the ingress of surface runoff. The new casings are approximately 15 cm above the ground and help prevent surface runoff from entering the piezometers. Since the casings were raised, the piezometers have returned to historical normal levels.

The settlement plate, installed in late 2018, was surveyed by Landmark Surveys and Engineering Ltd. (formerly Red Indian Surveys Ltd.) in June 2019, October 2020, and May 2021. The survey data indicates that since its installation the plate has raised 56 mm, with 68 mm of rise occurring since the last survey in 2020. Based on visual observations, there were no signs of the settlement plate rising and the survey should be checked for accuracy.

Dam B

Dam B appeared to be in good overall condition and vegetation was cleared from the dam in 2021. The crest was noted as being topped with mostly sand and gravel with some cobbles and was observed to have no apparent crossfall or camber. The high-water mark was visible on the upstream shell with a large amount of normal freeboard.

An area of low-lying elevation was observed at the north abutment, between the dam crest and spillway during the 2020 site visit. The area was subsequently surveyed by Teck in 2021 and confirmed the crest elevation (279.0 m) is maintained from the north abutment to the spillway. A copy of the survey is included in Appendix B.

Similar to previous years, a ponded area was observed at the toe near Sta. 0+250, adjacent to the seepage collection sump. The water coming out from the downstream shell accumulates in this pond before discharging between two overburden spoil piles into a channel that flows towards the Polishing Pond. The water is clear (i.e., free of sediment); however, there are signs of iron staining in the small pond. The flow rate was consistent with observations in previous years and the seepage reports to the Polishing Pond.

Four piezometers (P07-03A and P07-03B in one nest and P07-04A and P07-04B in another nest) and a settlement plate (S18-02) were present on the crest of the dam at its maximum height. The instrumentation appeared in good condition; the concrete around the piezometers was in good condition with only minor cracking around the edges.

The piezometers on Dam B are generally responding well to fluctuating water levels in the TMA indicating the dam is performing as intended. P07-03A has returned to historical normals since the piezometer surface casing was extended in 2019 which stopped surface runoff entering the piezometer.

The settlement plate, installed in late 2018, was surveyed by Landmark Surveys & Engineering Ltd. in June 2019, October 2020, and May 2021. The survey data indicates that since its installation, the plate has settled vertically 10 mm. This indicates that minimal movement has occurred and is considered to be within the error tolerance of the survey. The settlement plate should continue to be surveyed annually, and the data provided to Golder for review as part of the AFPR.

The Water Reclaim Well at the pump house appeared to be in good condition. No blockages were observed at the intake screen. Mechanical and electrical inspection of the Water Reclaim Well was not part of the annual facility inspection scope.

Dam C

Dam C appeared to be in good overall condition. The crest was noted as being topped with mostly sand and gravel with some cobbles and was observed to have no apparent crossfall or camber.

There was very little vegetation observed along the slopes and the high-water mark was visible on the upstream shell with a large amount of normal freeboard. No signs of benching or movement were observed along the upstream slope. Vegetation was cleared from the downstream toe and the seepage collection ditch was re-excavated in 2021 north of the discharge structure to promote visual surveillance of seepage conditions.

Minor seepage and small ponded areas were observed at numerous points along the toe of Dam C. The water was clear (i.e., free of sediment) and showed very little sign of discolouration due to oxidation. The flowrate was negligible and consistent with observations in previous years. Although some portion of this water may be seepage from the Polishing Pond, it is understood from Teck that the water quality meets discharge criteria.

Discharge to the environment via the Decant Structure was not occurring at the time of the site visit. The Decant Structure and Hydraulic Discharge Structure both appeared to be operating as intended. There was no evidence of instability, wear, or blockage. Minor rusting was observed around the inlet of the Decant Structure, similar to previous years. The structure should be monitored for changing conditions that might affect its integrity.

The drain valve on the Hydraulic Discharge Structure has corroded and is difficult to open and close. The valve should be replaced to maintain a tight seal.

Four piezometers (P07-05A and P07-05B in one nest and P07-06A and P07-06B in another nest) were present on the crest of the dam and appeared in good condition; the concrete around the piezometers was in good condition with only minor cracking around the edges.

The piezometers on Dam C are generally responding well to fluctuating water levels in the Polishing Pond indicating the dam is performing as intended. P07-6A has returned to historical normals since the piezometer surface casing was extended in 2019 which stopped surface runoff entering the piezometer. Piezometer P07-06B is still showing fluctuating water levels above the Polishing Pond level. It is however noted that the most recent reading in October 2021 is lower and consistent with the other piezometers. The piezometers should continue to be monitored for changing conditions.

The Polishing Pond was designed for only a small amount of solids settling prior to discharge to the environment. Accumulation of precipitates in the pond resulting from effluent treatment during the operating period in the pipeline that discharges into the Discharge Ditch could reduce the pond's storage capacity. Following recommendations in previous years, Teck completed a sampling program in 2021 (executed by Wood) in the Polishing Pond to determine if any sludge has accumulated at the base of the pond. The results identified elevated concentrations of some metals. The accumulated sludge will need to be capped for passive closure or relocated to the TMA. An allowance for managing the sludge has been included in the site closure plan.

Internal Berms

Internal berms were constructed across the TMA in 2017 and the water treatment plant discharge pipelines were also installed along Berms 1 and 3.

Contaminated soils placed between the finger dykes in 2018 were covered with sand and gravel from the Boundary esker borrow source in 2019. The sand and gravel cover meets the design intent whereby wind/wave action during large return period events will prevent the resuspension of the contaminated soils.

As part of berm construction in 2017, settlement plates were installed on the crest of all 3 berms (S17-01 on Berm 1, S17-02 on Berm 2, and S17-03 on Berm 3). The settlement plates were surveyed by Landmark Surveys & Engineering Ltd. in June 2019, October 2020, and May 2021. The survey data indicates that since their installation, S17-01 has moved 5 mm, S17-02 has moved 7 mm, and S17-03 has moved 34 mm – all three of which are increases in elevation. This indicates that a small amount of movement has occurred or no movement has occurred and the difference in elevation are within the accuracy of the survey equipment. The settlement plates should continue to be surveyed annually, and the data provided to Golder for review as part of the annual facility inspection report.

A wave or bulge of tailings was observed along the side of most berms from construction. The bulge was caused by the displacement of the tailings following placement of the waste rock to construct the berms. The tailings bulge was visible above the pond level at the time of the site visit and may need to be dredged and deposited below elevation 274.2 m once placement of the contaminated soils is completed. A bathymetric survey will be required upon completion of the construction activities to determine the extent of dredging. Alternatively, Teck could initiate a study to re-evaluate the closure cover water depth and necessity to maintain the currently proposed 2.65 m of water over the tailings.

Dam B Emergency Spillway and Channel

The Dam B Emergency Spillway appeared to be in good operating condition with no evidence of instability, wear, erosion, or blockage. The corrugated steel pipe (CSP) culverts beneath the access road were observed to be generally clear.

A vegetative cover has fully established itself in lower reaches of the spillway channel. The ditch was cleared of vegetation and debris with an excavator in 2021. Ongoing maintenance should include routine clearing in the spillway channel to maintain the design flow capacity and facilitate visual inspections. Another round of vegetation clearing is likely required in 2023.

Dam C Emergency Spillway and Channel

The Dam C Emergency Spillway appeared to be in good operating condition with no evidence of instability, wear, erosion, or blockage. Minor vegetation growth was observed along the spillway and channel, including the concrete sill which was covered with vegetation. Vegetation and debris were cleared from the spillway in 2021.

Ongoing maintenance should include routine clearing in the spillway channel to maintain the design flow capacity and facilitate visual inspections. Another round of vegetation clearing is likely required in 2023.

Diversion Ditches

The diversion ditches appeared to be functioning well. Minor erosion was observed at some isolated locations along the ditch channel slopes. The channel slopes should continue to be monitored for erosion and repaired as necessary. A vegetative cover has fully established itself on most of the ditch slopes which should help to reduce further erosion. Vegetation and debris were cleared from the ditches in 2021 with an excavator. Ongoing maintenance should include routine clearing in the diversion ditches to maintain the design flow capacities and facilitate visual inspections. Another round of clearing is likely required in 2023.

The culvert beneath the mine access road in Diversion Ditch C1 was replaced with an HDPE pipe in 2021, following recommendations made in previous years.

A pipeline crossing was constructed in the winter of 2012/2013 across Diversion Ditch A2 at Sta. 0+350. The pipeline is buried and conveys water from the Boundary site to the TMA. The pipeline crossing includes a 0.3 m diameter HDPE culvert through the diversion ditch. The culvert is likely too small to convey the design storm flow and appears to be partially blocked with sediment and vegetation. Teck should expect erosion to the crossing should a large storm event occur and be prepared to perform maintenance on the crossing. Given the large ditch section at this location, although the crossing may potentially be damaged, the diversion ditch would still have sufficient capacity to convey the storm flow.

Discharge Ditch

The discharge ditch appeared to be in good overall condition. DPO was not discharging from the TMA into the Discharge Ditch at the time of the inspection.

Pipelines

Only the water reclaim pipeline (for water treatment) and discharge pipeline to the Polishing Pond remain functional from the pipelines utilized during operations.

In 2017, two new pipelines were installed from the water treatment plant to Internal Berms 1 and 3 to facilitate more selective lime addition into the TMA during the transition phase. The pipelines appear to be a combination of 10", 12", and 14" HDPE pipelines with a tee valve at the discharge locations on the berms to allow flow into all four cells. Teck reports that the pipelines are functioning as required.

OMS Manual

An Operations, Maintenance, and Surveillance (OMS) Manual has been developed for the TMF in accordance with the Mining Association of Canada (MAC) guidance documents. The OMS Manual was originally created in 2007 and has been updated numerous times throughout the life of the TMF. The most current revision was issued in June 2020 (Golder 2020b) and describes the requirements during the current transition period. There have been no changes to the facility or personnel that require an update to the OMS Manual at this time. However, once the mill has been demolished and all contaminated soils placed in the TMA, the OMS Manual should be updated to reflect current conditions, likely in late 2022.

5.0 FINDINGS AND RECOMMENDED ACTIONS

The recommendations identified during the current AFPR, which require attention and/or ongoing monitoring (but are not considered severe enough to mandate urgent action), are outlined in Table 2.

Table 2: Summary of the 2021 Annual Facility Performance Review Recommendations

Structure	ID Number	Deficiency or Non-Conformance	Recommended Action	Status	Priority ⁽¹⁾
General	2018-02	Shrubs larger than 1 m in height were cleared from most structures on site in 2018 (except those locations specifically mentioned below). Another round of clearing is likely required in 2020 to allow continued visual observations of the structures.	Additional clearing was carried out in 2019. Plan another round of clearing for all structures around the TMF in 2021.	Closed – vegetation was cleared in 2021 with the exception of the downstream shell of Dam A (addressed as a new action item below).	4
Polishing Pond	2018-12	Sediment accumulation in the Polishing Pond may reduce its storage capacity.	A bathymetric survey and sampling program should be carried out in the Polishing Pond to determine the degree of sediment accumulation and remaining available capacity in the pond.	Closed – Teck completed a sampling program (executed by Wood) in the Polishing Pond in 2021 to determine if any sludge has accumulated at the base of the pond. The results identified elevated concentrations of some metals. The accumulated sludge will need to be capped for Passive Closure or relocated to the TMA. An allowance for managing the sludge has been included in the site Closure Plan and this item is considered closed.	3
Dam C	2018-13	Minor rusting was observed around the inlet of the Decant Structure on Dam C.	The structure should be monitored for changing conditions that might affect its integrity.	Ongoing – No change in the condition of the structure in recent years.	3
Diversion Ditches	2018-15	A pipeline crossing was constructed in the winter of 2012/2013 across Diversion Ditch A2 at Sta. 0+350. The pipeline crossing includes a 0.3 m diameter HDPE culvert through the diversion ditch. The culvert is likely too small to convey the design storm flow and appears to be partially blocked with sediment and vegetation. However, the diversion ditch would not be overtopped under the design storm event as there is sufficient freeboard above the crossing to the top of bank on the diversion ditch.	The pipeline crossing should be monitored closely and repaired if damaged.	Ongoing – No observed change in the condition of the structure in recent years.	4
TMF	2019-01	Additional flows will be entering the TMA from Boundary site and the underground workings.	Once the flows from the underground workings and Boundary site are better understood, the TMF water balance should be reviewed and updated for impacts on water levels and discharge rates.	Open – A review of annual discharge volume to the environment indicates the current water balance is underestimating the amount of water to be managed on site. Teck plans to initiate a study to update the water balance in 2022.	3
Dam B	2020-01	A low area at the north abutment of Dam B was identified between the crest and spillway that may be lower than the crest elevation.	A topographic survey of the area should be completed to confirm the crest elevations and freeboard is maintained.	Closed – Teck completed a survey in 2021 (included in Appendix B) which confirms the dam crest elevation (279.0m) is maintained from the north abutment through the Dam B Emergency Spillway.	3
General	2020-02	A large amount of ponded water was observed along the downstream toe of Dams A, B, and C during the inspection.	Drainage could be improved to prevent ponding water.	Closed – Seepage collection ditches were cleared of debris and vegetation at Dam A and Dam C in 2021. Elimination of ponding water at the toe of Dam B is not possible given the local topography and swamp in the area.	4
Piezometers	2020-03	Piezometers are present on the crest of Dams A, B, and C. Four of the piezometers have experienced water levels up to the dam crest elevation. The surface casings on all piezometer nests were raised in 2019 to prevent the ingress of surface runoff. Since the raise, three of the piezometers have begun to return to historical levels while one is still experiencing higher levels. The piezometer data should be reviewed.	Teck should continue to monitor the piezometers on Dams A, B, and C monthly during non-freezing conditions and provide the data to Golder for review during the annual facility inspection.	Closed – While the piezometers must continue to be monitored monthly during non-freezing conditions as part of routine monitoring, this item is being removed from the list of specific recommendations.	3
Spillways	2020-04	Spillways observed to be generally clear with some vegetation present during the inspection.	Ongoing maintenance should include routine clearing in the spillway channels to maintain their flow capacity and permit visual inspection. Another round of vegetation clearing is required in 2021.	Closed – the spillways were cleared of vegetation in 2021.	4
Diversion Ditches	2020-05	The Diversion Ditch C1 CSP culvert beneath the mine access road is partially filled with debris, significantly reducing its capacity.	The culvert should be cleared of the debris.	Closed – the culvert was replaced with an HDPE pipe in 2021.	3

Table 2: Summary of the 2021 Annual Facility Performance Review Recommendations

Structure	ID Number	Deficiency or Non-Conformance	Recommended Action	Status	Priority ⁽¹⁾
General	2021-01	Shrubs larger than 1 m in height were cleared from all structures around the TMF in 2021, with the exception of the downstream shell of Dam A.	Clear vegetation from the downstream shell of Dam A in 2022 and plan another round of clearing of all structures around the TMF in 2023 to allow continued visual observations of the structures.	Open	4
Settlement Plates	2021-02	Settlement plate 18-01 on Dam A raised 68 mm since the last reading in 2020 although no visible movement was observed.	Settlement plate 18-01 should be re-surveyed to determine if the measurement obtained in 2021 is correct and the data should be provided to Golder for review.	Open	3
Dam C	2021-03	The drain valve on the Hydraulic Discharge Structure has corroded and is difficult to open and close	The drain valve should be replaced to maintain a tight seal.	Open	4
General	2021-04	The OMS Manual was last updated in 2020. The OMS Manual will require a detailed review and update once the mill has been demolished and all contaminated soils placed within the TMA.	Update the OMS Manual in late 2022.	Open	4

Legend:

Priority	Description
1	A high probability of actual dam safety issue considered immediately dangerous to life, health, or the environment, or a significant risk of regulatory enforcement.
2	If not corrected, could likely result in a dam safety issue leading to injury, environmental impact or significant regulatory enforcement; or a repetitive deficiency that demonstrates a systematic breakdown of procedures.
3	Single occurrences or deficiencies or non-conformances that alone would not be expected to result in a dam safety issue.
4	Best Management Practice – Further improvements are necessary to meet industry best practices or reduce potential risks.

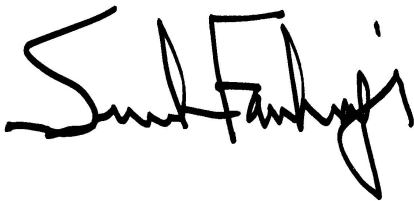
1) Source: British Columbia Health, Safety and Reclamation Code Guidance document, Section 4.2 (MEM 2016)

6.0 CLOSING

Based on the site inspection completed on August 17th, 2021 and review of documentation as part of the AFPR, the TMF is performing as intended. All dams appeared to be in a stable condition. Minor deficiencies noted during the inspection are not considered to be indicative of poor performance. Observations and recommendations for improvement are provided in the above sections of the report. The structures should continue to function as intended, provided they are routinely inspected and maintained.

We trust that this report satisfies your immediate requirements. Please feel free to contact us if you require additional information or wish to discuss any aspect of the report.

Golder Associates Ltd.



Siavash Farhangi, Ph.D., P.Eng. (Ont.)
Senior Principal Geotechnical Engineer



Peter Merry, P.Eng. (NFLD)
Senior Principal Mine Waste Engineer, Project Manager

SF/WPM/hp

[https://golderassociates.sharepoint.com/sites/142043/project files/5 technical work/1000 dsi/report/final/21455283-001-r-rev0-1000_2021 afpr report_31mar2022.docx](https://golderassociates.sharepoint.com/sites/142043/project%20files/5%20technical%20work/1000%20dsi/report/final/21455283-001-r-rev0-1000_2021%20afpr%20report_31mar2022.docx)



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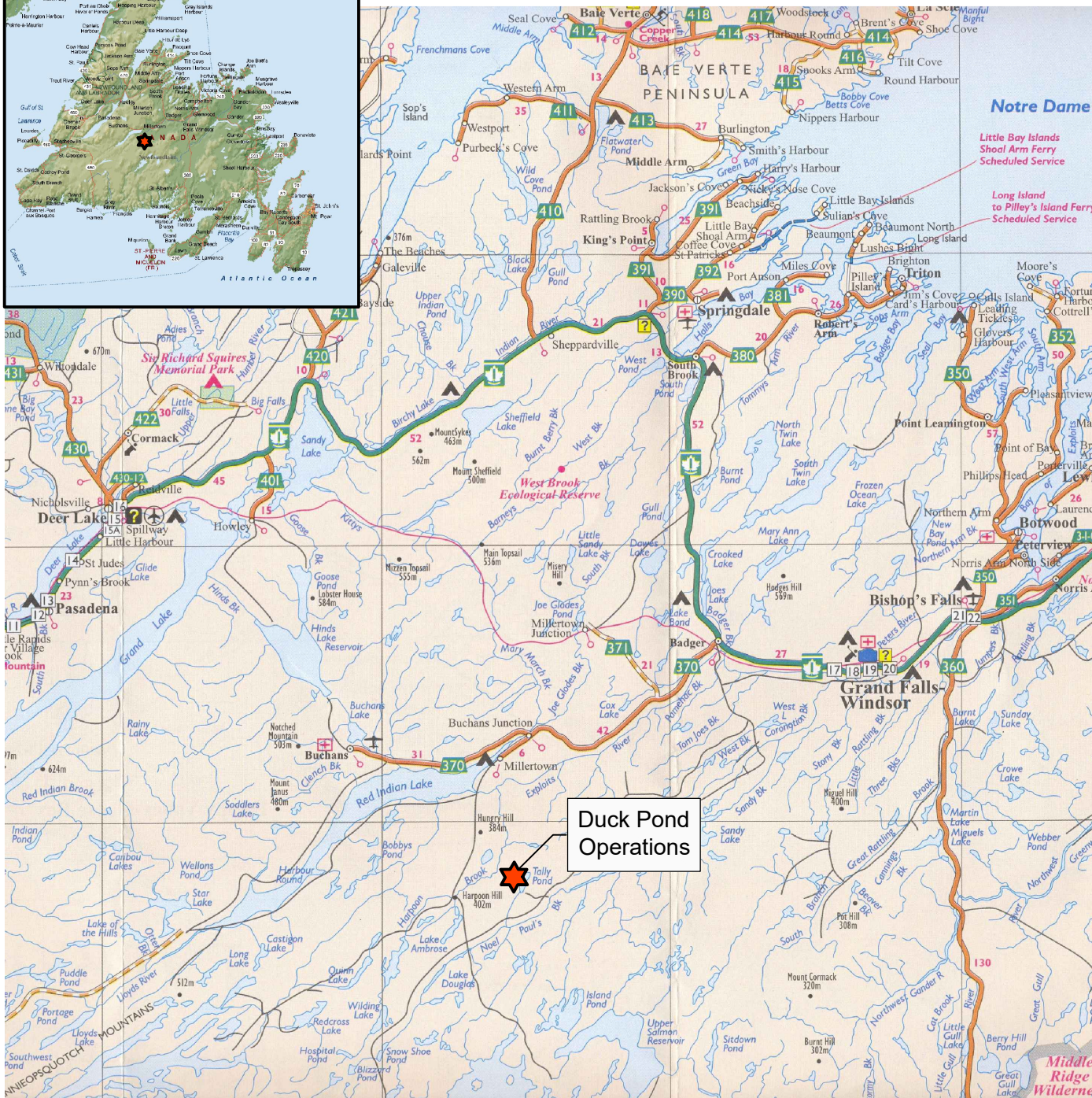
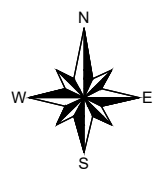
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FIGURES

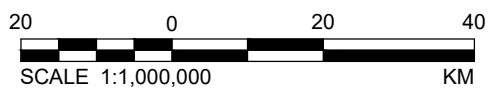


Duck Pond Operations

REFERENCES:

MICROSOFT MAPPOINT COPYRIGHT 1988-2001 MICROSOFT CORP. AND/OR ITS SUPPLIERS. ALL RIGHTS RESERVED.

DEPARTMENT OF TOURISM, CULTURE AND RECREATION, GOVERNMENT OF NEWFOUNDLAND, 2005.



CLIENT

TECK RESOURCES LIMITED

CONSULTANT

YYYY-MM-DD	2022-01-14
PREPARED	TDR
DESIGN	WPM
REVIEW	WPM
APPROVED	WPM



PROJECT

DUCK POND OPERATIONS
TAILINGS MANAGEMENT FACILITY
MILLERTOWN, NEWFOUNDLAND

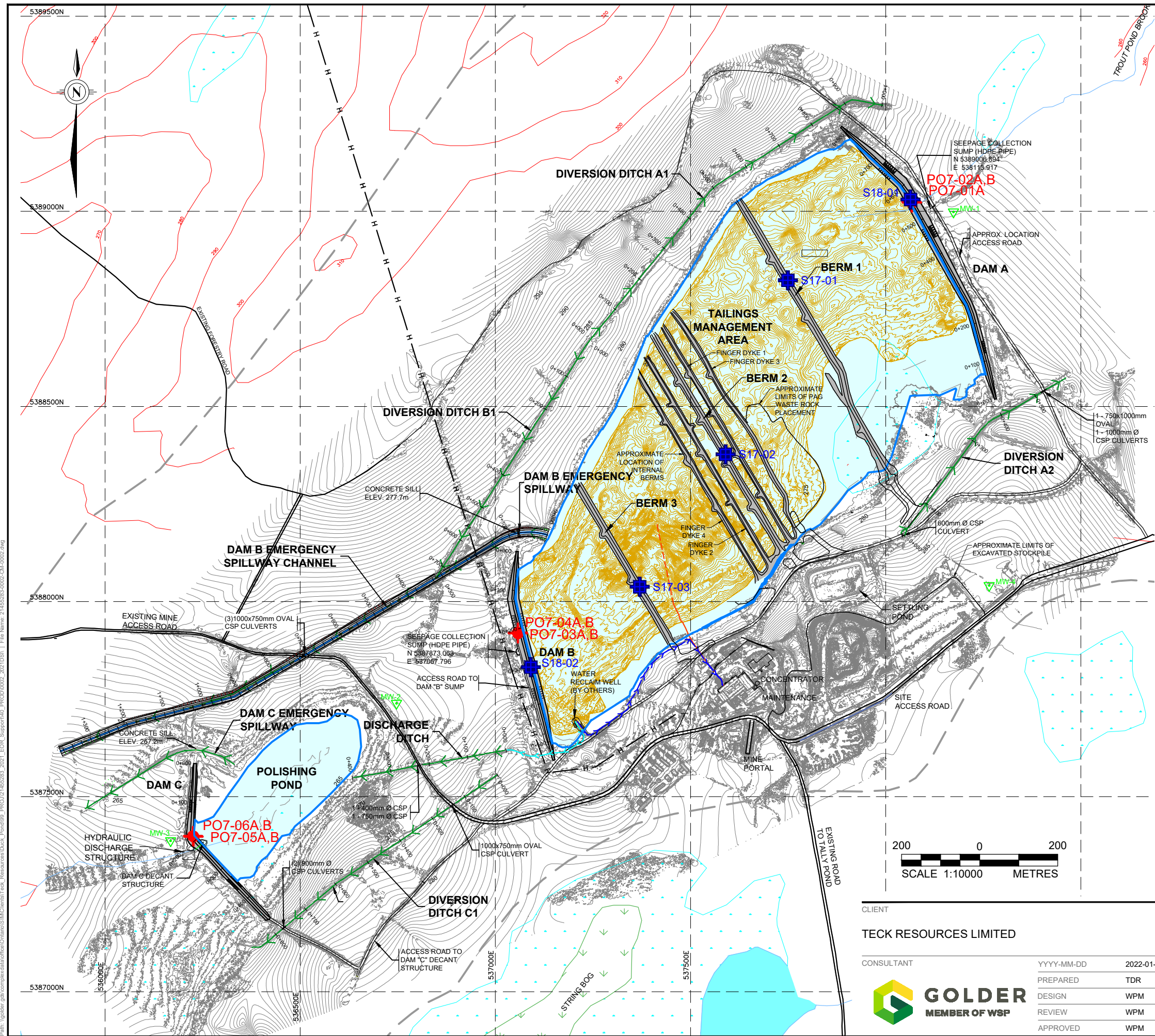
TITLE

SITE LOCATION PLAN

PROJECT No.	CONTROL	Rev.	FIGURE
21455283	0002	0	1

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- ◆ **P07-01A,B** PIEZOMETER LOCATION
- ▽ **MW-3** MONITORING WELL LOCATION
- SETTLEMENT PLATE
- 280 TOPOGRAPHIC CONTOURS REFERENCED FROM DRAWING B-140750-C-01-001 BY AMEC (OCTOBER, 2000) - NOT FOR CONSTRUCTION
- 280 TOPOGRAPHIC CONTOURS GENERATED FROM AERIAL DRONE SURVEY MAY 2013
- BATHYMETRIC CONTOURS IN TAILINGS BASIN (SEE NOTE 4)
- SWAMP
- ↓ STRING BOG
- ← DIVERSION DITCH ALIGNMENT
- H — POWER LINE
- WATER RECLAIM PIPELINE (350mm HDPE SDR 11)
- LIME TREATMENT PIPELINE (80mm HDPE SDR 13.5)
- WATER TRANSFER PIPELINE (350mm HDPE DR11)

NOTES

1. ALL ELEVATIONS (GEODETIC DATUM) AND GRID CO-ORDINATES (UTM NAD 27, ZONE 21) SHOWN ON THIS DRAWING ARE IN METRES.
2. TROUT POND AND POLISHING POND CONTOURS BASED ON SOUNDINGS CARRIED OUT BY SGE ACRES (JUNE 2005).
3. GROUND SURFACE HAS BEEN OBTAINED FROM LIMITED GROUND SURVEYS COMPLETED FOR THE OWNER IN JULY 2005. ACTUAL GROUND SURFACE MAY VARY FROM THAT SHOWN ON THE DRAWINGS.
4. BATHYMETRIC SURVEY OF TAILINGS BASIN PROVIDED BY RED INDIAN SURVEYS LTD, FILENAME 14197 Teck Tailings Pond-RIS.dwg, RECEIVED JULY, 2014.

REFERENCES

1. BASE PLAN PROVIDED IN DIGITAL FORMAT BY AMEC, DWG. NO. B-140750-C-01-001 DATED OCT. 23, 2000.
2. PLANT SITE AND MINE INFRASTRUCTURE LAYOUT PROVIDED BY SGE ACRES (DWG. NO. A1-01-50-0110-L.DWG, REV. A, DATED JUNE 20, 2005).
3. TAILINGS MANAGEMENT FACILITY AS BUILT DRAWINGS PROVIDED BY AUR RESOURCES (DWG. NO.A1-01-1050-1070- .DWG, REV.1, DATED MARCH 2, 2007).
4. AS BUILT INFORMATION COMPILED BY ADAM'S CONSTRUCTION AND SGE ACRES LIMITED.
5. MONITORING WELLS PROVIDED BY SGE ACRES IN EXCEL FORMAT ON SEPT.6, 2006.
6. LOCATIONS OF INTERNAL BERMS, ASSOCIATED ROADWORK AND LIMITS OF EXCAVATED STOCKPILE PROVIDED BY KYLE HEADDY, DATED NOV.06, 2017 IN POINT CLOUD FORMAT. FILENAMES 017_09_11_complete_survey_nad27_utm21.LAS AND berms_final_asbuilt.LAS.

CLIENT	TECK RESOURCES LIMITED		
CONSULTANT	YYYY-MM-DD	2022-01-14	PROJECT
	PREPARED	TDR	DUCK POND OPERATIONS
	DESIGN	WPM	TAILINGS MANAGEMENT FACILITY
	REVIEW	WPM	MILLERTOWN, NEWFOUNDLAND
APPROVED	WPM	TITLE	GENERAL ARRANGEMENT PLAN
	PROJECT No.	CONTROL	Rev.
	21455283	0002	0

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APPENDIX A

**Completed Inspection
Report Forms**

DUCK POND TAILINGS MANAGEMENT FACILITY FACILITY INSPECTION SUMMARY REPORT

All parts of this inspection form should be completed. Adverse conditions should be described and location stated. Additional information and relevant photographs should be attached.

Inspector's Name: Peter Merry Report No.: 21-1 Inspection Date: 17/08/2021
Golder Associates (DD/MM/YYYY)

WEATHER:

Temperature: 20 degrees Celsius Description: Partly Cloudy
Current Last 3 Days Other Comments: _____

dry	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
frost	<input type="checkbox"/>	<input type="checkbox"/>	
rain	<input type="checkbox"/>	<input type="checkbox"/>	
snow	<input type="checkbox"/>	<input type="checkbox"/>	

FACILITIES INSPECTED: (A separate report sheet, Form A or Form B, to be prepared for each structure)

Structure	Observed during site visit
DAM A	<input checked="" type="checkbox"/>
DAM B AND WATER RECLAIM WELL	<input checked="" type="checkbox"/>
DAM C AND DECANT / HYDRAULIC DISCHARGE STRUCTURES	<input checked="" type="checkbox"/>
INTERNAL BERMS	<input checked="" type="checkbox"/>
DAM B EMERGENCY SPILLWAY & CHANNEL	<input checked="" type="checkbox"/>
DAM C EMERGENCY SPILLWAY	<input checked="" type="checkbox"/>
DIVERSION DITCHES A1, A2, B1 and C1	<input checked="" type="checkbox"/>
DISCHARGE DITCH	<input checked="" type="checkbox"/>
PIPELINES / ACCESS ROADS	<input checked="" type="checkbox"/>

Reviewer's Name: Siavash Farhangi Date Reviewed: 24/01/2022
Golder Associates (DD/MM/YYYY)

IMMEIDATE ACTION REQUIRED: none

No additional comments beyond those discussed in the individual inspection forms.

**DUCK POND TAILINGS MANAGEMENT FACILITY
FIELD INSPECTION FORM A
DAM INSPECTION REPORT**

Sheet 1 of 3

All parts of this inspection form should be completed. Adverse conditions should be described and location stated. Additional information and relevant photographs should be attached.

Inspector's Name: Peter Merry Report No.: 21-01 Inspection Date: 17/08/2021
Golder Associates (DD/MM/YYYY)

DAM INFORMATION:

Identification: Dam A Crest Elevation: 279.0 m Head Pond Elevation 274.8 m

DAM INSPECTION

A) Crest

cracking	<input checked="" type="checkbox"/> none	<input type="checkbox"/>	
settlement	<input checked="" type="checkbox"/> none	<input type="checkbox"/>	
erosion	<input checked="" type="checkbox"/> none	<input type="checkbox"/>	
other movement	<input checked="" type="checkbox"/> none	<input type="checkbox"/>	
crest vegetation	<input checked="" type="checkbox"/> none	<input type="checkbox"/>	

B) Downstream Slope and Toe Area

erosion	<input checked="" type="checkbox"/> none	<input type="checkbox"/>	
settlement	<input checked="" type="checkbox"/> none	<input type="checkbox"/>	
bulging	<input checked="" type="checkbox"/> none	<input type="checkbox"/>	
sloughing	<input checked="" type="checkbox"/> none	<input type="checkbox"/>	
slope protection	<input checked="" type="checkbox"/> good	<input type="checkbox"/>	
slope vegetation	<input type="checkbox"/> none	<input checked="" type="checkbox"/>	Minor vegetation growth.
animal burrows	<input checked="" type="checkbox"/> none	<input type="checkbox"/>	
seepage	<input type="checkbox"/> none	<input checked="" type="checkbox"/>	location 1: No specific location identified from toe of the dam. Overall seepage collects along the length of the dam and discharges away from the dam through a culvert at Sta. 0+550.

rate:	<input type="checkbox"/> damp	<input type="checkbox"/> trickle	<input checked="" type="checkbox"/> steady	<u>0.9</u> (L/s)
clarity:	<input checked="" type="checkbox"/> clear	<input type="checkbox"/> muddy		
sample taken:	<input type="checkbox"/> yes	<input checked="" type="checkbox"/> no		

location 2:

rate	<input type="checkbox"/> damp	<input type="checkbox"/> trickle	<input type="checkbox"/> steady	____ (L/s)
clarity	<input type="checkbox"/> clear	<input type="checkbox"/> muddy		
sample taken	<input type="checkbox"/> yes	<input type="checkbox"/> no		

toe vegetation	<input type="checkbox"/> none	<input checked="" type="checkbox"/>	sparse	<input type="checkbox"/> moderate	<input type="checkbox"/> heavy
			type: Grasses and shrubs in some places.		
sand boils	<input checked="" type="checkbox"/> none	<input type="checkbox"/>	location(s) _____		

**DUCK POND TAILINGS MANAGEMENT FACILITY
FIELD INSPECTION FORM A
DAM INSPECTION REPORT**

Sheet 2 of 3

C) Upstream Slope and Tailings Surface

erosion	<input checked="" type="checkbox"/> none	<input type="checkbox"/> wave induced	<input type="checkbox"/> surface runoff
		location(s):	
		degree	<input type="checkbox"/> minor <input type="checkbox"/> moderate <input type="checkbox"/> severe
settlement	<input checked="" type="checkbox"/> none	<input type="checkbox"/>	_____
bulging	<input checked="" type="checkbox"/> none	<input type="checkbox"/>	_____
sloughing	<input checked="" type="checkbox"/> none	<input type="checkbox"/>	_____
slope protection	<input checked="" type="checkbox"/> good	<input type="checkbox"/>	_____
slope vegetation	<input checked="" type="checkbox"/> none	<input type="checkbox"/>	_____
animal burrows	<input checked="" type="checkbox"/> none	<input type="checkbox"/>	_____
whirlpool	<input checked="" type="checkbox"/> none	<input type="checkbox"/>	_____
sinkholes	<input checked="" type="checkbox"/> none	<input type="checkbox"/>	_____
tailings surface	<input type="checkbox"/> water covered	<input checked="" type="checkbox"/>	TMA Pond level drawn down in 2021 for reclamation activities.

SPILLWAY / FLOW CONTROL STRUCTURE INSPECTION

Type:

<input type="checkbox"/> spillway	<input type="checkbox"/> water reclaim well
<input type="checkbox"/> decant	<input type="checkbox"/> weir
	<input checked="" type="checkbox"/> other

Water level in TMA controlled by pumping from the water reclaim well near Dam B

Flow:	<input type="checkbox"/> none	<input type="checkbox"/> clear	<input type="checkbox"/> muddy
Rate of discharge	(m ³ /hr)	<input type="checkbox"/> estimated	<input type="checkbox"/> measured
			Gauge Reading _____

Conditions Observed:

<input type="checkbox"/> good	<input type="checkbox"/> blockage of inlet	<input type="checkbox"/> debris	_____	corrective action:	<input type="checkbox"/> taken
		<input type="checkbox"/> beaver dam	_____		<input type="checkbox"/> to follow
		<input type="checkbox"/> siltation	_____		
	<input type="checkbox"/> blockage of outlet	<input type="checkbox"/> debris	_____	corrective action:	<input type="checkbox"/> taken
		<input type="checkbox"/> beaver dam	_____		<input type="checkbox"/> to follow
		<input type="checkbox"/> siltation	_____		
	<input type="checkbox"/> erosion	<input type="checkbox"/> channel	_____	corrective action:	<input type="checkbox"/> taken
		<input type="checkbox"/> side slope	_____		<input type="checkbox"/> to follow
		<input type="checkbox"/> at discharge	_____		

Comments:

**DUCK POND TAILINGS MANAGEMENT FACILITY
FIELD INSPECTION FORM A
DAM INSPECTION REPORT**

Sheet 3 of 3

DAM INSTRUMENTATION: (plot any newly installed instrumentation on relevant plans and cross-sections)

	<u>Operational</u>	<u>Damaged</u>	<u>Measurement Taken</u>
<input type="checkbox"/> none			
<input checked="" type="checkbox"/> piezometers	<input checked="" type="checkbox"/> BH 07-01 & 07-02	<input type="checkbox"/>	<input checked="" type="checkbox"/> monthly by mine personnel
<input checked="" type="checkbox"/> monitoring wells	<input checked="" type="checkbox"/> MW-1	<input type="checkbox"/>	<input checked="" type="checkbox"/> by mine personnel
<input checked="" type="checkbox"/> survey monuments	<input checked="" type="checkbox"/> S18-01	<input type="checkbox"/>	<input checked="" type="checkbox"/> Landmark Surveys & Engineering
<input type="checkbox"/> other _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

COMMENTS AND RECOMMENDATIONS:

1. Dam A is in good condition based on the visual assessment.
2. Piezometer data are generally showing consistent trends with historical readings.
3. The surface casings were extended in 2019 to reduce surface inflows and have resulted in more stabilized piezometer readings, as intended.
4. Flows at the outlet of the road culvert at the downstream toe of Dam A near Sta. 0+550 were measured and recorded along with piezometer readings starting 2021. The discharge at the time of the inspection was consistent with previous years and reported as 0.9 L/s by Teck personnel on May 17.
5. Vegetation was cleared from the downstream toe and the seepage collection ditch re-excavated in 2021 to promote visual surveillance of seepage conditions.
6. Vegetation growth on the dam has been an ongoing issue and requires routine maintenance. The last round of clearing was completed in 2019 and another round of clearing is required in 2022.
7. The settlement plate was surveyed in May 2021 and reportedly raised 56 mm since its installation in 2018 and 68 mm since the last survey in 2020. Based on visual observations, there were no signs of the settlement plate rising and the survey should be checked for accuracy.

Action Required:
 none
 further monitoring
 maintenance
 immediate remediation
 Plan or Sketch Attached Figure 2
 Photographs Attached 1 – 8

Reviewer's Name: Siavash Farhangi Date Reviewed: 24/01/2022
Golder Associates (DD/MM/YYYY)

REVIEW COMMENTS: none

2021 Inspection - Duck Pond Tailings Management Facility

Client: Teck Resources Limited

Project Number: 21455283

Site Location: Dam A

Photographed by: P. Merry

Date: August 17, 2021

Drawn By: P. Merry

Photograph 1

Dam A downstream shell looking north from Sta. 0+100.



Photograph 2

Dam A upstream shell and crest looking south from Sta. 0+800.



2021 Inspection - Duck Pond Tailings Management Facility

Client: Teck Resources Limited

Project Number: 21455283

Site Location: Dam A

Photographed by: P. Merry

Date: August 17, 2021

Drawn By: P. Merry

Photograph 3

Downstream shell of Dam A at 0+700.



Photograph 4

Discharge from culvert beneath access road downstream of Dam A.

The flowrate was consistent with previous rates.



2021 Inspection - Duck Pond Tailings Management Facility

Client: Teck Resources Limited

Project Number: 21455283

Site Location: Dam A

Photographed by: P. Merry

Date: August 17, 2021

Drawn By: P. Merry

Photograph 5

Upstream slope of Dam A at Sta. 0+300 looking north.



Photograph 6

Piezometer surface casings (upgraded in 2019).



2021 Inspection - Duck Pond Tailings Management Facility

Client: Teck Resources Limited

Project Number: 21455283

Site Location: Dam A

Photographed by: P. Merry

Date: August 17, 2021

Drawn By: P. Merry

Photograph 7

Downstream toe of Dam A at Sta. 0+200. The collection ditch was cleared of vegetation and debris in 2021, although ponding water is still observed given the flat topography in the area.



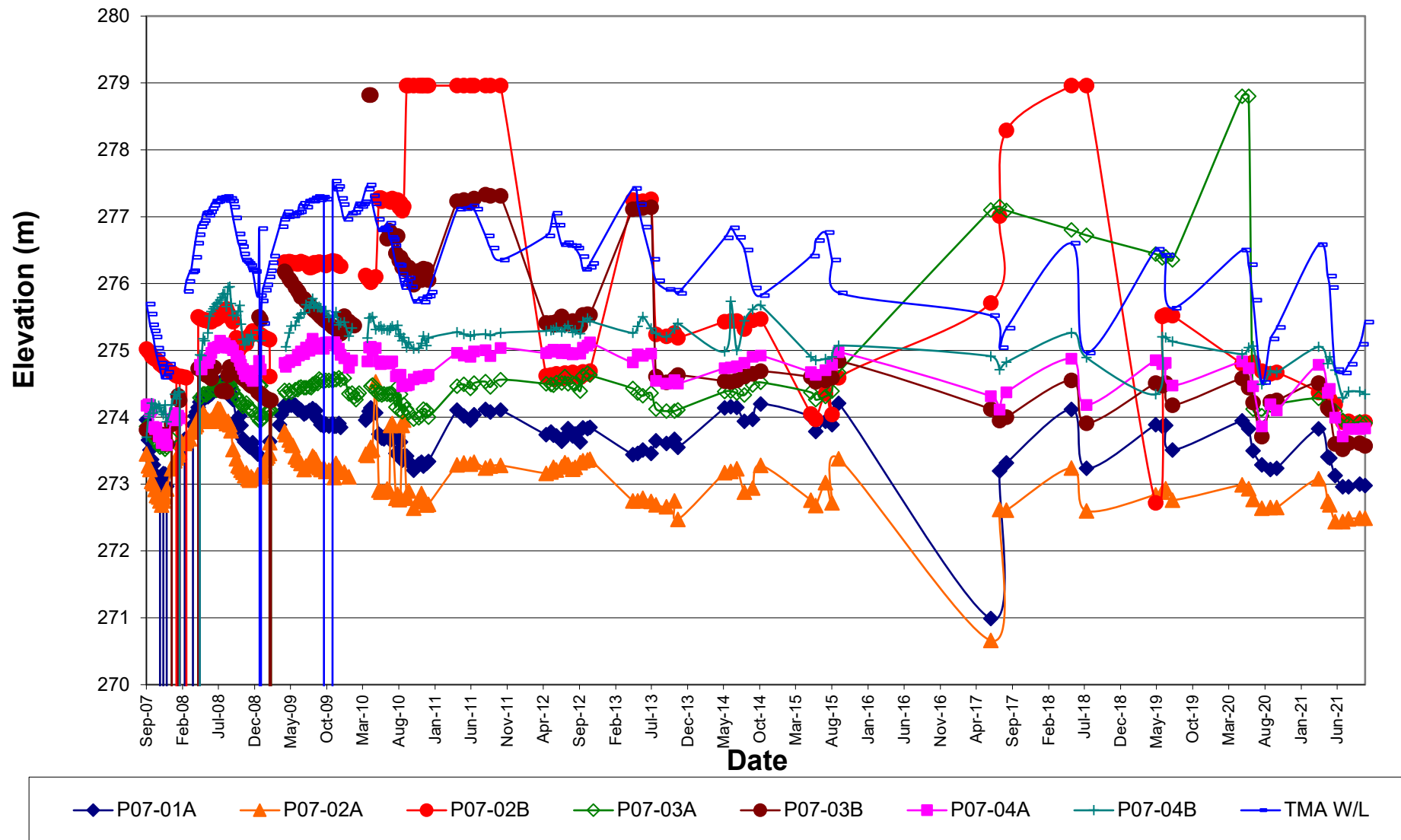
Photograph 8

Downstream slope of Dam A at Sta. 0+600 looking south.



Dam Instrumentation Graph
Duck Pond TMF

DUCK POND OPERATIONS TMA PIEZOMETERS

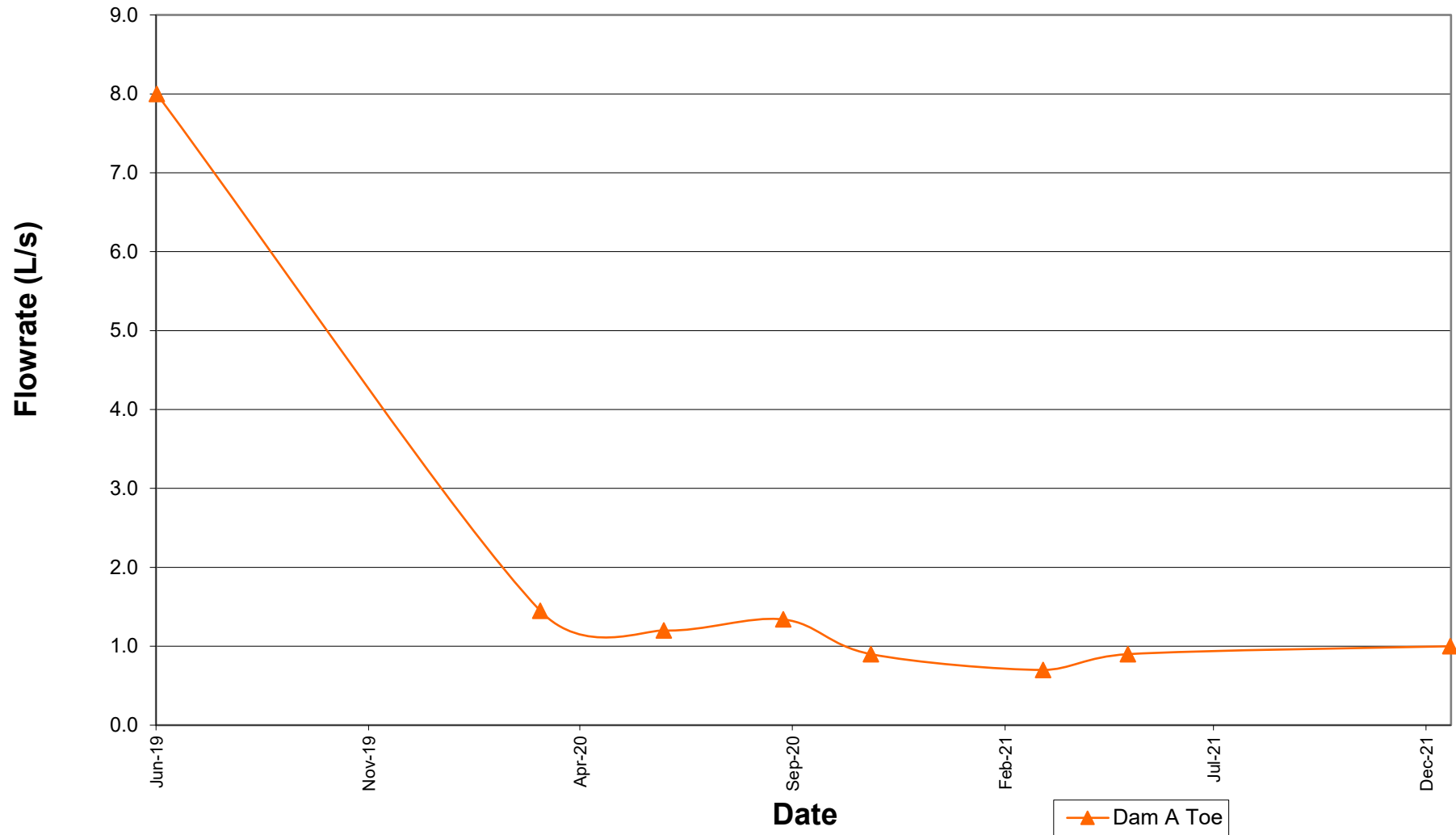


Golder Associates

[https://golderassociates.sharepoint.com/sites/142043/Project Files/5 Technical Work/1000 DSI/Instrumentation/Duck Pond Dam Instrumentation](https://golderassociates.sharepoint.com/sites/142043/Project%20Files/5%20Technical%20Work/1000%20DSI/Instrumentation/Duck%20Pond%20Dam%20Instrumentation)

Dam Seepage Plot
Duck Pond TMF

DUCK POND OPERATIONS SEEPAGE MONITORING



Golder Associates

[https://golderassociates.sharepoint.com/sites/142043/Project Files/5 Technical Work/1000 DSI/Instrumentation/Duck Pond Dam Instrumentation](https://golderassociates.sharepoint.com/sites/142043/Project%20Files/5%20Technical%20Work/1000%20DSI/Instrumentation/Duck%20Pond%20Dam%20Instrumentation)

**DUCK POND TAILINGS MANAGEMENT FACILITY
FIELD INSPECTION FORM A
DAM INSPECTION REPORT**

Sheet 1 of 3

All parts of this inspection form should be completed. Adverse conditions should be described and location stated. Additional information and relevant photographs should be attached.

Inspector's Name: Peter Merry Report No.: 21-01 Inspection Date: 17/08/2021
Golder Associates (DD/MM/YYYY)

DAM INFORMATION:

Identification: Dam B Crest Elevation: 279.0 m Head Pond Elevation 274.8 m

DAM INSPECTION

A) Crest

cracking	<input checked="" type="checkbox"/> none	<input type="checkbox"/>	_____
settlement	<input checked="" type="checkbox"/> none	<input type="checkbox"/>	_____
erosion	<input checked="" type="checkbox"/> none	<input type="checkbox"/>	_____
other movement	<input checked="" type="checkbox"/> none	<input type="checkbox"/>	_____
crest vegetation	<input checked="" type="checkbox"/> none	<input type="checkbox"/>	_____

B) Downstream Slope and Toe Area

erosion	<input checked="" type="checkbox"/> none	<input type="checkbox"/>	_____
settlement	<input checked="" type="checkbox"/> none	<input type="checkbox"/>	_____
bulging	<input checked="" type="checkbox"/> none	<input type="checkbox"/>	_____
sloughing	<input checked="" type="checkbox"/> none	<input type="checkbox"/>	_____
slope protection	<input checked="" type="checkbox"/> good	<input type="checkbox"/>	_____
slope vegetation	<input checked="" type="checkbox"/> none	<input type="checkbox"/>	_____
animal burrows	<input checked="" type="checkbox"/> none	<input type="checkbox"/>	_____
seepage	<input type="checkbox"/> none	<input checked="" type="checkbox"/>	_____

location 1: Some ponded water along downstream toe. No visible seepage observed.

rate: damp trickle steady _____ (L/s)
 clarity: clear muddy _____
 sample taken: yes no

location 2: Some areas along the toe have lush plant growth suggesting seepage/water surface close to surface of shell.

rate damp trickle steady _____ (L/s)
 clarity clear muddy _____
 sample taken yes no

toe vegetation	<input type="checkbox"/> none	<input checked="" type="checkbox"/>	sparse <input type="checkbox"/> moderate <input type="checkbox"/> heavy
			type: <u>Grasses and shrubs</u>
sand boils	<input checked="" type="checkbox"/> none	<input type="checkbox"/>	location(s) _____

**DUCK POND TAILINGS MANAGEMENT FACILITY
FIELD INSPECTION FORM A
DAM INSPECTION REPORT**

Sheet 2 of 3

C) Upstream Slope and Tailings Surface

erosion	<input checked="" type="checkbox"/> none	<input type="checkbox"/> wave induced	<input type="checkbox"/> surface runoff
		location(s):	
		degree	<input type="checkbox"/> minor <input type="checkbox"/> moderate <input type="checkbox"/> severe
settlement	<input checked="" type="checkbox"/> none	<input type="checkbox"/>	_____
bulging	<input checked="" type="checkbox"/> none	<input type="checkbox"/>	_____
sloughing	<input checked="" type="checkbox"/> none	<input type="checkbox"/>	_____
slope protection	<input checked="" type="checkbox"/> good	<input type="checkbox"/>	_____
slope vegetation	<input checked="" type="checkbox"/> none	<input type="checkbox"/>	_____
animal burrows	<input checked="" type="checkbox"/> none	<input type="checkbox"/>	_____
whirlpool	<input checked="" type="checkbox"/> none	<input type="checkbox"/>	_____
sinkholes	<input checked="" type="checkbox"/> none	<input type="checkbox"/>	_____
tailings surface	<input type="checkbox"/> water covered	<input checked="" type="checkbox"/>	Some exposed tailings visible in TMF, as a result of low water level in the basin for reclamation activities.

SPILLWAY / FLOW CONTROL STRUCTURE INSPECTION

Type: Water level in TMA controlled by pumping from the water reclaim well.

- | | |
|--|--|
| <input checked="" type="checkbox"/> spillway | <input checked="" type="checkbox"/> water reclaim well |
| <input type="checkbox"/> decant | <input type="checkbox"/> weir |
| | <input type="checkbox"/> other |

No flow in discharge ditch to the Polishing Pond; no flow in spillway.

Flow:	<input checked="" type="checkbox"/> none	<input type="checkbox"/> clear	<input type="checkbox"/> muddy
Rate of discharge (m ³ /hr)	<input type="checkbox"/> estimated	<input type="checkbox"/> measured	Gauge Reading _____

Conditions Observed: Reclaim Well Intake

<input checked="" type="checkbox"/> good	<input type="checkbox"/> blockage of inlet	<input type="checkbox"/> debris	_____	corrective action:	<input type="checkbox"/> taken
		<input type="checkbox"/> beaver dam	_____		<input type="checkbox"/> to follow
		<input type="checkbox"/> siltation	_____		
	<input type="checkbox"/> blockage of outlet	<input type="checkbox"/> debris	_____	corrective action:	<input type="checkbox"/> taken
		<input type="checkbox"/> beaver dam	_____		<input type="checkbox"/> to follow
		<input type="checkbox"/> siltation	_____		
	<input type="checkbox"/> erosion	<input type="checkbox"/> channel	_____	corrective action:	<input type="checkbox"/> taken
		<input type="checkbox"/> side slope	_____		<input type="checkbox"/> to follow
		<input type="checkbox"/> at discharge	_____		

2021 Inspection - Duck Pond Tailings Management Facility

Client: Teck Resources Limited

Project Number: 21455283

Site Location: Dam B

Photographed by: P. Merry

Date: September 30, 2020

Drawn By: P. Merry

Photograph 1

Dam B upstream shell and crest looking north from Sta. 0+500



Photograph 2

Dam B upstream shell looking south from north abutment.



2021 Inspection - Duck Pond Tailings Management Facility

Client: Teck Resources Limited

Project Number: 21455283

Site Location: Dam B

Photographed by: P. Merry

Date: September 30, 2020

Drawn By: P. Merry

Photograph 3

Dam B crest and downstream slope looking south from Sta. 0+250.



Photograph 4

Downstream toe and Dam B seepage collection sump. Seepage and local runoff accumulates at this location then migrates through the wetland towards the Polishing Pond.



2021 Inspection - Duck Pond Tailings Management Facility

Client: Teck Resources Limited

Project Number: 21455283

Site Location: Dam B

Photographed by: P. Merry

Date: September 30, 2020

Drawn By: P. Merry

Photograph 5

Piezometer surface casings on Dam B at Sta. 0+300. The surface casings were extended in 2019 to prevent surface runoff entering the piezometers.



Photograph 6

Surface casing over the Dam B settlement plate.



2021 Inspection - Duck Pond Tailings Management Facility

Client: Teck Resources Limited

Project Number: 21455283

Site Location: Dam B

Photographed by: P. Merry

Date: September 30, 2020

Drawn By: P. Merry

Photograph 7

Downstream shell of Dam B looking south from Sta. 0+050.

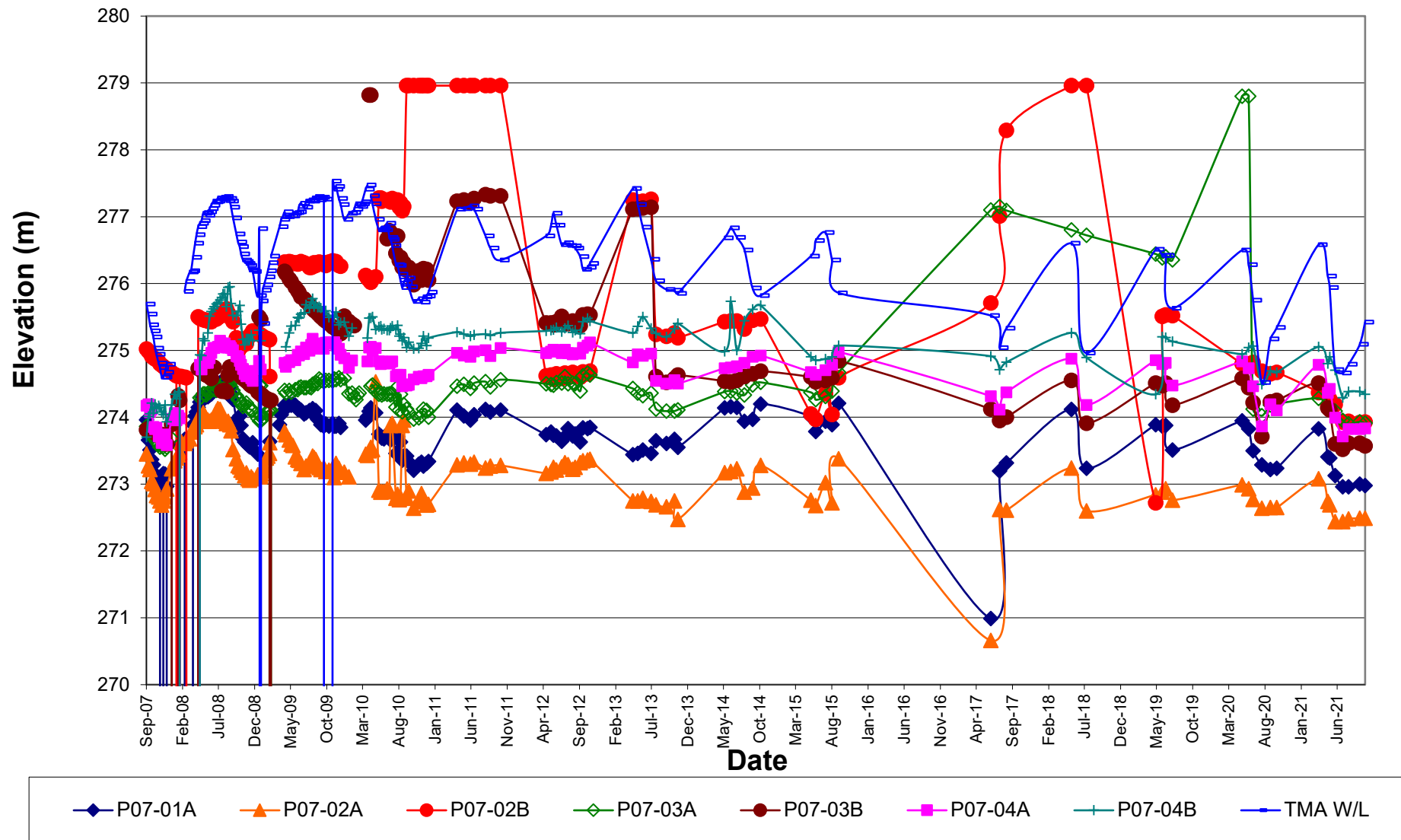


Photograph 8

Downstream slope of Dam B at Sta. 0+300 looking south.



DUCK POND OPERATIONS TMA PIEZOMETERS



**DUCK POND TAILINGS MANAGEMENT FACILITY
FIELD INSPECTION FORM A
DAM INSPECTION REPORT**

Sheet 1 of 3

All parts of this inspection form should be completed. Adverse conditions should be described and location stated. Additional information and relevant photographs should be attached.

Inspector's Name: Peter Merry Report No.: 21-01 Inspection Date: 17/08/2021
Golder Associates (DD/MM/YYYY)

DAM INFORMATION:

Identification: Dam C Crest Elevation: 268.0 m Head Pond Elevation 264.9 m

Note: Position measurements are in UTM, WGS 84

DAM INSPECTION

A) Crest

cracking	<input checked="" type="checkbox"/> none	<input type="checkbox"/>	_____
settlement	<input checked="" type="checkbox"/> none	<input type="checkbox"/>	_____
erosion	<input checked="" type="checkbox"/> none	<input type="checkbox"/>	_____
other movement	<input checked="" type="checkbox"/> none	<input type="checkbox"/>	_____
crest vegetation	<input checked="" type="checkbox"/> none	<input type="checkbox"/>	_____

B) Downstream Slope and Toe Area

erosion	<input checked="" type="checkbox"/> none	<input type="checkbox"/>	_____
settlement	<input checked="" type="checkbox"/> none	<input type="checkbox"/>	_____
bulging	<input checked="" type="checkbox"/> none	<input type="checkbox"/>	_____
sloughing	<input checked="" type="checkbox"/> none	<input type="checkbox"/>	_____
slope protection	<input checked="" type="checkbox"/> good	<input type="checkbox"/>	_____
slope vegetation	<input checked="" type="checkbox"/> none	<input type="checkbox"/>	_____
animal burrows	<input checked="" type="checkbox"/> none	<input type="checkbox"/>	_____
seepage	<input type="checkbox"/> none	<input checked="" type="checkbox"/>	_____

location 1: Some ponded water along southern half downstream toe. No visible seepage observed.

rate: damp trickle steady _____ (L/s)

clarity: clear muddy

sample taken: yes no

location 2:

rate damp trickle steady _____ (L/s)

clarity clear muddy

sample taken yes no

toe vegetation none sparse moderate heavy

type: Grasses and shrubs

sand boils none location(s) _____

**DUCK POND TAILINGS MANAGEMENT FACILITY
FIELD INSPECTION FORM A
DAM INSPECTION REPORT**

Sheet 2 of 3

C) Upstream Slope and Tailings Surface

erosion	<input checked="" type="checkbox"/> none	<input type="checkbox"/> wave induced	<input type="checkbox"/> surface runoff
		location(s):	
		degree	<input type="checkbox"/> minor <input type="checkbox"/> moderate <input type="checkbox"/> severe
settlement	<input checked="" type="checkbox"/> none	<input type="checkbox"/>	_____
bulging	<input checked="" type="checkbox"/> none	<input type="checkbox"/>	_____
sloughing	<input checked="" type="checkbox"/> none	<input type="checkbox"/>	_____
slope protection	<input checked="" type="checkbox"/> good	<input type="checkbox"/>	_____
slope vegetation	<input checked="" type="checkbox"/> none	<input type="checkbox"/>	_____
animal burrows	<input checked="" type="checkbox"/> none	<input type="checkbox"/>	_____
whirlpool	<input checked="" type="checkbox"/> none	<input type="checkbox"/>	_____
sinkholes	<input checked="" type="checkbox"/> none	<input type="checkbox"/>	_____
tailings surface	<input type="checkbox"/> water covered	<input type="checkbox"/>	Not applicable to Polishing Pond, no tailings deposited.

SPILLWAY / FLOW CONTROL STRUCTURE INSPECTION

Type: Water level in Polishing Pond controlled by Decant Structure.

- | | |
|--|---|
| <input checked="" type="checkbox"/> spillway | <input type="checkbox"/> water reclaim well |
| <input checked="" type="checkbox"/> decant | <input checked="" type="checkbox"/> weir (at Hydraulic Discharge Structure) |
| | <input type="checkbox"/> other |

No flow in spillway. Hydraulic discharge structure was not operating

Flow:	<input checked="" type="checkbox"/> none	<input type="checkbox"/> clear	<input type="checkbox"/> muddy
Rate of discharge	(m ³ /hr)	<input type="checkbox"/> estimated	<input type="checkbox"/> measured
			Gauge Reading _____

Conditions Observed: Hydraulic Discharge Structure

<input type="checkbox"/> good	<input checked="" type="checkbox"/> blockage of inlet	<input checked="" type="checkbox"/> debris	CSP is rusting	corrective action:	<input type="checkbox"/> taken
		<input type="checkbox"/> beaver dam	_____		<input checked="" type="checkbox"/> to follow
		<input type="checkbox"/> siltation	_____		Monitor for deterioration
	<input type="checkbox"/> blockage of outlet	<input type="checkbox"/> debris	_____	corrective action:	<input type="checkbox"/> taken
		<input type="checkbox"/> beaver dam	_____		<input type="checkbox"/> to follow
		<input type="checkbox"/> siltation	_____		
	<input type="checkbox"/> erosion	<input type="checkbox"/> channel	_____	corrective action:	<input type="checkbox"/> taken
		<input type="checkbox"/> side slope	_____		<input type="checkbox"/> to follow
		<input type="checkbox"/> at discharge	_____		

**DUCK POND TAILINGS MANAGEMENT FACILITY
FIELD INSPECTION FORM A
DAM INSPECTION REPORT**

Sheet 3 of 3

DAM INSTRUMENTATION: (plot any newly installed instrumentation on relevant plans and cross-sections)

	<u>Operational</u>	<u>Damaged</u>	<u>Measurement Taken</u>
<input type="checkbox"/> none			
<input checked="" type="checkbox"/> piezometers	<input checked="" type="checkbox"/> BH 07-05 & 07-06	<input type="checkbox"/>	<input checked="" type="checkbox"/> monthly by mine personnel
<input checked="" type="checkbox"/> monitoring wells	<input checked="" type="checkbox"/> MW-3	<input type="checkbox"/>	<input checked="" type="checkbox"/> by mine personnel
<input type="checkbox"/> survey monuments	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> other _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

COMMENTS AND RECOMMENDATIONS:

1. Dam C is in good condition based on the visual assessment.
2. Piezometric water levels have fluctuated frequently as expected due to the changing water levels in the Polishing Pond while Duck Pond Operations discharges water to the environment.
3. Piezometers P07-06B and P07-06A have experienced water levels above the Polishing Pond level in recent years. In 2019, the surface casings were extended to prevent surface runoff from entering the casing. Since the casings were extended in 2019, the water levels in piezometer P07-6A have returned to historical normals but piezometer P07-06B is still showing fluctuating water levels above the Polishing Pond level. It is however noted that the most recent reading in October 2021 is lower and consistent with the other piezometers. The piezometers should continue to be monitored for changing conditions.
4. The water level in the Polishing Pond was 264.89 m at the time of the inspection which is 0.31 m below the maximum operating water level of 265.2 m. However, the pond has historically operated above the maximum operating water level. Operating the pond above 265.2 m requires close monitoring during storm events. Teck should keep themselves familiar with the OMS Manual that describes allowable water levels in the pond to store discrete storm events and the spring melt.
5. Minor rusting was observed around the inlet of the Decant Structure similar to previous years. The structure should be monitored for changing conditions that might affect its integrity.
6. The drain valve on the Discharge Structure has corroded and is difficult to open and close. The valve should be replaced to maintain a tight seal.
7. The Polishing Pond is not intended to act as a water treatment pond. Following recommendations in previous years, Teck completed a sampling program (executed by Wood) in the Polishing Pond to determine if any sludge has accumulated at the base of the pond. The results identified elevated concentrations of some metals. The accumulated sludge will need to be capped for Passive Closure or relocated to the TMA. An allowance for managing the sludge has been included in the site Closure Plan and this item is considered closed until passive closure is implemented.
8. Vegetation was cleared from the downstream toe and the seepage collection ditch re-excavated in 2021 north of the discharge structure to promote visual surveillance of seepage conditions.

- | | | | | |
|---|-------------------------------|--|--------------------------------------|--|
| <input checked="" type="checkbox"/> Action Required: | <input type="checkbox"/> none | <input checked="" type="checkbox"/> further monitoring | <input type="checkbox"/> maintenance | <input type="checkbox"/> immediate remediation |
| <input checked="" type="checkbox"/> Plan or Sketch Attached | Figure 2 | | | |
| <input checked="" type="checkbox"/> Photographs Attached | 1 – 6 | | | |

Reviewer's Name: Siavash Farhangi Date Reviewed: 24/01/2022
Golder Associates (DD/MM/YYYY)

REVIEW COMMENTS: none

2021 Inspection - Duck Pond Tailings Management Facility

Client: Teck Resources Limited

Project Number: 21455283

Site Location: Dam C

Photographed by: P. Merry

Date: August 17, 2021

Drawn By: P. Merry

Photograph 1

Dam C crest and downstream shell from the north abutment.



Photograph 2

Dam C crest and upstream shell looking north from south abutment.



2021 Inspection - Duck Pond Tailings Management Facility

Client: Teck Resources Limited

Project Number: 21455283

Site Location: Dam C

Photographed by: P. Merry

Date: August 17, 2021

Drawn By: P. Merry

Photograph 3

Dam C decant tower inlet.



Photograph 4

Dam C hydraulic control structure.



2021 Inspection - Duck Pond Tailings Management Facility

Client: Teck Resources Limited

Project Number: 21455283

Site Location: Dam C

Photographed by: P. Merry

Date: August 17, 2021

Drawn By: P. Merry

Photograph 5

Piezometer surface casings on the crest of Dam C at Sta. 0+200. The surface casing was extended in 2019 to prevent surface runoff from entering the piezometers.

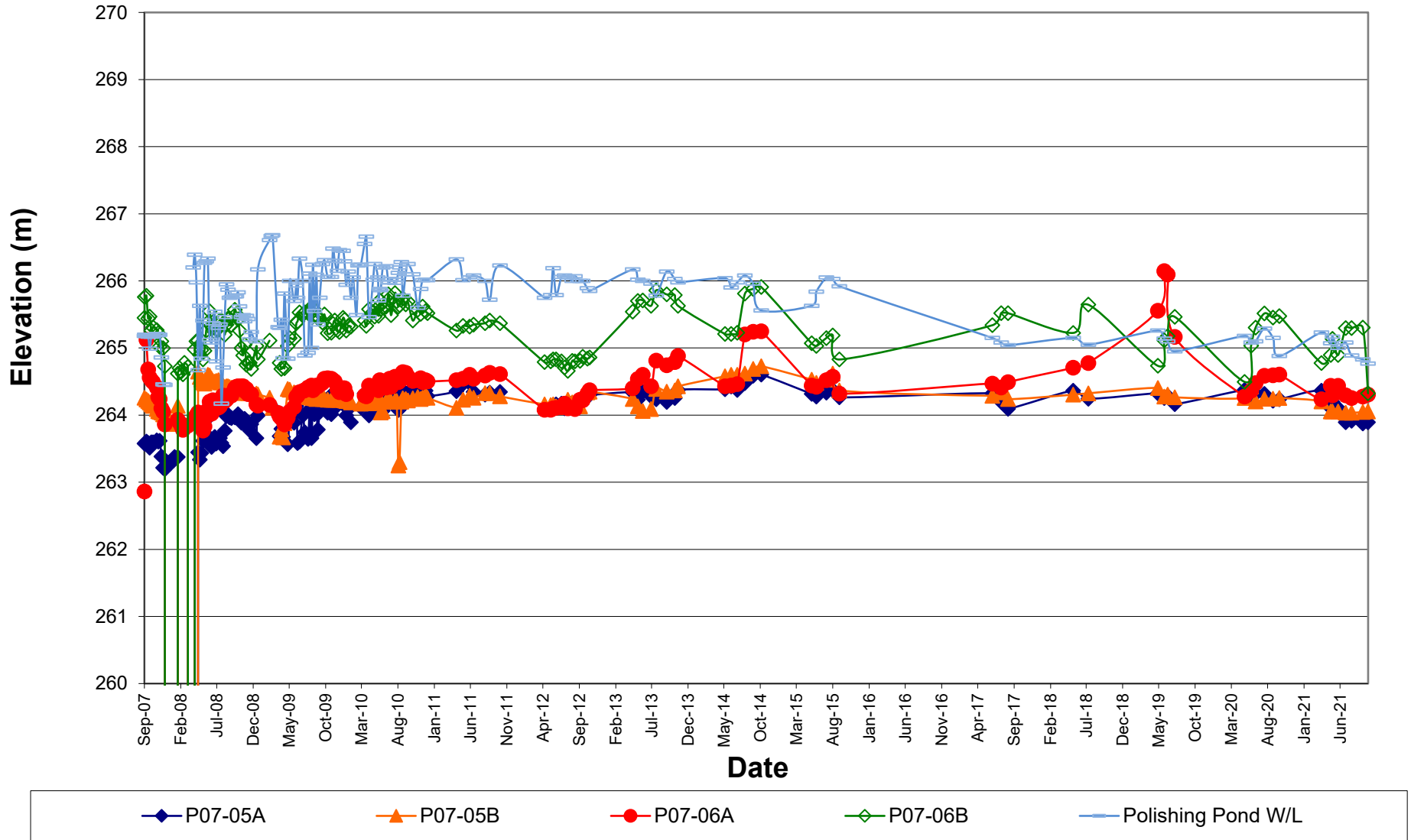


Photograph 6

Downstream shell of Dam C and seepage collection ditch at Sta. 0+200, looking south.



DUCK POND OPERATIONS POLISHING POND PIEZOMETERS



**DUCK POND TAILINGS MANAGEMENT FACILITY
FIELD INSPECTION FORM A
DAM INSPECTION REPORT**

Sheet 1 of 3

All parts of this inspection form should be completed. Adverse conditions should be described and location stated. Additional information and relevant photographs should be attached.

Inspector's Name: Peter Merry Report No.: 21-01 Inspection Date: 17/08/2021
Golder Associates (DD/MM/YYYY)

DAM INFORMATION:

Identification: TMA Internal Berms Crest Elevation: 278.5 m Head Pond Elevation 274.8 m

DAM INSPECTION

A) Crest

cracking	<input checked="" type="checkbox"/> none	<input type="checkbox"/>	_____
settlement	<input checked="" type="checkbox"/> none	<input type="checkbox"/>	_____
erosion	<input checked="" type="checkbox"/> none	<input type="checkbox"/>	_____
other movement	<input checked="" type="checkbox"/> none	<input type="checkbox"/>	_____
crest vegetation	<input checked="" type="checkbox"/> none	<input type="checkbox"/>	_____

B) West Slope and Toe Area

erosion	<input checked="" type="checkbox"/> none	<input type="checkbox"/>	_____
settlement	<input checked="" type="checkbox"/> none	<input type="checkbox"/>	_____
bulging	<input checked="" type="checkbox"/> none	<input type="checkbox"/>	_____
sloughing	<input checked="" type="checkbox"/> none	<input type="checkbox"/>	_____
slope protection	<input checked="" type="checkbox"/> good	<input type="checkbox"/>	_____
slope vegetation	<input checked="" type="checkbox"/> none	<input type="checkbox"/>	_____
animal burrows	<input checked="" type="checkbox"/> none	<input type="checkbox"/>	_____
seepage	<input checked="" type="checkbox"/> none	<input type="checkbox"/>	location 1: _____
			rate: <input type="checkbox"/> damp <input type="checkbox"/> trickle <input type="checkbox"/> steady _____ (L/s)
			clarity: <input type="checkbox"/> clear <input type="checkbox"/> muddy _____
			sample taken: <input type="checkbox"/> yes <input type="checkbox"/> no _____
			location 2: _____
			rate <input type="checkbox"/> damp <input type="checkbox"/> trickle <input type="checkbox"/> steady _____ (L/s)
			clarity <input type="checkbox"/> clear <input type="checkbox"/> muddy _____
			sample taken <input type="checkbox"/> yes <input type="checkbox"/> no _____
toe vegetation	<input checked="" type="checkbox"/> none	<input type="checkbox"/>	sparse <input type="checkbox"/> moderate <input type="checkbox"/> heavy _____
			type: <u>Shrubs</u>
sand boils	<input checked="" type="checkbox"/> none	<input type="checkbox"/>	location(s) _____

**DUCK POND TAILINGS MANAGEMENT FACILITY
FIELD INSPECTION FORM A
DAM INSPECTION REPORT**

Dam Identification: TMA Internal Berms

C) East Slope

erosion	<input checked="" type="checkbox"/> none	<input type="checkbox"/> wave induced	<input type="checkbox"/> surface runoff
		location(s):	_____
		Degree	<input type="checkbox"/> minor <input type="checkbox"/> moderate <input type="checkbox"/> severe
settlement	<input checked="" type="checkbox"/> none	<input type="checkbox"/>	_____
bulging	<input checked="" type="checkbox"/> none	<input type="checkbox"/>	_____
sloughing	<input checked="" type="checkbox"/> none	<input type="checkbox"/>	_____
slope protection	<input checked="" type="checkbox"/> good	<input type="checkbox"/>	_____
slope vegetation	<input checked="" type="checkbox"/> none	<input type="checkbox"/>	_____
animal burrows	<input checked="" type="checkbox"/> none	<input type="checkbox"/>	_____
whirlpool	<input checked="" type="checkbox"/> none	<input type="checkbox"/>	_____
sinkholes	<input checked="" type="checkbox"/> none	<input type="checkbox"/>	_____
tailings surface	<input type="checkbox"/> water covered	<input checked="" type="checkbox"/>	Some exposed tailings in TMA

SPILLWAY / FLOW CONTROL STRUCTURE INSPECTION

Type:

<input checked="" type="checkbox"/> spillway	<input type="checkbox"/> water reclaim well
<input type="checkbox"/> decant	<input type="checkbox"/> Weir (at Hydraulic Discharge Structure)
	<input checked="" type="checkbox"/> other <u>HDPE culverts present to maintain a consistent water level in TMF.</u>

Flow: none

Rate of discharge m³/hr clear muddy

estimated measured Gauge Reading

Conditions Observed:

<input checked="" type="checkbox"/> good	<input type="checkbox"/> blockage of inlet	<input type="checkbox"/> debris	corrective action:	<input type="checkbox"/> taken
		<input type="checkbox"/> beaver dam		<input type="checkbox"/> to follow
		<input type="checkbox"/> siltation		_____
	<input type="checkbox"/> blockage of outlet	<input type="checkbox"/> debris	corrective action:	<input type="checkbox"/> taken
		<input type="checkbox"/> beaver dam		<input type="checkbox"/> to follow
		<input type="checkbox"/> siltation		_____
	<input type="checkbox"/> erosion	<input type="checkbox"/> channel	corrective action:	<input type="checkbox"/> taken
		<input type="checkbox"/> side slope		<input type="checkbox"/> to follow
		<input type="checkbox"/> at discharge		_____

Comments:

**DUCK POND TAILINGS MANAGEMENT FACILITY
FIELD INSPECTION FORM A
DAM INSPECTION REPORT**

Sheet 3 of 3

Dam Identification: TMA Internal Berms

DAM INSTRUMENTATION: (plot any newly installed instrumentation on relevant plans and cross-sections)

	<u>Operational</u>	<u>Damaged</u>	<u>Measurement Taken</u>
<input type="checkbox"/> none			
<input type="checkbox"/> piezometers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> monitoring wells	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/> survey monuments	<input checked="" type="checkbox"/> S17-01, S17-02, S17-03	<input type="checkbox"/>	<input checked="" type="checkbox"/> Landmark Surveys & Engineering
<input type="checkbox"/> other _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

COMMENTS AND RECOMMENDATIONS:

1. Internal Berms are in good condition based on the visual assessment.
2. Placement of contaminated soils between the finger dykes occurred in 2018, 2019, 2020, and 2021. Additional material will be placed in the TMA in 2022 when the mill and plant site is demolished.
3. A wave of tailings was observed along the side of most berms from construction. The tailings wave may need to be dredged and deposited below elevation 274.2 m once placement of the contaminated soils is completed. A bathymetric survey will be required upon completion of the construction activities to determine the extent of dredging. Alternatively, Teck could initiate a study to re-evaluate the closure cover water depth and necessity to maintain currently proposed 2.65 m of water over the tailings.
4. The settlement plates are showing some minor settlement is occurring but is in-line with expectations for the berms constructed over loose tailings. The 2021 survey data indicates the berms have settled 0.5 cm (Berm 1), 0.7 cm (Berm 2), and 3.4 cm (Berm 3) since the initial survey in 2018.

Action Required:
 none
 further monitoring
 maintenance
 immediate remediation
 Plan or Sketch Attached Figure 2
 Photographs Attached 1 – 8

Reviewer's Name: Siavash Farhangi Date Reviewed: 24/01/2022
Golder Associates (DD/MM/YYYY)

REVIEW COMMENTS: none

2021 Inspection - Duck Pond Tailings Management Facility

Client: Teck Resources Limited

Project Number: 21455283

Site Location: Internal Berms

Photographed by: P. Merry

Date: August 17, 2021

Drawn By: P. Merry

Photograph 1

Berm 1 east slope with HDPE culvert and lime addition pipeline.



Photograph 2

Berm 1 looking south near north abutment with HPDE culvert connecting Cells 1 and 2.



2021 Inspection - Duck Pond Tailings Management Facility

Client: Teck Resources Limited

Project Number: 21455283

Site Location: Internal Berms

Photographed by: P. Merry

Date: August 17, 2021

Drawn By: . Peach

Photograph 3

Berm 2 north abutment looking south with HPDE culvert connecting Cells 2 and 3.



Photograph 4

Berm 2 east slope, looking south. HDPE culvert connecting Cells 2 and 3 in the background and protective casing on settlement plate in foreground.



2021 Inspection - Duck Pond Tailings Management Facility

Client: Teck Resources Limited

Project Number: 21455283

Site Location: Internal Berms

Photographed by: P. Merry

Date: August 17, 2021

Drawn By: . Peach

Photograph 5

Berm 3 west slope looking north with culvert connecting Cells 3 and 4



Photograph 6

Berm 3 east slope looking south. Lime addition pipeline and T-valve to control treatment in Cells 3 and 4.



2021 Inspection - Duck Pond Tailings Management Facility

Client: Teck Resources Limited

Project Number: 21455283

Site Location: Internal Berms

Photographed by: P. Merry

Date: August 17, 2021

Drawn By: . Peach

Photograph 7

View of Finger Dyke 4, looking south.



Photograph 8

Finger Dyke 1 looking north.



**DUCK POND TAILINGS MANAGEMENT FACILITY
FIELD INSPECTION FORM B
DITCHES, CHANNELS & MISCELLANEOUS ITEMS**

Sheet 1 of 2

All parts of this inspection form should be completed. Adverse conditions should be described and location stated. Additional information and relevant photographs should be attached.

Inspector's Name: Peter Merry Report No.: 21-01 Inspection Date: 17/08/2021
Golder Associates (DD/MM/YYYY)

DITCHES & CHANNELS:

Identification: Dam B Emergency Spillway and Channel Inlet Invert Elevation: 277.7 m

Flow Control Structure: none Concrete sill

A) Inlet Conditions

- | | | | |
|--|--|--|--|
| <input checked="" type="checkbox"/> good | <input type="checkbox"/> scour & erosion | <input type="checkbox"/> debris | |
| | <input type="checkbox"/> blockage | <input type="checkbox"/> beaver dam | |
| | | <input type="checkbox"/> siltation | |
| | | <input type="checkbox"/> vegetation | |
| <input type="checkbox"/> slope or bank | <input type="checkbox"/> erosion | <input type="checkbox"/> failure/instability | |
| corrective action | <input type="checkbox"/> taken | <input type="checkbox"/> to follow | |

B) Outlet Conditions

- | | | | |
|--|--|--|--|
| <input checked="" type="checkbox"/> good | <input type="checkbox"/> scour & erosion | <input type="checkbox"/> debris | |
| | <input type="checkbox"/> blockage | <input type="checkbox"/> beaver dam | |
| | | <input type="checkbox"/> siltation | |
| | | <input type="checkbox"/> vegetation | |
| <input type="checkbox"/> slope or bank | <input type="checkbox"/> erosion | <input type="checkbox"/> failure/instability | |
| corrective action | <input type="checkbox"/> taken | <input type="checkbox"/> to follow | |

ACCESS ROADS / SHORELINE:

Location: <u>N/A</u>	<input type="checkbox"/> vegetation	Location: <u>N/A</u>	<input type="checkbox"/> vegetation
	<input type="checkbox"/> debris		<input type="checkbox"/> debris
	<input type="checkbox"/> erosion		<input type="checkbox"/> erosion

**DUCK POND TAILINGS MANAGEMENT FACILITY
FIELD INSPECTION FORM B
DITCHES, CHANNELS & MISCELLANEOUS ITEMS**

CULVERTS

Location: <u>Beneath mine site access road</u>	<input checked="" type="checkbox"/> good	<input type="checkbox"/> blocked	<input type="checkbox"/> damaged	<u>Three CSP culverts</u>
Location: _____	<input type="checkbox"/> good	<input type="checkbox"/> blocked	<input type="checkbox"/> damaged	_____
Location: _____	<input type="checkbox"/> good	<input type="checkbox"/> blocked	<input type="checkbox"/> damaged	_____
Location: _____	<input type="checkbox"/> good	<input type="checkbox"/> blocked	<input type="checkbox"/> damaged	_____
Location: _____	<input type="checkbox"/> good	<input type="checkbox"/> blocked	<input type="checkbox"/> damaged	_____

PIPELINES - None

<input type="checkbox"/> good	<input type="checkbox"/> damaged	_____
<input type="checkbox"/> good	<input type="checkbox"/> damaged	_____
<input type="checkbox"/> good	<input type="checkbox"/> damaged	_____
<input type="checkbox"/> good	<input type="checkbox"/> damaged	_____
<input type="checkbox"/> good	<input type="checkbox"/> damaged	_____
<input type="checkbox"/> good	<input type="checkbox"/> damaged	_____
<input type="checkbox"/> good	<input type="checkbox"/> damaged	_____

COMMENTS AND RECOMMENDATIONS:

1. The spillway is in good condition and generally clear of debris.
2. Vegetation was cleared from the spillway in 2021 to maintain it flow capacity and permit visual surveillance.

<input checked="" type="checkbox"/> Action Required:	<input checked="" type="checkbox"/> none	<input type="checkbox"/> further monitoring	<input type="checkbox"/> maintenance	<input type="checkbox"/> immediate remediation
<input checked="" type="checkbox"/> Plan or Sketch Attached	Figure 2			
<input checked="" type="checkbox"/> Photographs Attached	1 - 8			

Reviewer's Name: <u>Siavash Farhangi</u>	Date Reviewed: <u>24/01/2022</u>
<u>Golder Associates</u>	<u>(DD/MM/YYYY)</u>

REVIEW COMMENTS: none

2021 Inspection - Duck Pond Tailings Management Facility

Client: Teck Resources Limited

Project Number: 21455283

Site Location: Dam B Emergency Spillway and Channel

Photographed by: P. Merry

Date: August 17, 2021

Drawn By: P. Merry

Photograph 1

Dam B emergency spillway concrete sill.



Photograph 2

Dam B Emergency Spillway inlet channel looking towards the TMA.



2021 Inspection - Duck Pond Tailings Management Facility

Client: Teck Resources Limited

Project Number: 21455283

Site Location: Dam B Emergency Spillway and Channel

Photographed by: P. Merry

Date: August 17, 2021

Drawn By: . Peach

Photograph 3

View of Dam B Spillway channel looking northeast from culverts along Mine Access Road.



Photograph 4

Dam B spillway channel at confluence with Diversion Ditch B1, looking west towards the mine site access road.



2021 Inspection - Duck Pond Tailings Management Facility

Client: Teck Resources Limited

Project Number: 21455283

Site Location: Dam B Emergency Spillway and Channel

Photographed by: P. Merry

Date: August 17, 2021

Drawn By: . Peach

Photograph 5

Dam B Emergency Spillway Channel looking east from the Mine Site Access Road. Spillway channel was clear of debris in 2021.



Photograph 6

Inlet of culverts beneath the Mine Site Access Road.



2021 Inspection - Duck Pond Tailings Management Facility

Client: Teck Resources Limited

Project Number: 21455283

Site Location: Dam B Emergency Spillway and Channel

Photographed by: P. Merry

Date: August 17, 2021

Drawn By: . Peach

Photograph 7

Dam B Emergency Spillway Channel looking west from Sta. 0+750.



Photograph 8

Historical erosion on channel near Sta. 0+900 was repaired in 2018 with additional rip rap.



**DUCK POND TAILINGS MANAGEMENT FACILITY
FIELD INSPECTION FORM B
DITCHES, CHANNELS & MISCELLANEOUS ITEMS**

Sheet 1 of 2

All parts of this inspection form should be completed. Adverse conditions should be described and location stated. Additional information and relevant photographs should be attached.

Inspector's Name: Peter Merry Report No.: 21-01 Inspection Date: 17/08/2021
Golder Associates (DD/MM/YYYY)

DITCHES & CHANNELS:

Identification: Dam C Emergency Spillway Inlet Invert Elevation: 267.2 m

Flow Control Structure: none Concrete sill

A) Inlet Conditions

- | | | | |
|--|--|--|-------|
| <input checked="" type="checkbox"/> good | <input type="checkbox"/> scour & erosion | <input type="checkbox"/> debris | <hr/> |
| | <input type="checkbox"/> blockage | <input type="checkbox"/> beaver dam | <hr/> |
| | | <input type="checkbox"/> siltation | <hr/> |
| | | <input type="checkbox"/> vegetation | <hr/> |
| <input type="checkbox"/> slope or bank | <input type="checkbox"/> erosion | <input type="checkbox"/> failure/instability | <hr/> |
| corrective action | <input type="checkbox"/> taken | <input type="checkbox"/> to follow | <hr/> |
| | | | <hr/> |

B) Outlet Conditions

- | | | | |
|--|--|--|-------|
| <input checked="" type="checkbox"/> good | <input type="checkbox"/> scour & erosion | <input type="checkbox"/> debris | <hr/> |
| | <input type="checkbox"/> blockage | <input type="checkbox"/> beaver dam | <hr/> |
| | | <input type="checkbox"/> siltation | <hr/> |
| | | <input type="checkbox"/> vegetation | <hr/> |
| <input type="checkbox"/> slope or bank | <input type="checkbox"/> erosion | <input type="checkbox"/> failure/instability | <hr/> |
| corrective action | <input type="checkbox"/> taken | <input type="checkbox"/> to follow | <hr/> |
| | | | <hr/> |

ACCESS ROADS / SHORELINE:

Location: <u>N/A</u>	<input type="checkbox"/> vegetation	Location: <u>N/A</u>	<input type="checkbox"/> vegetation
	<input type="checkbox"/> debris		<input type="checkbox"/> debris
	<input type="checkbox"/> erosion		<input type="checkbox"/> erosion

**DUCK POND TAILINGS MANAGEMENT FACILITY
FIELD INSPECTION FORM B
DITCHES, CHANNELS & MISCELLANEOUS ITEMS**

CULVERTS - None

Location: _____	<input type="checkbox"/> good	<input type="checkbox"/> blocked	<input type="checkbox"/> damaged	_____
Location: _____	<input type="checkbox"/> good	<input type="checkbox"/> blocked	<input type="checkbox"/> damaged	_____
Location: _____	<input type="checkbox"/> good	<input type="checkbox"/> blocked	<input type="checkbox"/> damaged	_____
Location: _____	<input type="checkbox"/> good	<input type="checkbox"/> blocked	<input type="checkbox"/> damaged	_____
Location: _____	<input type="checkbox"/> good	<input type="checkbox"/> blocked	<input type="checkbox"/> damaged	_____

PIPELINES - None

<input type="checkbox"/> good	<input type="checkbox"/> damaged	_____
<input type="checkbox"/> good	<input type="checkbox"/> damaged	_____
<input type="checkbox"/> good	<input type="checkbox"/> damaged	_____
<input type="checkbox"/> good	<input type="checkbox"/> damaged	_____
<input type="checkbox"/> good	<input type="checkbox"/> damaged	_____
<input type="checkbox"/> good	<input type="checkbox"/> damaged	_____
<input type="checkbox"/> good	<input type="checkbox"/> damaged	_____

COMMENTS AND RECOMMENDATIONS:

1. Dam C Spillway is in good condition.
2. Vegetation was cleared from the spillway in 2021 to maintain its flow capacity and permit visual inspection.

<input checked="" type="checkbox"/> Action Required:	<input checked="" type="checkbox"/> none	<input type="checkbox"/> further monitoring	<input type="checkbox"/> maintenance	<input type="checkbox"/> immediate remediation
<input checked="" type="checkbox"/> Plan or Sketch Attached	Figure 2			
<input checked="" type="checkbox"/> Photographs Attached	1 - 4			

Reviewer's Name: <u>Siavash Farhangi</u>	Date Reviewed: <u>24/01/2022</u>
Golder Associates	(DD/MM/YYYY)

REVIEW COMMENTS: none

2021 Inspection – Duck Pond Tailings Management Facility

Client: Teck Resources Limited

Project Number: 21455283

Site Location: Dam C Emergency Spillway and Channel

Photographed by: P. Merry

Date: August 17, 2021

Drawn By: P. Merry

Photograph 1

Dam C Emergency Spillway inlet channel with the Polishing Pond in the background.



Photograph 2

Dam C Emergency Spillway concrete sill becoming overgrown with vegetation.



2021 Inspection – Duck Pond Tailings Management Facility

Client: Teck Resources Limited

Project Number: 21455283

Site Location: Dam C Emergency Spillway and Channel

Photographed by: P. Merry

Date: August 17, 2021

Drawn By: P. Merry

Photograph 3

Dam C Emergency Spillway channel looking downstream.



Photograph 4

Dam C Emergency Spillway outlet channel, looking downstream from the end of the rip rap lined section.



**DUCK POND TAILINGS MANAGEMENT FACILITY
FIELD INSPECTION FORM B
DITCHES, CHANNELS & MISCELLANEOUS ITEMS**

Sheet 1 of 2

All parts of this inspection form should be completed. Adverse conditions should be described and location stated. Additional information and relevant photographs should be attached.

Inspector's Name: Peter Merry Report No.: 21-01 Inspection Date: 17/08/2021
Golder Associates (DD/MM/YYYY)

DITCHES & CHANNELS:

Identification: Diversion Ditches A1, A2, B1, C1 Inlet Invert Elevation: Varies

Flow Control Structure: none Culverts at road crossings

A) Inlet/Outlet Conditions

- | | | | |
|--|--|--|-------|
| <input checked="" type="checkbox"/> good | <input type="checkbox"/> scour & erosion | | |
| | <input type="checkbox"/> blockage | <input type="checkbox"/> debris | <hr/> |
| | | <input type="checkbox"/> beaver dam | <hr/> |
| | | <input type="checkbox"/> siltation | <hr/> |
| | | <input type="checkbox"/> vegetation | <hr/> |
| <input type="checkbox"/> slope or bank | | <input type="checkbox"/> erosion | <hr/> |
| | | <input type="checkbox"/> failure/instability | <hr/> |
| corrective action | | <input type="checkbox"/> taken | <hr/> |
| | | <input type="checkbox"/> to follow | <hr/> |

B) Channel Conditions

- | | | | |
|--|--|--|-------|
| <input checked="" type="checkbox"/> good | <input type="checkbox"/> scour & erosion | | |
| | <input type="checkbox"/> blockage | <input type="checkbox"/> debris | <hr/> |
| | | <input type="checkbox"/> beaver dam | <hr/> |
| | | <input type="checkbox"/> siltation | <hr/> |
| | | <input type="checkbox"/> vegetation | <hr/> |
| <input type="checkbox"/> slope or bank | | <input type="checkbox"/> erosion | <hr/> |
| | | <input type="checkbox"/> failure/instability | <hr/> |
| corrective action | | <input type="checkbox"/> taken | <hr/> |
| | | <input type="checkbox"/> to follow | <hr/> |

ACCESS ROADS / SHORELINE:

Location: <u>N/A</u>	<input type="checkbox"/> vegetation	Location: <u>N/A</u>	<input type="checkbox"/> vegetation
	<input type="checkbox"/> debris		<input type="checkbox"/> debris
	<input type="checkbox"/> erosion		<input type="checkbox"/> erosion

2021 Inspection – Duck Pond Tailings Management Facility

Client: Teck Resources Limited

Project Number: 21455283

Site Location: Diversion Ditches A1, A2, B1, C1

Photographed by: P. Merry

Date: August 17, 2021

Drawn By: P. Merry

Photograph 1

Diversion Ditch A1 looking west from Sta. 0+800.



Photograph 2

Diversion Ditch A1 looking west from Sta. 0+200.



2021 Inspection – Duck Pond Tailings Management Facility

Client: Teck Resources Limited

Project Number: 21455283

Site Location: Diversion Ditches A1, A2, B1, C1

Photographed by: P. Merry

Date: August 17, 2021

Drawn By: P. Merry

Photograph 3

Diversion Ditch A2 culvert outlets at the access road crossing.



Photograph 4

Diversion Ditch A2 at Sta. 0+350 looking west. Culvert was installed in the ditch for the buried pipeline from Boundary site.



2021 Inspection – Duck Pond Tailings Management Facility

Client: Teck Resources Limited

Project Number: 21455283

Site Location: Diversion Ditches A1, A2, B1, C1

Photographed by: P. Merry

Date: August 17, 2021

Drawn By: P. Merry

Photograph 5

Diversion Ditch A2 looking east from Sta. 0+100.



Photograph 6

Diversion Ditch B1 looking east from Sta. 0+500.



2021 Inspection – Duck Pond Tailings Management Facility

Client: Teck Resources Limited

Project Number: 21455283

Site Location: Diversion Ditches A1, A2, B1, C1

Photographed by: P. Merry

Date: August 17, 2021

Drawn By: P. Merry

Photograph 7

Diversion Ditch B1 looking east from Sta. 0+700 and the intersection with Dam B Emergency Spillway Channel.



Photograph 8

Diversion Ditch C1 looking at the new HDPE culvert installed in 2021 at the Site Access Road crossing.



2021 Inspection – Duck Pond Tailings Management Facility

Client: Teck Resources Limited

Project Number: 21455283

Site Location: Diversion Ditches A1, A2, B1, C1

Photographed by: P. Merry

Date: August 17, 2021

Drawn By: P. Merry

Photograph 9

Diversion Ditch C1 looking west from Sta. 0+150.



Photograph 10

Diversion Ditch C1, looking east from access road crossing at Sta. 0+750.



2021 Inspection – Duck Pond Tailings Management Facility

Client: Teck Resources Limited

Project Number: 21455283

Site Location: Diversion Ditches A1, A2, B1, C1

Photographed by: P. Merry

Date: August 17, 2021

Drawn By: P. Merry

Photograph 11

View of Diversion Ditch C1 culvert (inlet) at the access road crossing at Sta. 0+750.



Photograph 12

Diversion Ditch C1 at Sta. 0+750, looking southwest.



**DUCK POND TAILINGS MANAGEMENT FACILITY
FIELD INSPECTION FORM B
DITCHES, CHANNELS & MISCELLANEOUS ITEMS**

Sheet 1 of 2

All parts of this inspection form should be completed. Adverse conditions should be described and location stated. Additional information and relevant photographs should be attached.

Inspector's Name: Peter Merry Report No.: 21-01 Inspection Date: 17/08/2021
Golder Associates (DD/MM/YYYY)

DITCHES & CHANNELS:

Identification: Discharge Ditch Inlet Invert Elevation: Varies

Flow Control Structure: none HDPE culvert at Mine Access Road crossing

A) Inlet/Outlet Conditions

- | | | | |
|--|--|--|-------|
| <input checked="" type="checkbox"/> good | <input type="checkbox"/> scour & erosion | <input type="checkbox"/> debris | <hr/> |
| | <input type="checkbox"/> blockage | <input type="checkbox"/> beaver dam | <hr/> |
| | | <input type="checkbox"/> siltation | <hr/> |
| | | <input type="checkbox"/> vegetation | <hr/> |
| <input type="checkbox"/> slope or bank | <input type="checkbox"/> erosion | <input type="checkbox"/> failure/instability | <hr/> |
| corrective action | <input type="checkbox"/> taken | <input type="checkbox"/> to follow | <hr/> |

B) Channel Conditions

- | | | | |
|--|--|--|-------|
| <input checked="" type="checkbox"/> good | <input type="checkbox"/> scour & erosion | <input type="checkbox"/> debris | <hr/> |
| | <input type="checkbox"/> blockage | <input type="checkbox"/> beaver dam | <hr/> |
| | | <input type="checkbox"/> siltation | <hr/> |
| | | <input type="checkbox"/> vegetation | <hr/> |
| <input type="checkbox"/> slope or bank | <input type="checkbox"/> erosion | <input type="checkbox"/> failure/instability | <hr/> |
| corrective action | <input type="checkbox"/> taken | <input type="checkbox"/> to follow | <hr/> |

ACCESS ROADS / SHORELINE:

Location: <u>N/A</u>	<input type="checkbox"/> vegetation	Location: <u>N/A</u>	<input type="checkbox"/> vegetation
	<input type="checkbox"/> debris		<input type="checkbox"/> debris
	<input type="checkbox"/> erosion		<input type="checkbox"/> erosion

2021 Inspection – Duck Pond Tailings Management Facility

Client: Teck Resources Limited

Project Number: 21455283

Site Location: Discharge Ditch

Photographed by: P. Merry

Date: August 17, 2021

Drawn By: A. Peach

Photograph 1

Discharge Ditch Sta. 0+000 looking downstream towards the Polishing Pond.



Photograph 2

Culvert Outlet on Discharge Ditch at Sta. 0+225.



2021 Inspection – Duck Pond Tailings Management Facility

Client: Teck Resources Limited

Project Number: 21455283

Site Location: Discharge Ditch

Photographed by: P. Merry

Date: August 17, 2021

Drawn By: A. Peach

Photograph 3

Discharge Ditch at Sta. 0+220 looking east.



Photograph 4

Discharge Ditch at Sta. 0+250 looking towards the Polishing Pond.



**DUCK POND TAILINGS MANAGEMENT FACILITY
FIELD INSPECTION FORM B
DITCHES, CHANNELS & MISCELLANEOUS ITEMS**

Sheet 1 of 2

All parts of this inspection form should be completed. Adverse conditions should be described and location stated. Additional information and relevant photographs should be attached.

Inspector's Name: Peter Merry Report No.: 21-01 Inspection Date: 17/08/2021
Golder Associates (DD/MM/YYYY)

DITCHES & CHANNELS:

Identification: Pipelines and Access Roads Inlet Invert Elevation: N/A

Flow Control Structure: none _____

A) Inlet Conditions

- | | | | |
|--|--|--|--|
| <input type="checkbox"/> good | <input type="checkbox"/> scour & erosion | <input type="checkbox"/> debris | |
| | <input type="checkbox"/> blockage | <input type="checkbox"/> beaver dam | |
| | | <input type="checkbox"/> siltation | |
| | | <input type="checkbox"/> vegetation | |
| <input type="checkbox"/> slope or bank | <input type="checkbox"/> erosion | <input type="checkbox"/> failure/instability | |
| corrective action | <input type="checkbox"/> taken | <input type="checkbox"/> to follow | |

B) Outlet Conditions

- | | | | |
|--|--|--|--|
| <input type="checkbox"/> good | <input type="checkbox"/> scour & erosion | <input type="checkbox"/> debris | |
| | <input type="checkbox"/> blockage | <input type="checkbox"/> beaver dam | |
| | | <input type="checkbox"/> siltation | |
| | | <input type="checkbox"/> vegetation | |
| <input type="checkbox"/> slope or bank | <input type="checkbox"/> erosion | <input type="checkbox"/> failure/instability | |
| corrective action | <input type="checkbox"/> taken | <input type="checkbox"/> to follow | |

ACCESS ROADS / SHORELINE:

Location: <u>General Access Roads</u>	<input type="checkbox"/> vegetation	Location: _____	<input type="checkbox"/> vegetation
	<input type="checkbox"/> debris		<input type="checkbox"/> debris
	<input type="checkbox"/> erosion		<input type="checkbox"/> erosion

**DUCK POND TAILINGS MANAGEMENT FACILITY
FIELD INSPECTION FORM B
DITCHES, CHANNELS & MISCELLANEOUS ITEMS**

Sheet 2 of 2

CULVERTS

Location: _____	<input type="checkbox"/> good	<input type="checkbox"/> blocked	<input type="checkbox"/> damaged	_____
Location: _____	<input type="checkbox"/> good	<input type="checkbox"/> blocked	<input type="checkbox"/> damaged	_____
Location: _____	<input type="checkbox"/> good	<input type="checkbox"/> blocked	<input type="checkbox"/> damaged	_____
Location: _____	<input type="checkbox"/> good	<input type="checkbox"/> blocked	<input type="checkbox"/> damaged	_____
Location: _____	<input type="checkbox"/> good	<input type="checkbox"/> blocked	<input type="checkbox"/> damaged	_____

PIPELINES

Lime addition pipeline	<input checked="" type="checkbox"/> good	<input type="checkbox"/> damaged	_____
Water reclaim pipeline	<input checked="" type="checkbox"/> good	<input type="checkbox"/> damaged	_____
Discharge pipeline to Polishing Pond	<input checked="" type="checkbox"/> good	<input type="checkbox"/> damaged	_____
	<input type="checkbox"/> good	<input type="checkbox"/> damaged	_____

COMMENTS AND RECOMMENDATIONS:

Only the water reclaim pipeline (for water treatment) and discharge pipeline to the Polishing Pond remain functional from the pipelines utilized during operations.

In 2017 two new pipelines were installed from the water treatment plant to Berms 1 and 3. The pipelines appear to be a combination of 10", 12", and 14" HDPE pipelines with tee valve at the discharge locations to allow flow into all 4 cells (see Photo 4). Teck reports that the pipelines are functioning as required.

<input checked="" type="checkbox"/> Action Required:	<input checked="" type="checkbox"/> none	<input type="checkbox"/> further monitoring	<input type="checkbox"/> maintenance	<input type="checkbox"/> immediate remediation
<input checked="" type="checkbox"/> Plan or Sketch Attached	Figure 2			
<input checked="" type="checkbox"/> Photographs Attached	1 - 5			

Reviewer's Name: <u>Siavash Farhangi</u>	Date Reviewed: <u>24/01/2022</u>
Golder Associates	(DD/MM/YYYY)

REVIEW COMMENTS: none

2021 Dam Safety Inspection – Duck Pond Tailings Management Facility

Client: Teck Resources Limited

Project Number: 21455283

Site Location: Pipelines

Photographed by: P. Merry

Date: August 17, 2021

Drawn by: P. Merry

Photograph 1

Water Reclaim Well.



Photograph 2

Pipeline from water treatment plant with T-valve to control flow towards Berms 1 or 3.



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Photograph 3

Water treatment pipeline along southern shore of the TMA.



Photograph 4

Water treatment plant discharge pipeline on Berm 1, looking north.



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Photograph 5

Water treatment plant
discharge pipeline on Berm 3.



APPENDIX B

Dam B Survey Data



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