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UNDERTAKING RESPONSE

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Undertaking:

The Giant Mine Project Team to provide the investigative report on the tailings cover trial test plot. Any cost information to be removed prior to posting to the registry.

Response:

Please see attached report, *Giant Mine Tailings Cover Trials 2010 Data Summary*, December 2010

Public Works and Government Services Canada

Travaux publics et Services gouvernementaux Canada

Giant Mine
Tailings Cover Trials
2010 Data Summary

Prepared for:

Public Works and Government Services Canada

Prepared by:

SRK Consulting
Engineers and Scientists

SENES Consultants Limited

SRK Project No. 1CS019.016

December 2010

Giant Mine

Tailings Cover Trials

2010 Data Summary

Public Works and Government Services Canada

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SRK Project Number 1CS019.016

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1 Introduction and Scope of Report

1.1 General

At the request of Public Works and Government Services Canada (PWGSC), SRK Consulting (Canada) Inc. (SRK) designed and oversaw construction of four tailings cover test plots over the winter of 2007/2008 at the Giant Mine in Yellowknife, NT. The project was undertaken as part of the Giant Mine Remediation Plan (SRK, 2006) to gather information related to cover design and constructability at the Giant Mine. A data report was compiled in 2010 (SRK, 2010) documenting the data gathered during the 2008 and 2009 monitoring seasons.

This report documents the results of monitoring the trial covers during 2010 season.

1.2 Background of the Project

A total of approximately 16 million tonnes of tailings are stored in the four tailings ponds at Giant Mine. The four ponds, consisting of the Northwest, North, Central, and South Ponds, cover an area of approximately 95 hectares and contain moderate amounts of arsenic. The additional settling and polishing ponds, covering approximately 9 hectares and containing water treatment sludges, are also contaminated with arsenic. The ponds pose a risk due to their susceptibility to wind erosion as well as a possible source of contamination to passing wildlife looking for salt.

The Giant Mine Remediation Plan (SRK, 2006) called for all the tailings and sludge areas to be covered with a two-layer system. The first (bottom) layer is to consist of quarried rock with a top layer of fine-grained soil overlying it. The rock layer will act as an inhibitor to both the upward migration of tailings as well as to the downward penetration of plant roots. In the event of the removal of the overlying soil layer due to erosion, it will serve as a final protective layer. The overlying soil layer will provide a medium for re-vegetation to allow for future recreational or traditional use of the area. The tailings covers will be graded, and ditches and spillways will be constructed in such a way as to minimize erosion of the soil layer and prevent contamination of surface water run-off.

The tailings cover trials are intended to provide information as to the performance of different configurations of materials on two sections of the tailings with different characteristics (i.e. beach and slimes tailings). The Northwest Pond was chosen as the test location due to its accessibility and the presence of well defined beach and slimes areas in the tailings.

1.3 Scope of Work

This report summarizes observations made during the 2010 summer season, including both survey data and data collected by the automated instrumentation. The data presented in this report provides an indication of the performance of the trial covers, contributing to better understanding of site

specific conditions. The regular surveys, performed on nine occasions throughout the summer, allowed continued monitoring of settlement resulting from consolidation.

The scope of this report is to document the settlement, temperature, and moisture content data collected as well as field observations made during physical cover inspections. This report does not attempt to make any data interpretations or predictions of future cover performance..

1.4 Methods

The tailings cover trial plots were built on the Northwest Pond at the Giant Mine, located between Vee Lake Road and the Ingraham Trail (Figure 1). The plots were built according to the Giant Mine Tailings Cover Trials design memo from SRK to Indian and Northern Affairs Canada (INAC), detailed in the As-built report (SRK, 2009). Monitoring of the plots was planned for a minimum of three years with the objective of determining the final tailings cover design criteria for the whole site, including the four tailings ponds.

Construction of the first two plots occurred during November and December of 2007 with the remainder of the work taking place in February and March of 2008. SRK provided quality assurance (QA) for the work and the general contractor for implementation of the work was Deton'Cho/Nuna Joint Venture (DCNJV).

Following construction, the automated instrumentation was installed in July 2008. It consisted of thermistor cables and moisture content probes attached to dataloggers, as well as two individual temperature probes. Data from the dataloggers was downloaded periodically by SRK personnel throughout the monitoring seasons of 2008, 2009, and 2010. Due to concerns over the flooding of the test plots, the instrumentation was decommissioned in the fall following every monitoring season and recommissioned every subsequent spring. In 2010, the instrumentation was recommissioned on August 20, and decommissioned on October 18, resulting in a monitoring season spanning over 59 days.

Immediately after construction, survey pins were placed on the surface of the covers in a grid pattern. The elevation of the pins was surveyed four times in 2008, thirteen times in 2009 (SRK 2010), and on nine occasions between June 10 and October 18, 2010.

2 Construction of Trial Covers

As detailed in the As-built report (SRK, 2009), the trial covers were constructed over frozen tailings on the beach of the Northwest pond (Figure 1). Two of the covers, Beach A and B plots, were constructed in November and December of 2007, while the last two covers were completed in February and March of 2008.

The trial cover design called for two plots to be constructed on the intermediate zone over very soft and saturated tailings (the Slimes plots), and two other plots to be constructed over well drained and stiff tailings (the Beach plots).

Snow was removed from the construction area prior to the commencement of construction, and the trial covers were constructed by placing rockfill material (Run-of-Mine and Processed Rock) according to the design. Primary survey beacons were placed on the tailings surface and the rockfill was then pushed by the dozer around them with the least disturbance possible. The rockfill material was subsequently capped with a layer of growth medium, and the secondary survey beacons were placed on the finished surface in a regular grid pattern.

3 Instrumentation

Instrumentation was installed between June 10 and June 14, 2008. Two types of instruments were installed in each of the trial covers, one measuring volumetric moisture content and the other ground temperature. Detailed descriptions of the instrumentation can be found in the As-built report (SRK, 2009). One Sentek EnviroScan probe was installed on each individual pad to measure volumetric moisture content while two EBA thermistor strings were installed in each pad to measure the temperature at various depths below the surface (except on the Slimes A plot where only one string was installed). Two additional sensors were installed to monitor temperature close to surface on Beach Plot A. These were Onset HOBO Pro V2 dataloggers with attached sensor extensions. Instrumentation locations are provided in Figure 2.

Data from all the instruments was collected by automated dataloggers. The ground temperature sensors (the EBA thermistor strings and the HOBO temperature sensors) were connected to individual dataloggers dedicated to one sensor exclusively, while the moisture content probes were all connected to a central CR800 datalogger. For description and functionality refer to the As-built report (SRK, 2009).

3.1 Moisture Content Sensors

The purpose of installing moisture content sensors through the full profile of each cover was to monitor, by non-destructive methods, the effectiveness of the upper soil layer to act as a store-and-release layer to control infiltration and support vegetation.

Each EnviroScan probe consisted of a series of sensors (8 on Beach A and B plots and 7 on Slimes A and B plots) mounted on a plastic rail at various depth intervals (Figures 9 and 10). The probes were also connected to an intelligent control unit located on top of the rail. The probes were lowered into a hollow plastic tube pre-installed on each of the trial covers in 2008, and were then connected to a central CR800 datalogger through a data transfer cable. The datalogger was programmed to record the moisture content profile every 6 hours, in sequence from each probe.

Data from the CR800 datalogger was routinely downloaded by SRK personnel using proprietary software and a dedicated field laptop computer. Further details regarding installation and functioning can be found in the As-built report (SRK 2009). Figure 2 shows the location of each sensor cluster.

3.2 Temperature Sensors

3.2.1 EBA Ground Temperature Probes

Ground temperature probes are generally used to determine subsurface temperature profiles in the soil. In this case, monitoring temperature profiles through the test covers and the tailings underneath will help to better understand the localized temperature regimes, and the influence of the cover on

the freeze-thaw cycle, which in turn affects the potential for differential settlement of any proposed cover.

The ground temperature probes consists of a series of thermistor beads mounted on a cable with pairs of wires equal to the number of thermistor beads installed. The probes were individually connected to a dedicated Lakewood UL 16 datalogger, which was programmed to record the temperature every 6 hours. Data from the Lakewood UL16 datalogger was downloaded by SRK personnel using proprietary software and a dedicated field laptop computer. Details regarding installation and functioning can be found in the As-built report (SRK, 2009). Figure 2 shows the location of each thermistor string, while Figures 12 and 13 illustrate the relative location of each bead.

3.2.2 HOBO Pro V2 Temperature Sensors

The HOBO temperature sensors function on the same principle as the EBA ground temperature probes, with the major difference being that the HOBO sensor is only capable of measuring temperature at one discrete point, with an additional reference temperature measured inside the HOBO data logger's body. The temperature sensor is connected to the data logger through a 1.8 meter long extension cable. The data logger has an internal battery and is capable of functioning autonomously for extended periods of time, measuring and storing temperature every 6 hours. Data from the HOBO datalogger was downloaded by SRK personnel using proprietary software and an Onset optical data shuttle unit which can be connected to the field laptop for downloads and final storage. Details regarding installation and functioning can be found in the As-built report (SRK 2009). Figure 2 shows the location of each sensor.

4 Trial Covers Surveys and Monitoring

4.1 Settlement Surveys and Visual Inspections

To establish a baseline against which to compare the amount of settlement of each cover, as-built surveys were planned for each test plot. The as-built survey for Beach Plot A and Beach Plot B was performed on January 21, 2008, while the as-built survey of the completed Slimes A and Slimes B plots was performed on July 4, 2008.

4.1.1 Settlement surveys

The scope of the settlement survey program was to monitor the overall settlement of the trial covers. The main mechanism leading to settlement is considered to be consolidation of the tailings beneath the covers, and to a much less extent consolidation of the cover material. Thaw settlement could also be a factor.

SRK's request was that the surveys be performed using a dumpy level, to a ± 3 mm accuracy. The surveyors used a GPS survey device instead. The surveys were performed in a closed loop, starting and ending at the benchmark.

The assessment of consolidation settlement is monitored by regularly surveying two sets of targets located on the surface of each cover: primary beacons (steel pillars) and secondary beacons (a set of rocks doubled by survey pins). The locations of the primary and secondary beacons are shown in Figures 3 and 4. For further details please refer to the As-built report (SRK, 2009).

- Primary beacons are steel pipes welded onto a sheet metal base placed directly onto the tailings before construction. The primary beacons monitor the settlement of the tailings surface underlying the trial covers. Four primary beacons were installed on each trial cover.
- Secondary beacons are a set of targets placed in a fixed grid pattern on each trial cover. The targets are boulders placed on the trial cover surface after construction and are painted yellow. Each boulder was doubled up with a survey pin, placed in the immediate vicinity as a backup, in case the boulder became unstable. The top of each boulder, as well as each survey pin, is surveyed during each event. In the survey summary table the boulders are marked with "R". A total of 25 secondary beacons (25 boulders + 25 survey pins) were placed on each trial cover in a 5x5 grid.

During the 2010 monitoring a total of 9 surveys were performed on Beach Plots A and B, while the Slimes Plots were surveyed 4 times, as they became accessible late in the summer.

The survey results were reduced by the surveyors to true elevations and only the elevations were transmitted to SRK. Attached as Appendix A are the compiled survey results. Processing of the survey data was performed by SRK to determine the differential settlement between consecutive surveys, as well as total settlement from the as-built surveys to date. Quality checks of the data were also performed during the processing.

As shown in Figures 5 through 7, the settlement between the last survey of 2009 and the first survey of 2010 is negative, i.e. surface elevation increased. Although the phenomenon is consistent with the previously observed survey gap during the winter of 2008/2009 (SRK 2010), the amount of the elevation increase is slightly different for each plot. Notwithstanding these observation, the survey of Slime Plot B East shows a significant settlement compared to 2009. The causes of this may be multiple, from survey errors to frost heave during the winter months. A more detailed analysis of the data would be required to narrow down the possible causes.

In one instance the elevation of the primary survey pin #123 (Beach B plot) reported by the surveyors was erroneous. The erroneous value was replaced with an arbitrary number, calculated as the average of the elevations reported by the previous and subsequent survey (July 13 and August 10, respectively).

Surveys of Slimes A and B plots were not possible in the first part of the season, due to high water levels in the Northwest Pond. The plots were completely submerged in the spring and then surrounded by water until late summer, which made access impossible. As water levels dropped, four surveys were performed on these plots late in the summer.

4.1.2 Visual Inspections

Detailed post-construction visual inspections of the trial covers were carried out on October 18, 2010. Inspection memo is attached as Appendix B.

The ground was covered with snow at time of inspection. Some areas were clear of snow while others areas had larger accumulations due to the wind action. No changes were observed in the state of the cover surface compared to the 2009 inspections. Frost jacking of the EnviroScan tubes installed on Slimes A and B plots was noted, with the collar of the tubes sitting as much as 85 cm above the original elevation. The 4x4 lumber posts installed on same plots were lying on the ground where they were initially installed. No frost jacking action was noted on Beach A and B plots, and all the 4x4 posts and EnviroScan access tubes were found undisturbed.

No anthropogenic disturbance of the covers was noted other than what was noted in 2009. An extensive network of shrinkage cracks caused by desiccation of the clayey growth medium was noted on the Beach A and B plots, while the Slimes A and B plots were showing evidence of having been totally submerged and the growth medium was washed away on some areas. For more details please refer to the Inspection Memo in Appendix B.

5 Instrumentation Data

Although instrumentation installed on the trial covers was designed to operate all year round, most instruments were decommissioned and removed from the trial covers at the end of the 2009 monitoring season. The change in the monitoring plan was due to changes in the water management plan of the Giant Mine underground workings, which called for additional volume of water to be stored temporarily in the Northwest pond. Therefore, to protect the instrumentation from flooding it was necessary to remove and place them in dry storage over the winter. The increased water level in the pond ultimately caused the complete flooding of Slimes Plots A and B.

The instrumentation was recommissioned on August 20, 2010 and decommissioned on October 18, 2010, resulting in data collection for a total of 59 days. The cause of the delay in the recommissioning of the instrumentation was non-technical.

5.1 Moisture Content Data

Data was collected every 6 hours from the Sentek EnviroScan probes throughout the monitoring season. The collected data was stored as a percentage, representing relative moisture content scaled to the wet (100% water) and dry (air dry) extremes. For absolute moisture content the sensors required calibration using the soil to be installed in, which was not considered necessary for these trial covers.

During the 2010 monitoring season, moisture content data was collected for a total of 59 days from August 20 to October 18, for a total of 237 recorded measurements. In 2009, during the recommissioning of the instrumentation, it was decided to change the spatial distribution of the sensors on the probe rail, such that no sensor is located below the original tailings surface. The same spatial distribution of the sensors was maintained in 2010. The legend of Figures 14 and 15 show the actual depth of each sensor measured from the cover surface, with values changed on Beach A and B plots as required. Due to high water levels in the Northwest Pond, Slimes A and Slime B plots were not accessible at the time of recommissioning, resulting in the moisture content probes not being installed on those plots.

As shown in Figures 14 and 15, the instruments performed as intended. As expected, the sensors located close to surface showed highly variable moisture content according to the wetting up and drying cycles following precipitation events. The sensor closest to the cover surface on all trial covers consistently measured moisture content values of zero or near zero. This is an artefact of the consolidation settlement of the growth medium layer, which resulted in the sensors (which have a fixed elevation) gradually becoming airborne, thus the measured values not being representative of the cover soil.

The sensor located 1.1 m below the surface of Beach B Plot, shows a much higher moisture content than the other sensors. Most likely this sensor is sitting within the tailings zone, which naturally has a higher moisture content than the crushed rock or the growth medium used to construct the cover.

The protection of the data transfer wiring between the probes and the dataloggers was upgraded at the time of recommissioning by fitting a piece of PVC pipe over the exposed portion of the wire at the probe end.

5.2 Ground Temperature Data

5.2.1 EBA Ground Temperature Probes

Similarly to the EnviroScan probes, the thermistor strings were recommissioned on August 20, 2010 and decommissioned on October 18, 2010. A total of 236 data points were collected from each thermistor string over the 56 days. Although the thermistor strings were left in place over the winter, the Lakewood dataloggers were removed. Data was not collected from October 30, 2009 to August 20, 2010.

This resulted in a gap in the data collected, with the 2010 data set starting on August 20, 2010. Due to the fact that Slimes Plots A and B were not accessible at time of recommissioning, no datalogger was installed and no ground temperature data was collected from these plots, although the thermistor strings were still in place.

As shown in Figures 16 through 20, the ground temperature sensors performed as intended. The dataloggers also performed well, except for the datalogger on Beach B East plot. The first download subsequent to the recommissioning of the instruments, revealed that the datalogger was not collecting any data. To correct this issue the datalogger was switched with an idle datalogger from the Slimes plots. The 2010 dataset recorded on this plot started on August 25, 2010.

As expected, the thermistor beads located close to the cover surface showed high variability, reflecting diurnal and seasonal air temperature variation. The deeper sensors showed attenuation of the normal diurnal and seasonal variations, while the sensors located below the original tailings surface showed only slight variations. Temperatures measured by beads located 2 meters or deeper (measured from the top of the trial covers) showed that the tailings were not frozen at time of recommissioning, with a trend of slow increase in temperature throughout the monitored period.

At the time of recommissioning, protection of the exposed portion of the thermistor strings was installed. Sections of ABS pipes were fitted and attached to the datalogger's post and the thermistor cables were threaded through the pipes. No part of the thermistor is now exposed to potential damage from wildlife or other mechanical damage.

5.2.2 HOBO Pro V2 Sensors

The HOBO sensors were only installed on Beach A plot. Because this plot was not in danger of being flooded, the dataloggers were not decommissioned until the fall of 2009. A total of 1,411 data points were collected at 6 hour intervals, between October 30, 2009 and October 18, 2010. As shown in Figure 23, there is a data gap of 15 days, between September 6 and September 21, due to the HOBO#2 dataloggers not being launched properly following download.

As shown in Figures 22 and 23, the instruments performed as intended, with internal temperature (measured inside the body of the datalogger) following the diurnal and seasonal temperature variations, while the external sensor showed a much attenuated diurnal variation. The values recorded by the two individual dataloggers were consistent against each other.

6 Recommendations for Continued Monitoring

The scope of the cover trials is to monitor the short-term performance of the proposed cover configurations and the amount of consolidation settlement to be expected, which will allow for the optimization of the final cover design.

The first three seasons of monitoring (2008, 2009, and 2010) yielded valuable consolidation settlement data as well as ground temperature and moisture content data. To further improve the database of information regarding total consolidation settlement and the effect of freeze-thaw cycles on the covers, SRK recommends the bi-weekly surveys continue for at least one more season, while the ground temperature and moisture content data continue to be collected for at least 3 more years.

The following is an itemised list of actions recommended by SRK for the following monitoring season:

- Resume bi-weekly surveys of settlement and continue monitoring for at least one more season, between May and October, 2011.
- Leave Lakewood dataloggers installed over the winter to continue monitoring ground temperature for at least 3 more winter seasons.
- Continue monitoring moisture content for at least 2 more seasons during the summer months.
- Check the integrity of sealing of the EnviroScan housing tubes and bail out standing water (if any) before re-commissioning the probes in the spring.
- Check battery voltage of the HOBO dataloggers and replace batteries, as required.
- Check the battery voltage of the Lakewood dataloggers and replace the batteries as required.
- Erase the memory of the Lakewood dataloggers before re-commissioning, to shorten the time required for downloading the data.
- Send the faulty datalogger (Serial No 7060028) to the manufacturer for diagnostic and repairs.
- Perform maintenance on the solar panel and battery of the CR800 datalogger; ensure the solar panel is tilted 85° from horizontal and recharge the battery by connecting to an AC charger, if required.

This report, "**Giant Mine: Tailings Cover Trials 2010 Data Summary**", has been prepared by SRK Consulting (Canada) Inc.

Prepared by

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Consultant

Reviewed by

Maritz Rykaart, Ph.D., P Eng.
Principal

All data used as source material plus the text, tables, figures, and attachments of this document have been reviewed and prepared in accordance with generally accepted professional engineering and environmental practices.

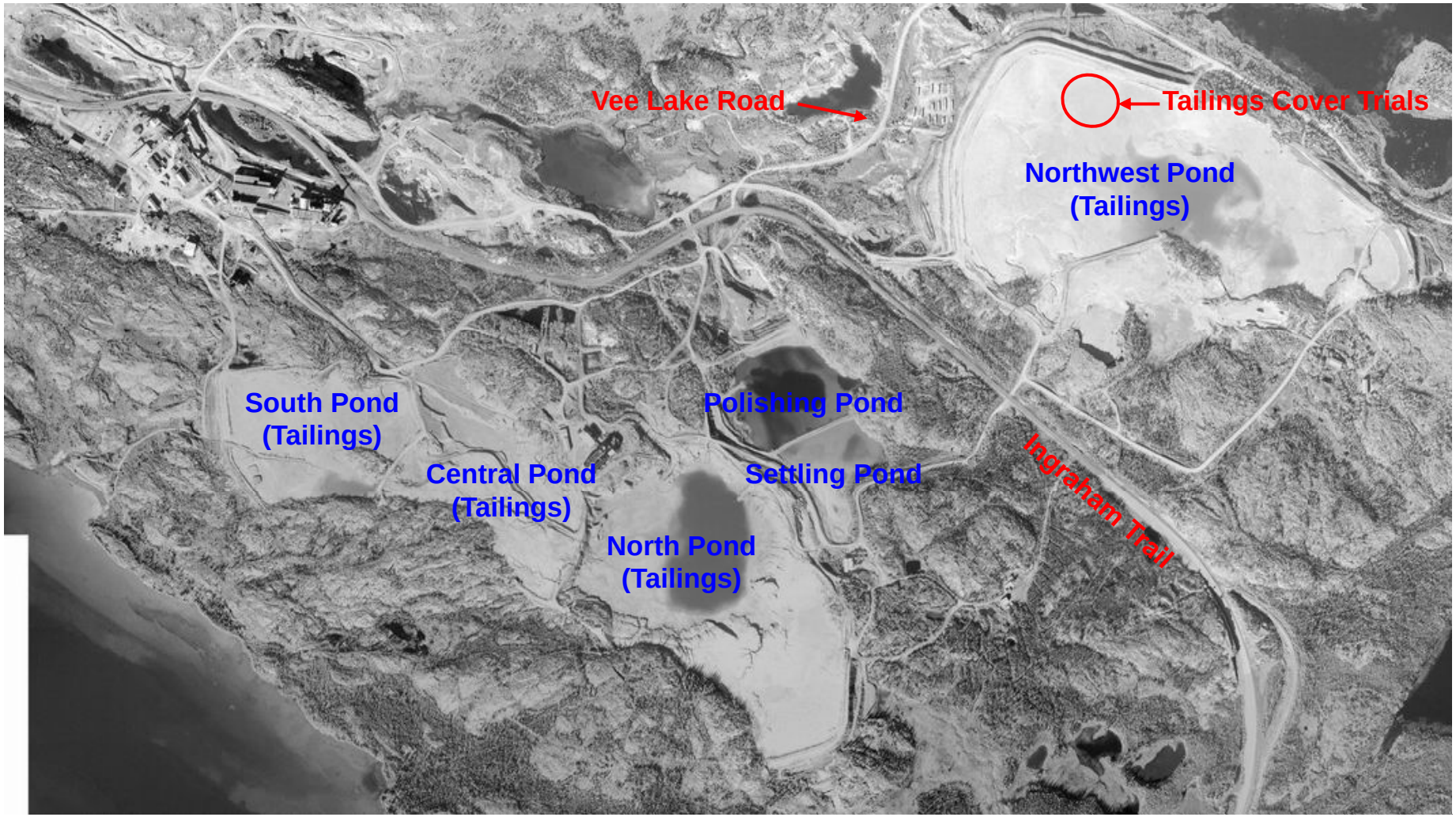
7 References

SRK Consulting (Canada) Inc. (2006). Giant Mine Remediation Plan. SRK Project No. 1CI001.013. Prepared for Giant Remediation Project Team and Department of Indian Affairs and Northern Development. August 2006.

SRK Consulting (Canada) Inc. (2009). As-built Report for the Tailings Cover Trials. SRK Project No. 1CP001.037. Prepared for Indian and Northern Affairs Canada and Public Works and Government Services Canada. February 2009.

SRK Consulting (Canada) Inc. (2010). Giant MineTailings Cover Trials 2008 and 2009 Data Summary. SRK Project No. 1CP001.037. Prepared for Indian and Northern Affairs Canada and Public Works and Government Services Canada. June 2010.

Figures



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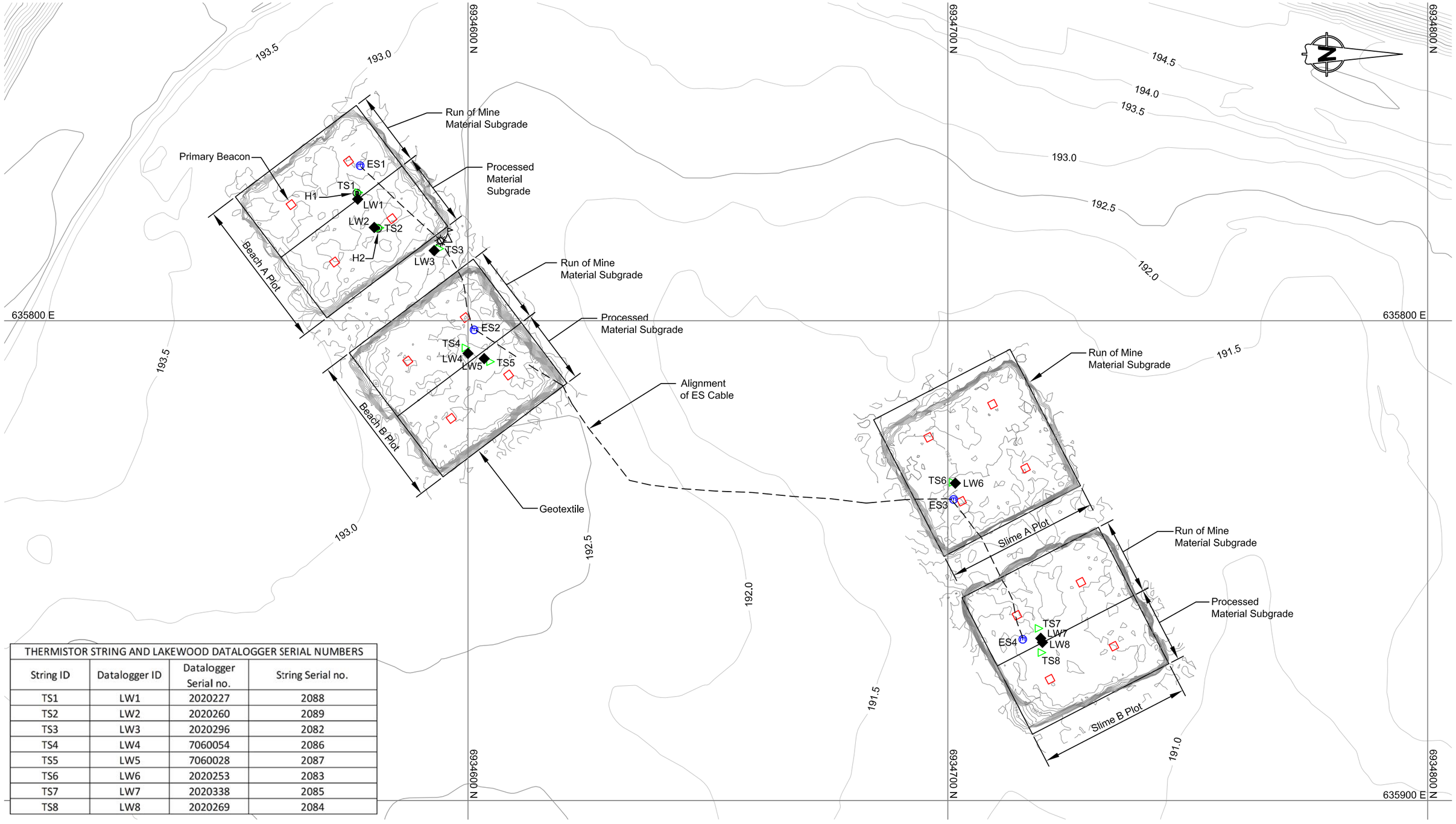

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TS3	LW3	2020296	2082
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TS5	LW5	7060028	2087
TS6	LW6	2020253	2083
TS7	LW7	2020338	2085
TS8	LW8	2020269	2084

LEGEND

- Solar Panel
- Hobo Datalogger
- Thermistor String
- Enviroscan Sensor
- Survey Beacon
- Enviroscan Cable
- Lakewood Datalogger
- CR 800 Datalogger

0 5 10 15 20 25
Scale in Metres

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Engineers and Scientists
Vancouver B.C.

SRK JOB NO.: 1CS019.016
FILE NAME: 1CS019.016_1.dwg

Public Works and Government Services Canada
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Giant Mine

Tailings Cover Trials
2010 Data Summary

General Arrangement and Instrumentation

DATE: Dec. 8, 2010
APPROVED: IM
FIGURE: 2

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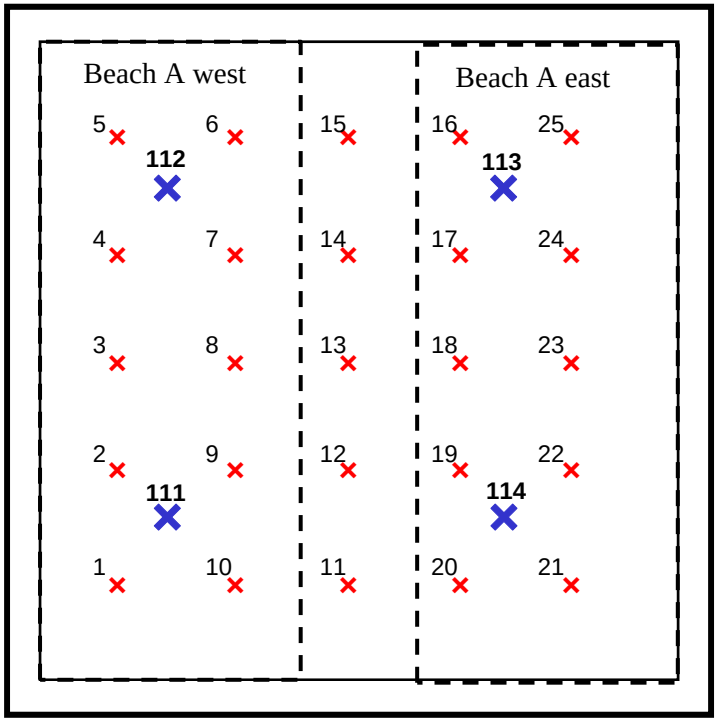
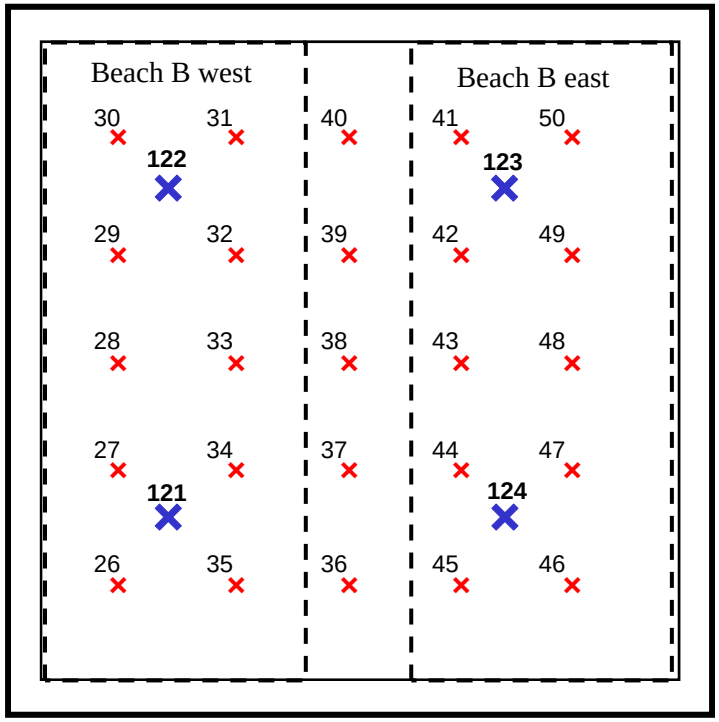


Beach "A"



Beach "B"

LEGEND:

111 Primary Beacon

1 Secondary Beacon

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Tailings Cover Trials
2010 Data Summary

Location of Primary and Secondary Beacons on Beach "A" and Beach "B" Trial Covers

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Giant Mine

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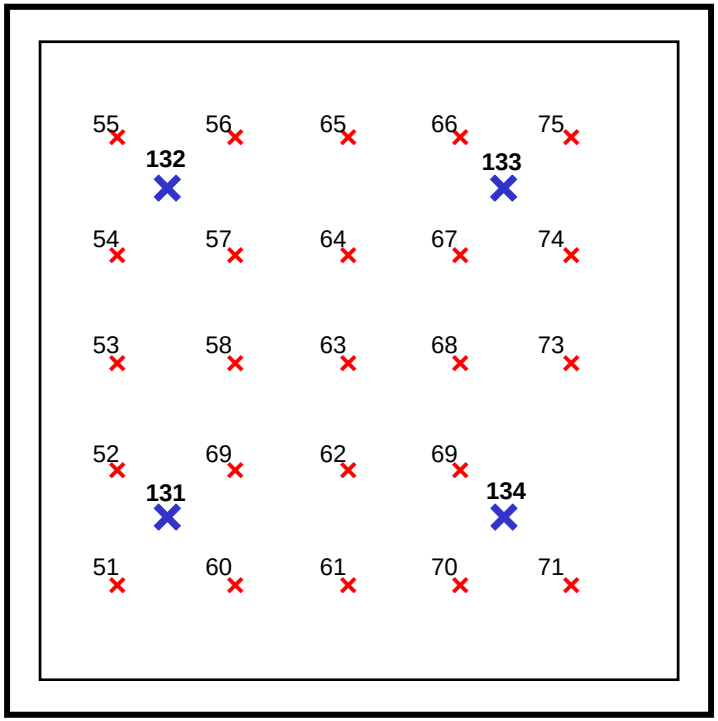
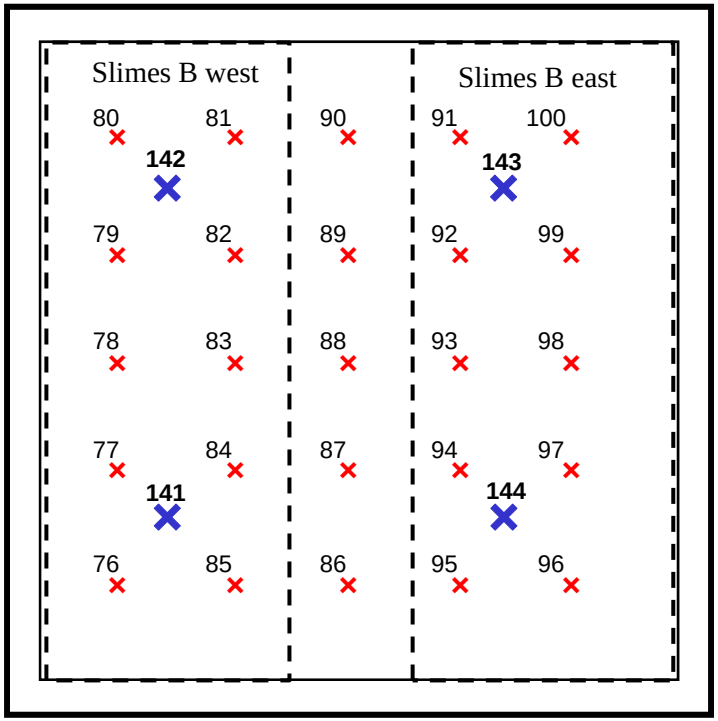


Slimes "A"



Slimes "B"

LEGEND:

111 Primary Beacon

1 Secondary Beacon

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Location of Primary and Secondary Beacons on Slimes "A" and Slimes "B" Trial Covers

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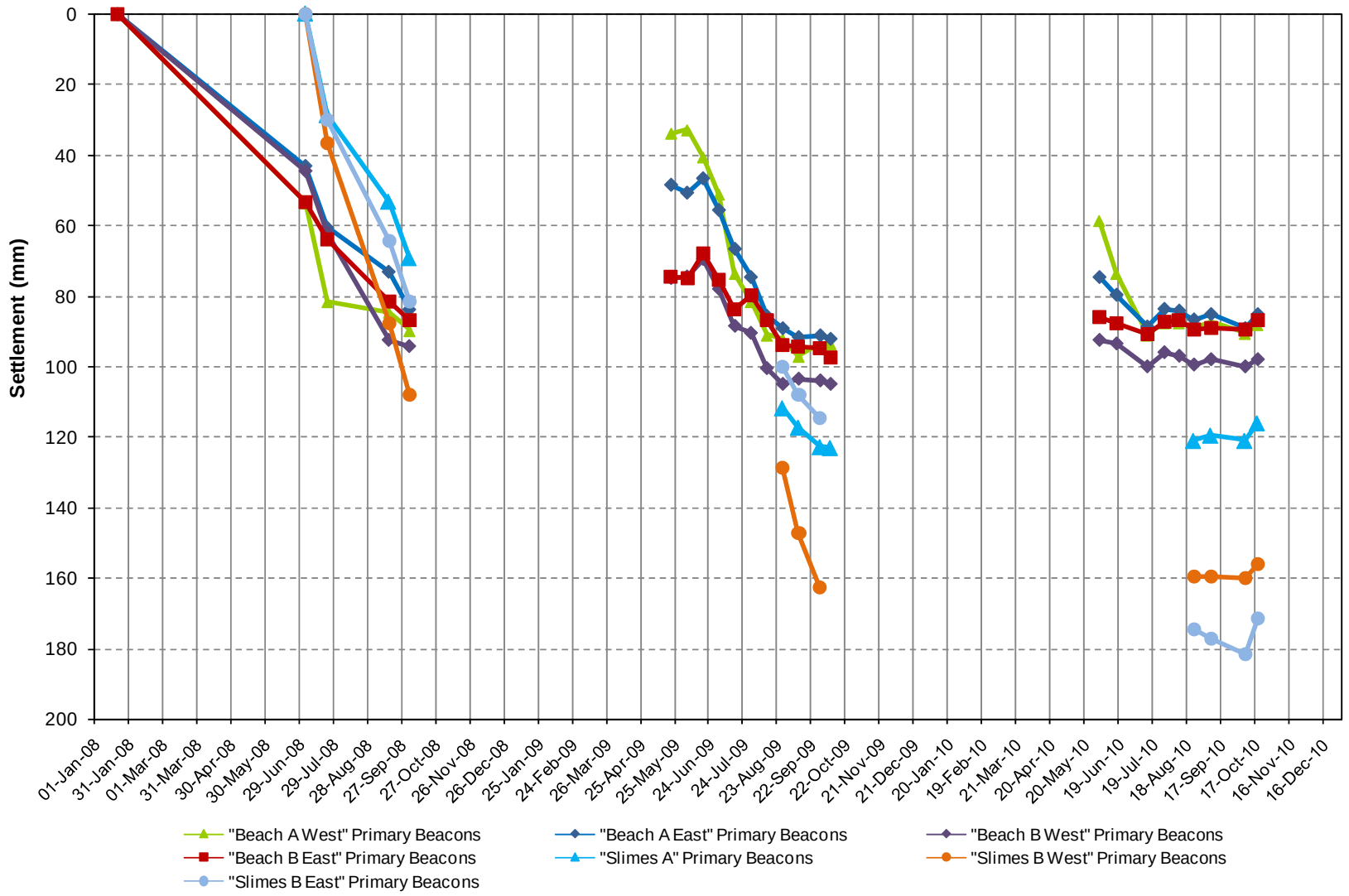

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SRK Consulting Engineers and Scientists VANCOUVER	Public Works and Government Services Canada / Travaux publics et Services gouvernementaux Canada	Tailings Cover Trials 2010 Data Summary
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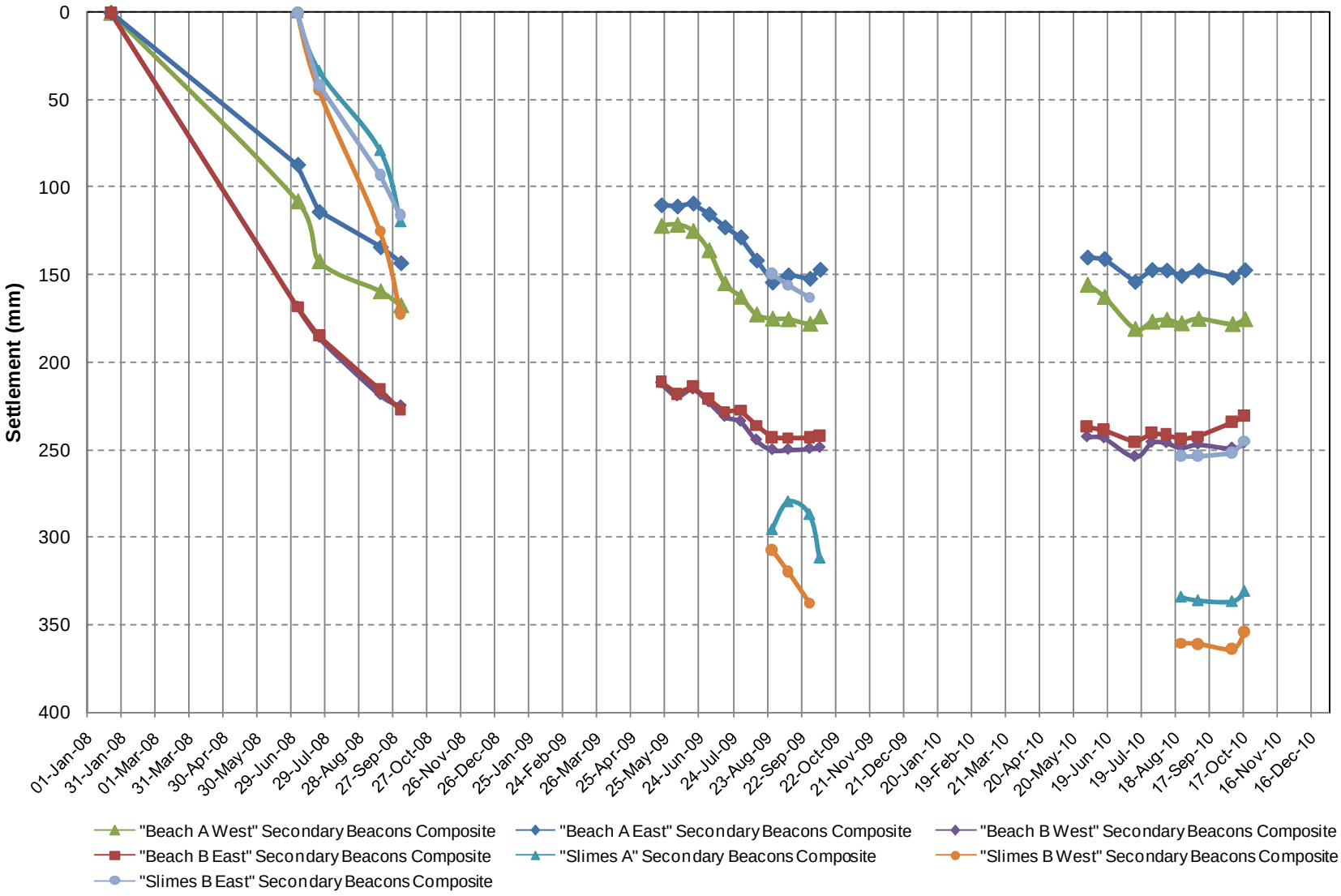

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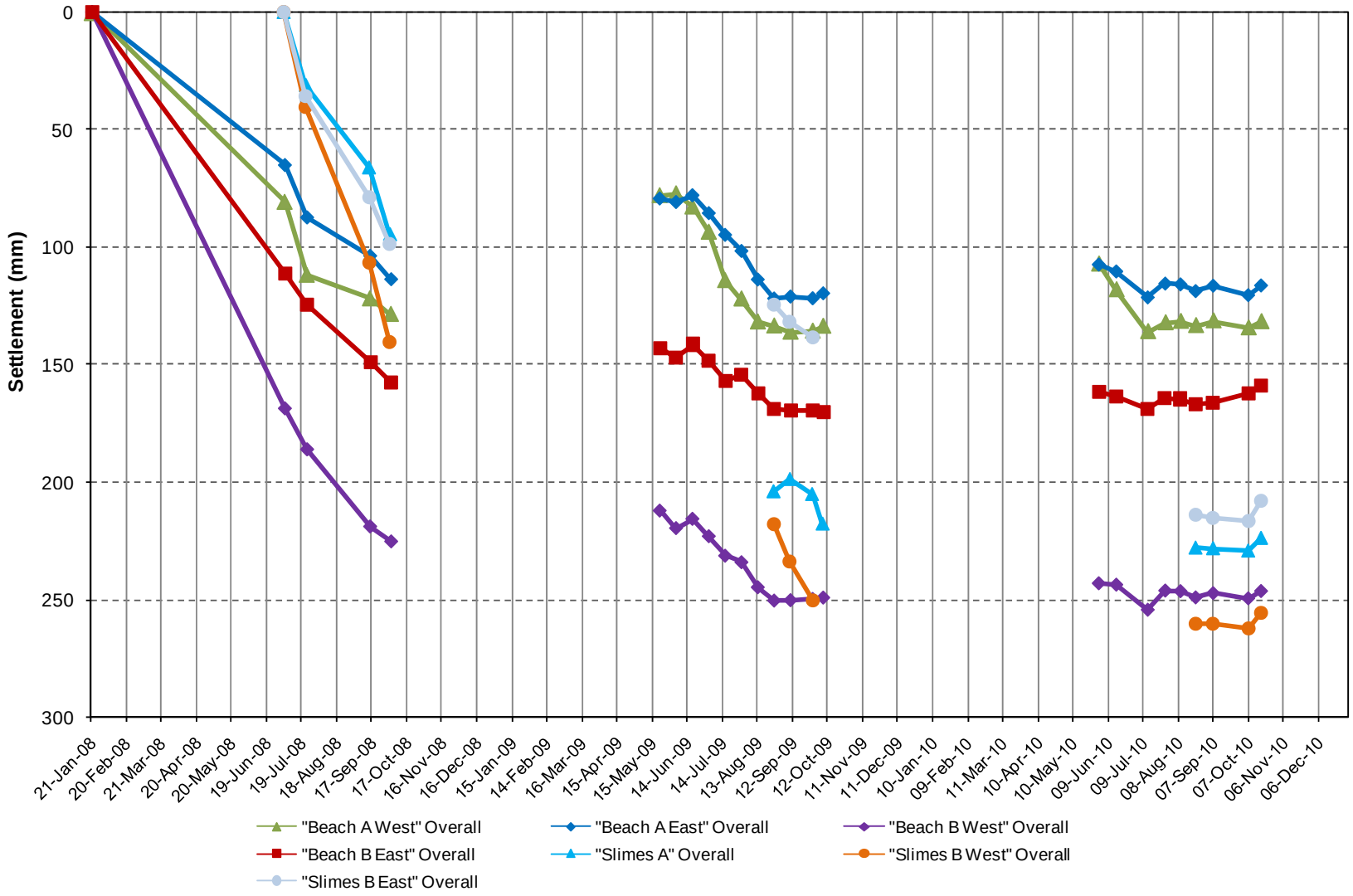
		Normalized Average Settlement Data for Secondary Beacons
Job No: 1CS019.016 Filename: Figures 1.3-7-Beach_Slimes_Beacon_20101130.pptx	**Giant Mine**	Date: December 2010 / Approved: IM / Figure: **6**



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		Normalized Overall Average Settlement Data
Job No: 1CS019.016 Filename: Figures 1.3-7-Beach_Slimes_Beacon_20101130.pptx	**Giant Mine**	Date: December 2010 / Approved: IM / Figure: **7**

LEGEND

- Solar Panel
- Hobo
- Thermistor String
- Enviroscan Sensor
- Survey Beacon
- Enviroscan Cable

0 5 10 15 20 25
Scale in Metres

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SRK JOB NO.: 1CP001.037.B02.06
FILE NAME: 1CP001_037-B02-3.dwg

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Giant Mine

Tailings Cover Trials
2010 Data Summary

Maximum Water Level in Northwest Pond

DATE:	APPROVED:	FIGURE:
Dec. 2010	IM	8

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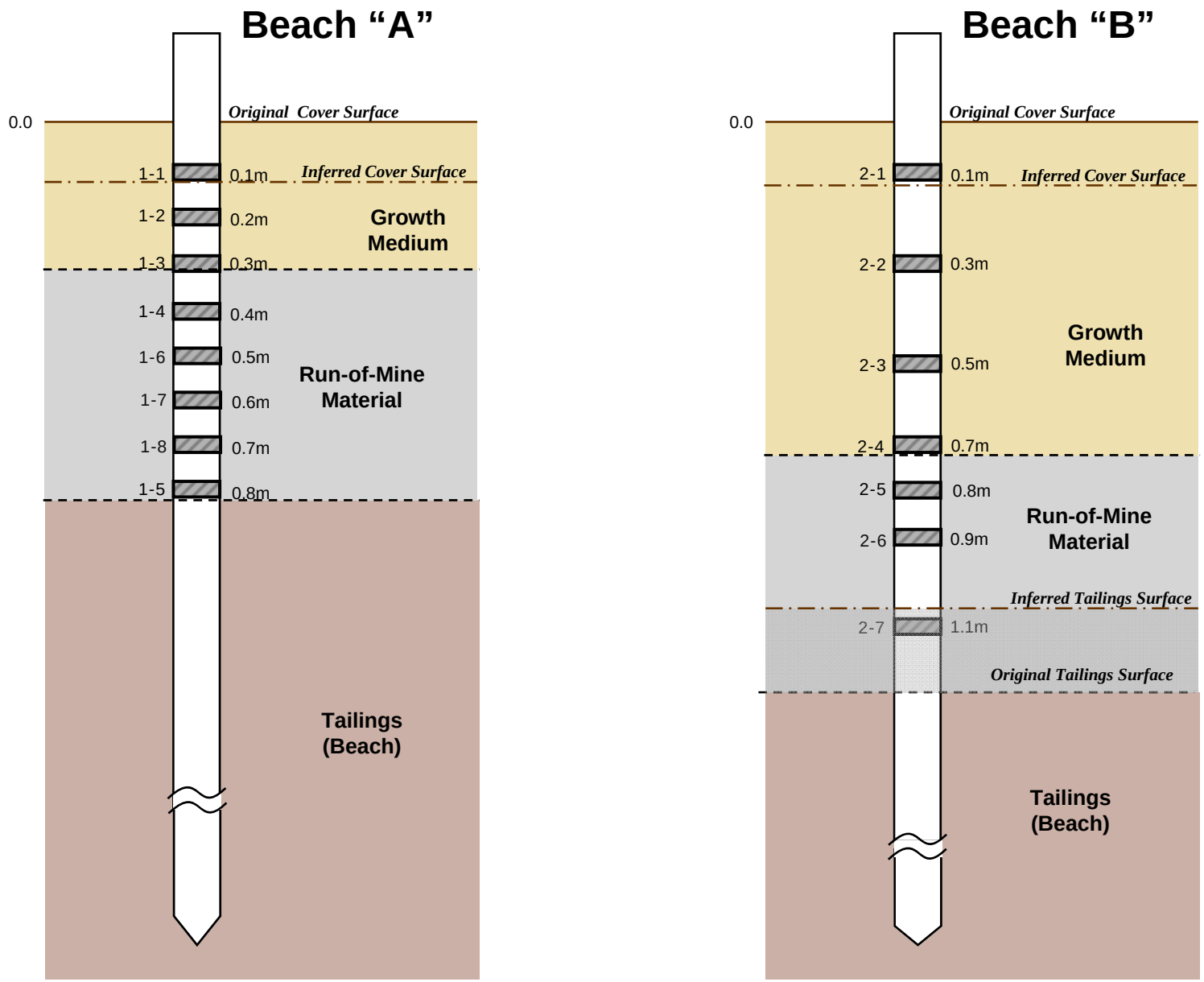

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Job No: 1CS019.016

Filename: Figures 9-10_12-13_EnviroScan_thermistor_20101130.pptx

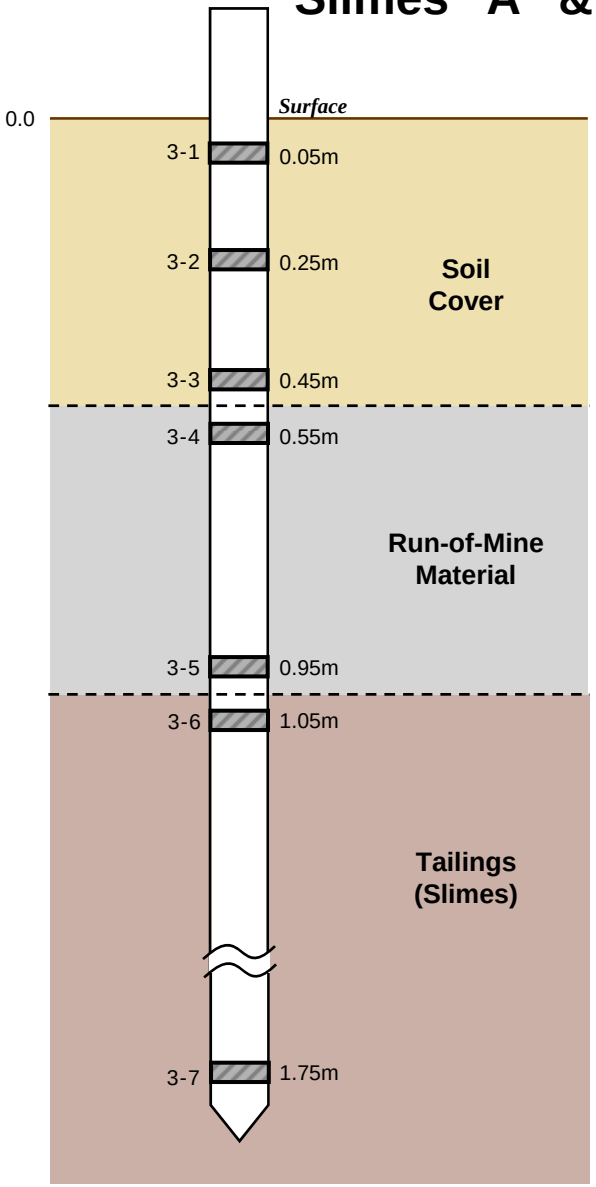
Giant Mine

Tailings Cover Trials
2010 Data Summary

Spatial Distribution of EnviroScan Sensors
Beach "A" & Beach "B" Trial Covers

Date:	Approved:	Figure:
December 2010	IM	9

Slimes “A” & Slimes “B”



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Tailings Cover Trials
2010 Data Summary

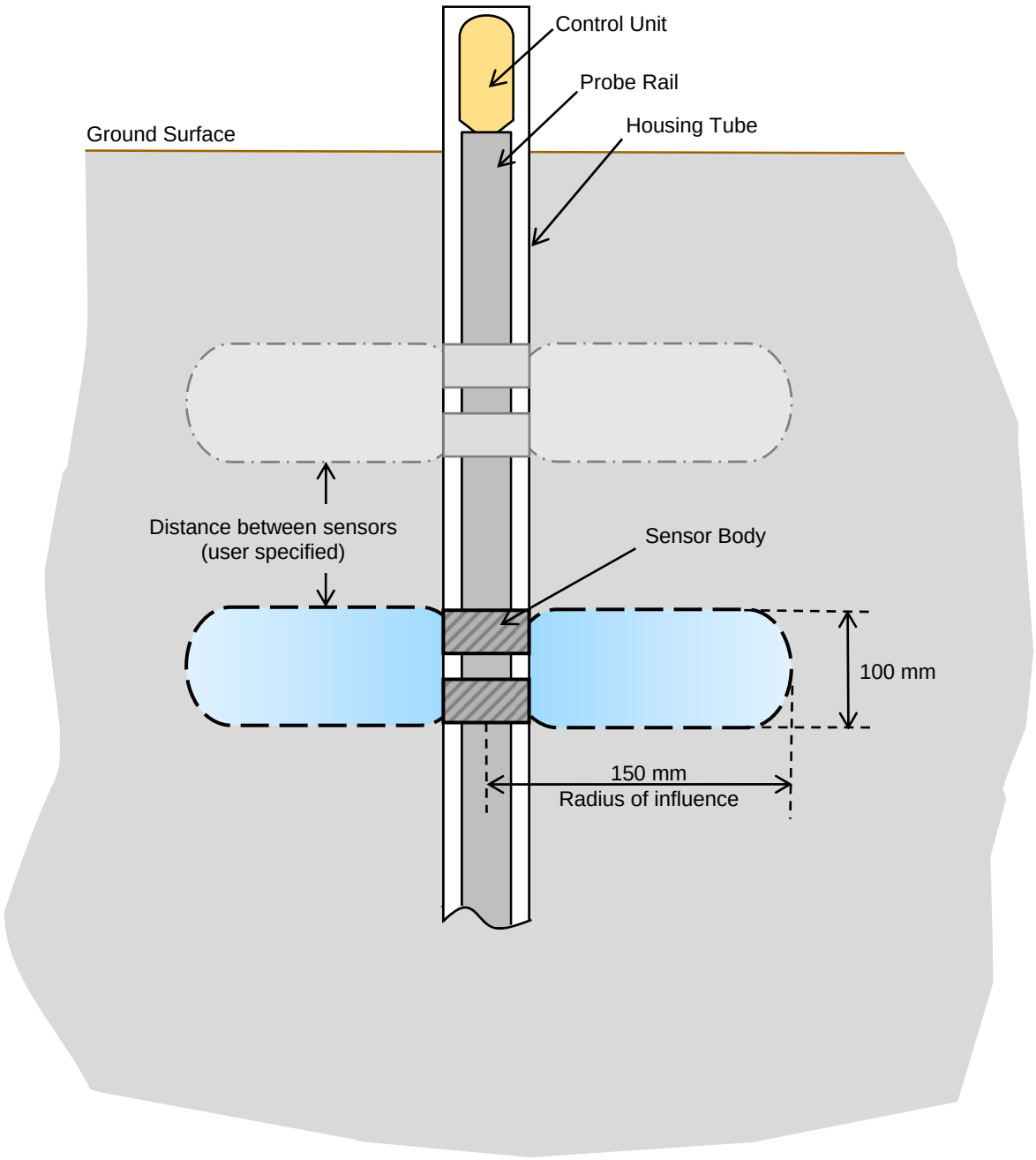
Spatial Distribution of EnviroScan Sensors
Slimes “A” & Slimes “B” Trial Covers

Job No: 1CS019.016

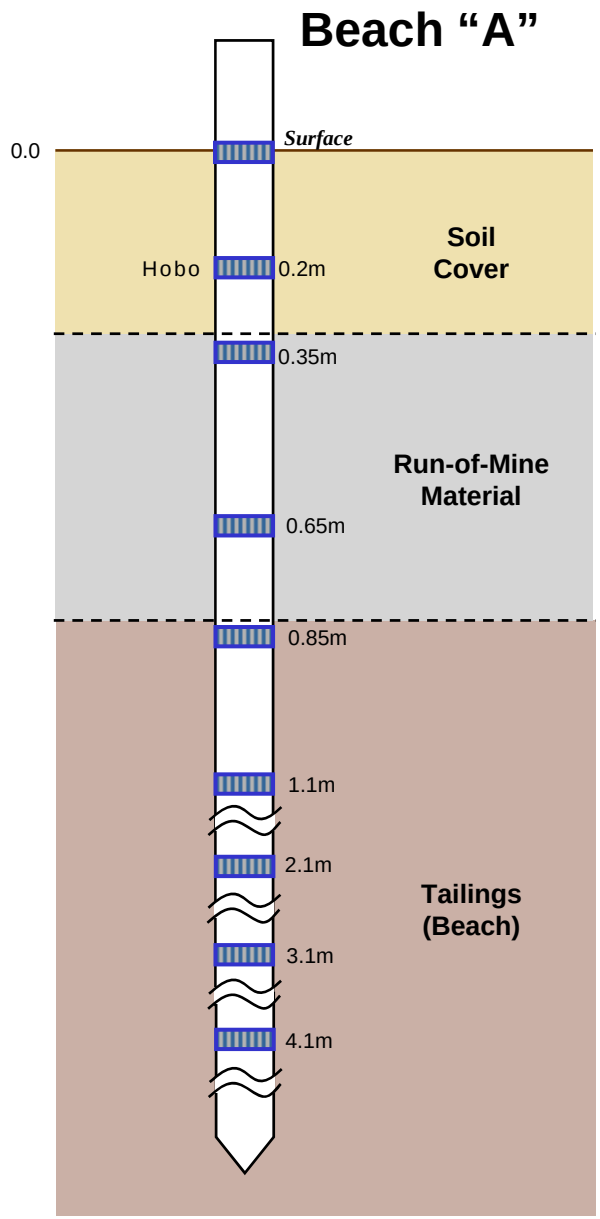
Filename: Figures 9-10_12-13_EnviroScan_thermistor_20101130.pptx

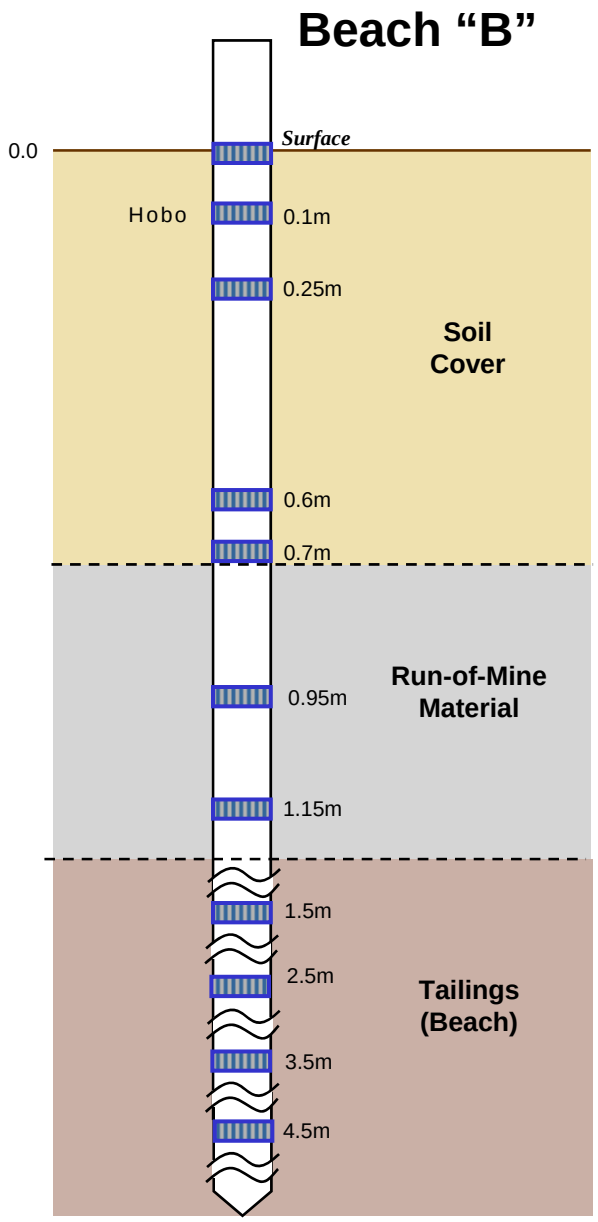
Giant Mine

Date:	Approved:	Figure:
December 2010	IM	**10**



SRK Consulting Engineers and Scientists VANCOUVER	Public Works and Government Services Canada / Travaux publics et Services gouvernementaux Canada	Tailings Cover Trials 2010 Data Summary		
		Radius of Influence of Individual EnviroScan Sensors		
Job No: 1CS019.016 Filename: Figure 11_20101201.pptx	**Giant Mine**	Date: December 2010	Approved: IM	Figure: **11**





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Tailings Cover Trials
2010 Data Summary

Typical Spatial Distribution of Thermistor Strings
Beach "A" & Beach "B" Trial Covers

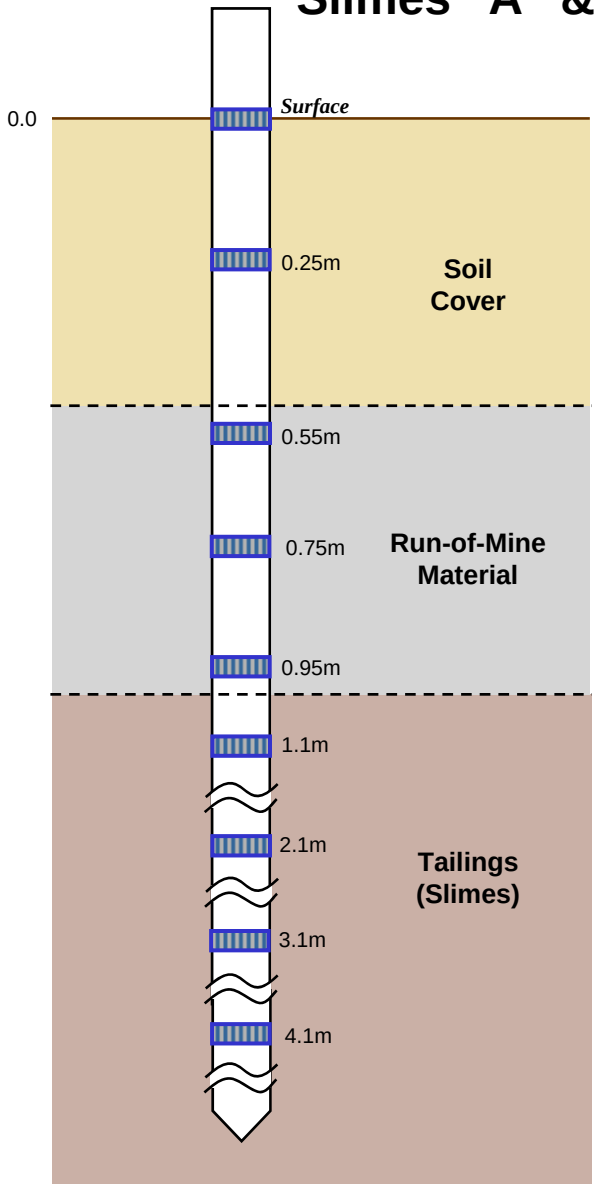
Job No: 1CS019.016

Filename: Figures 9-10_12-13_EnviroScan_thermistor_20101130.pptx

Giant Mine

Date:	Approved:	Figure:
December 2010	IM	12

Slimes “A” & Slimes “B”



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Tailings Cover Trials
2010 Data Summary

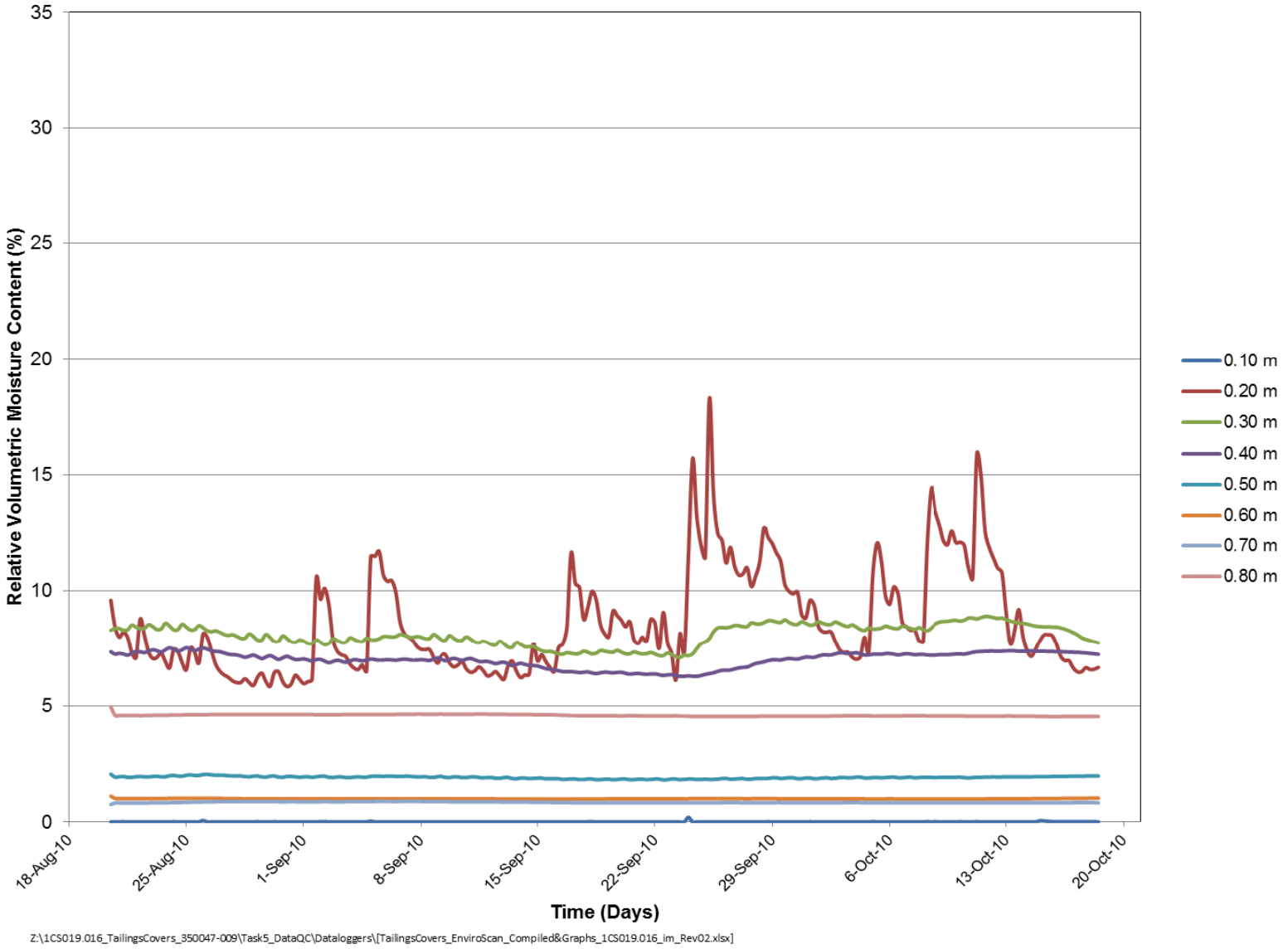
Typical Spatial Distribution of Thermistor Strings
Slimes “A” & Slimes “B” Trial Covers

Job No: 1CS019.016

Filename: Figures 9-10_12-13_EnviroScan_thermistor_20101130.pptx

Giant Mine

Date:	Approved:	Figure:
December 2010	IM	13



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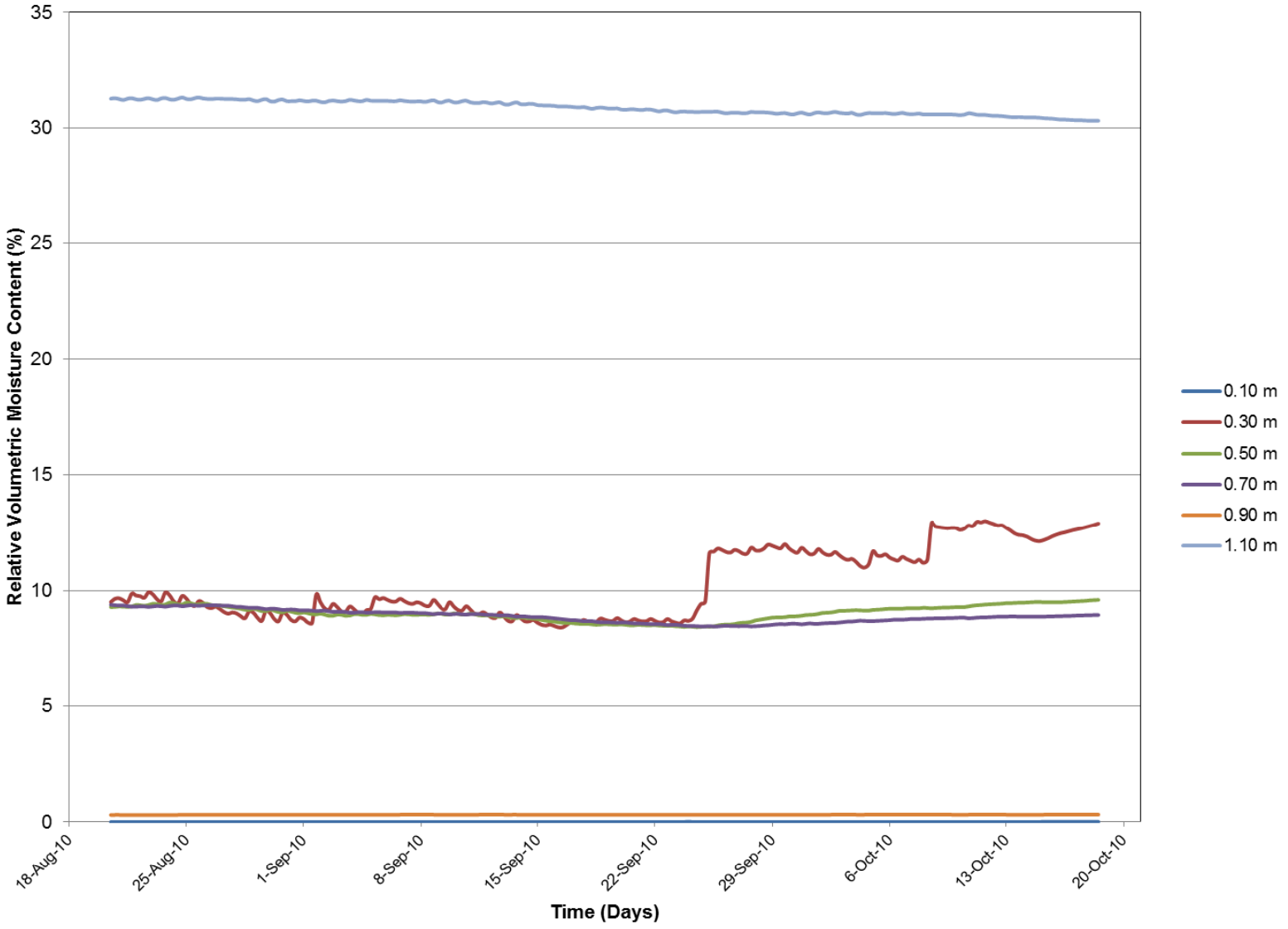
Job No: 1CS019.016 Filename: Figures 14-21_20101130.pptx	**Giant Mine**	**Volumetric Moisture Content Measured Using the EnviroScan Probe on Beach A Plot**
		Date: December 2010 / Approved: IM / Figure: **14**



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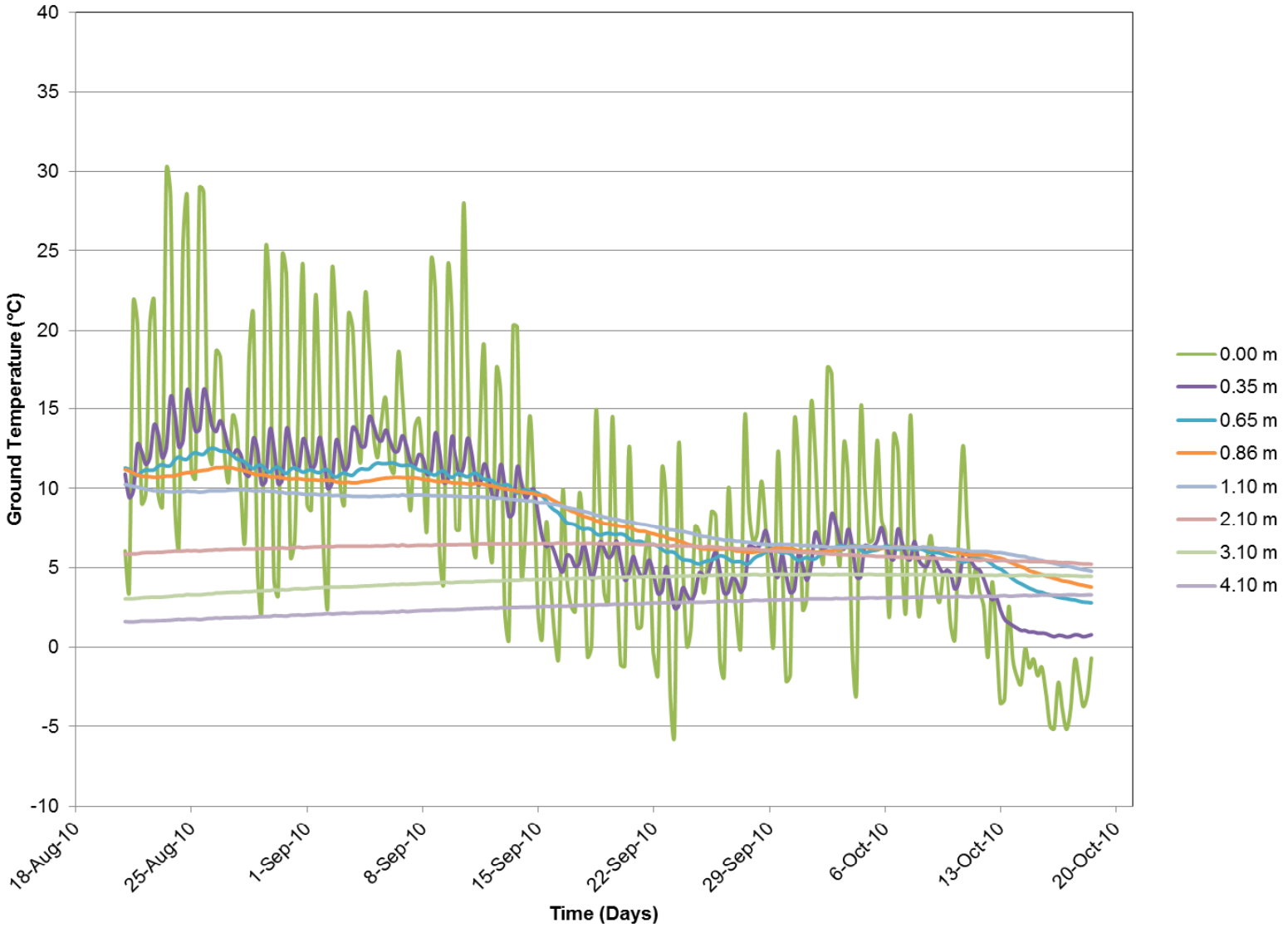
Tailings Cover Trials
2010 Data Summary

Volumetric Moisture Content Measured Using the EnviroScan Probe on Beach B Plot

Job No: 1CS019.016
Filename: Figures 14-21_20101130.pptx

Giant Mine

Date:	Approved:	Figure:
December 2010	IM	**15**



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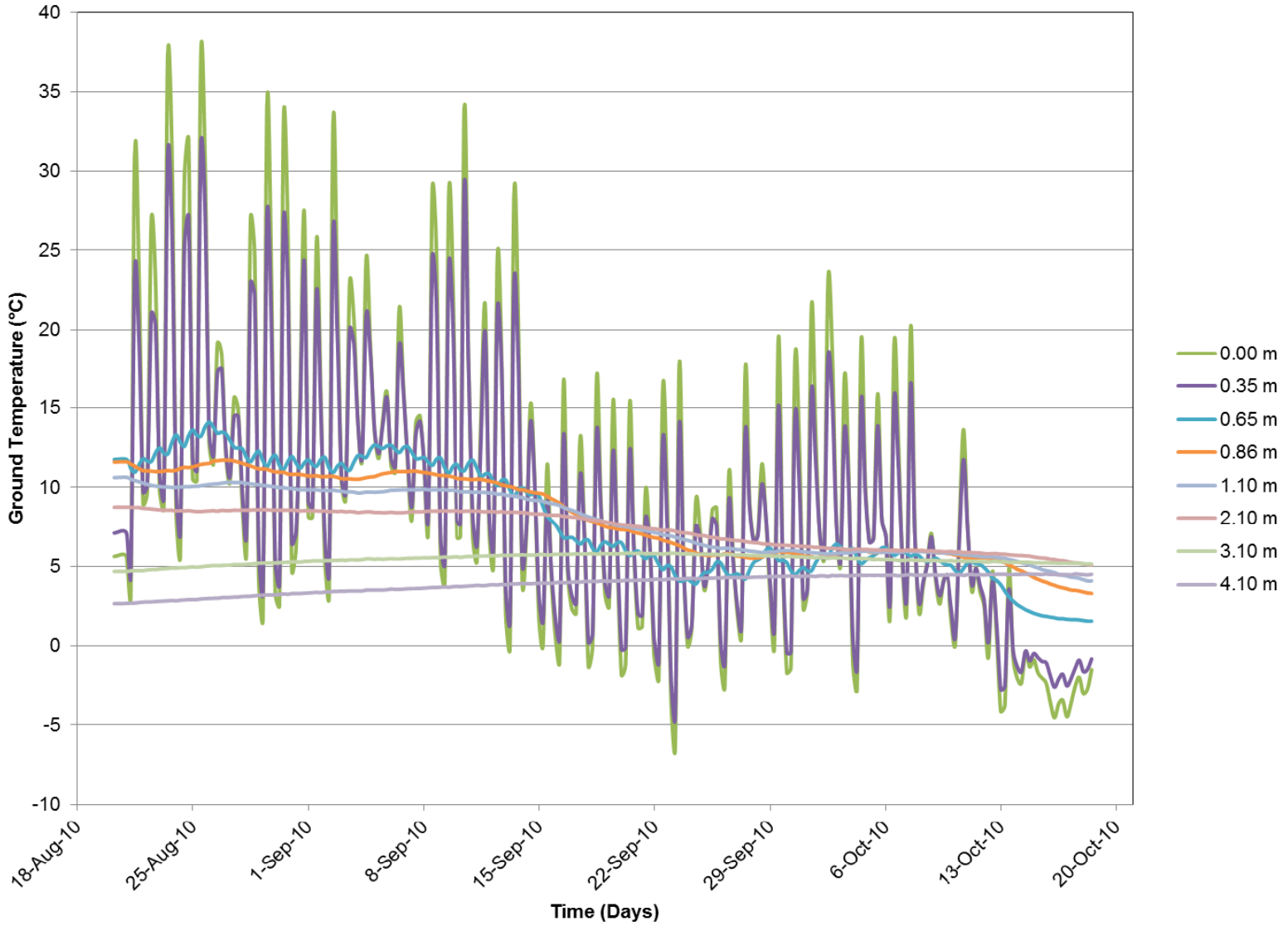
Tailings Cover Trials
2010 Data Summary

Ground Temperature Measured Using an EBA Ground Temperature Probe on Beach Plot A West

Job No: 1CS019.016
Filename: Figures 14-21_20101130.pptx

Giant Mine

Date:	Approved:	Figure:
December 2010	IM	**16**



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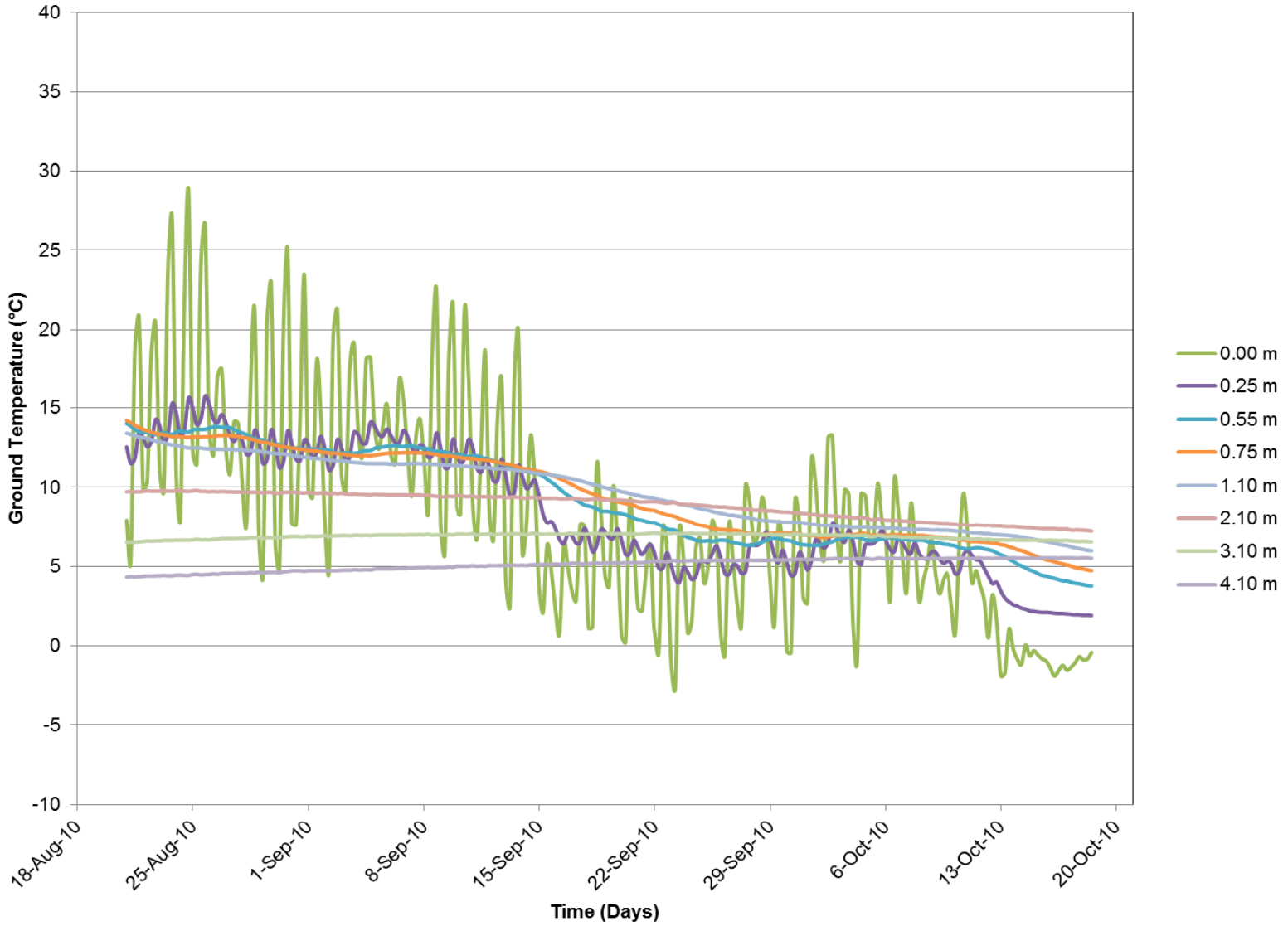
Job No: 1CS019.016 Filename: Figures 14-21_20101130.pptx	**Giant Mine**	**Ground Temperature Measured Using an EBA Ground Temperature Probe on Beach Plot A East**
		Date: December 2010 / Approved: IM / Figure: **17**



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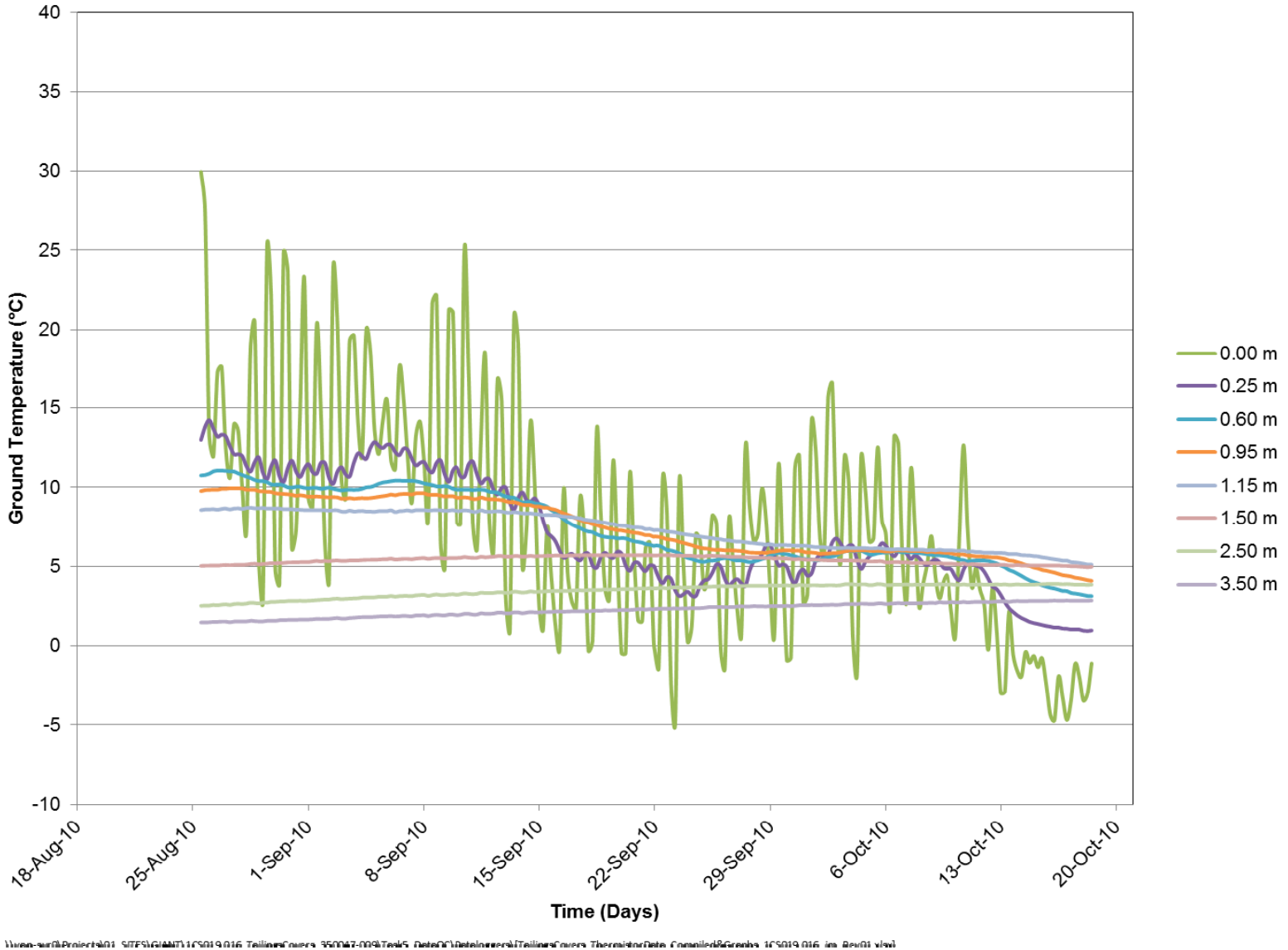
Tailings Cover Trials
2010 Data Summary

Ground Temperature Measured Using an EBA Ground Temperature Probe on Beach Plot B West

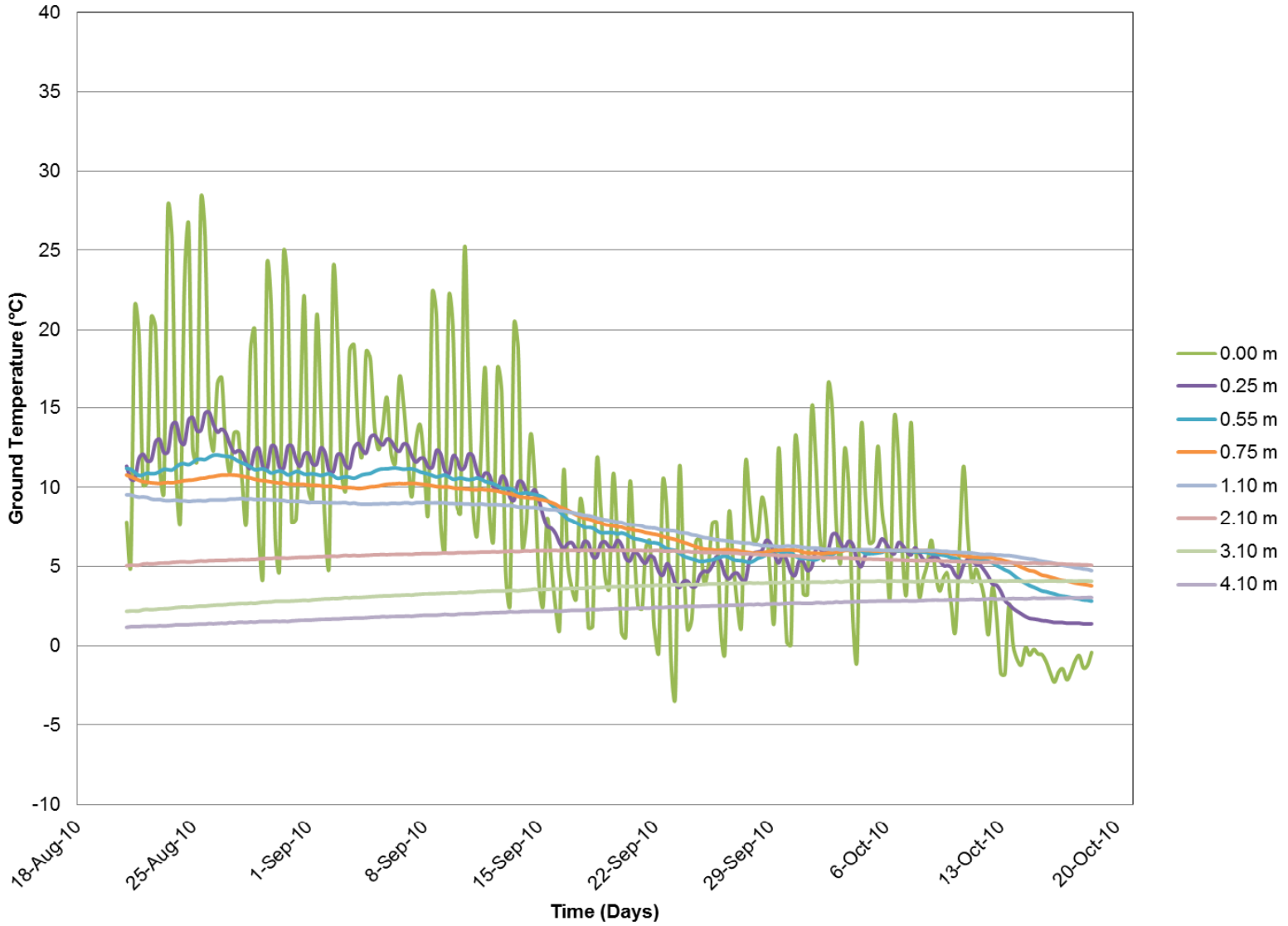
Job No: 1CS019.016
Filename: Figures 14-21_20101130.pptx

Giant Mine

Date:	Approved:	Figure:
December 2010	IM	**18**



SRK Consulting Engineers and Scientists VANCOUVER	Public Works and Government Services Canada / Travaux publics et Services gouvernementaux Canada	Tailings Cover Trials 2010 Data Summary
Job No: 1CS019.016 Filename: Figures 14-21_20101130.pptx	**Giant Mine**	**Ground Temperature Measured Using an EBA Ground Temperature Probe on Beach Plot B East**
		Date: December 2010 / Approved: IM / Figure: **19**



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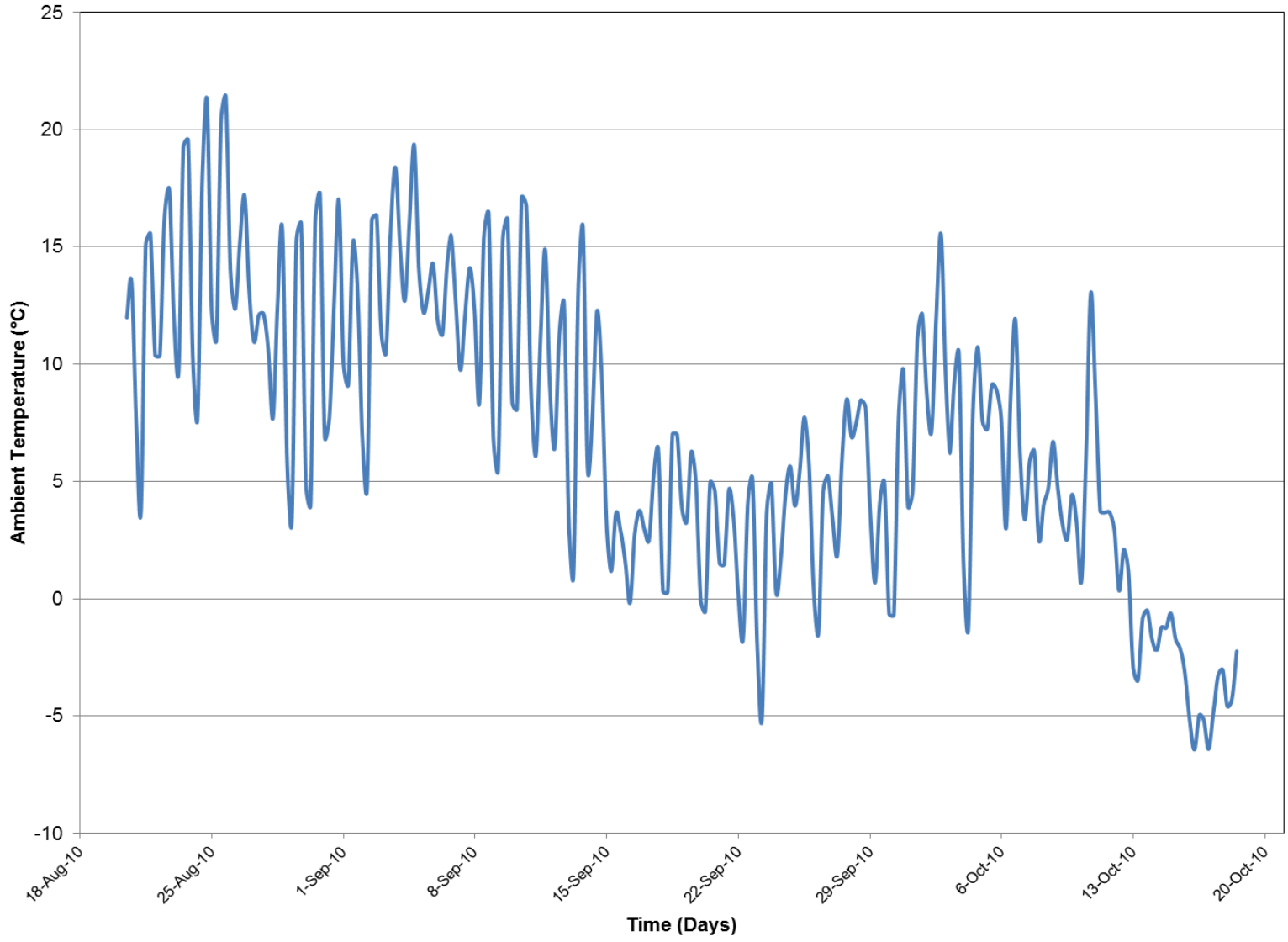
Job No: 1CS019.016 Filename: Figures 14-21_20101130.pptx	**Giant Mine**	**Reference Ground Temperature Measured Using an EBA Ground Temperature Probe Installed between Beach A and Beach B Plots**
		Date: December 2010 / Approved: IM / Figure: **20**



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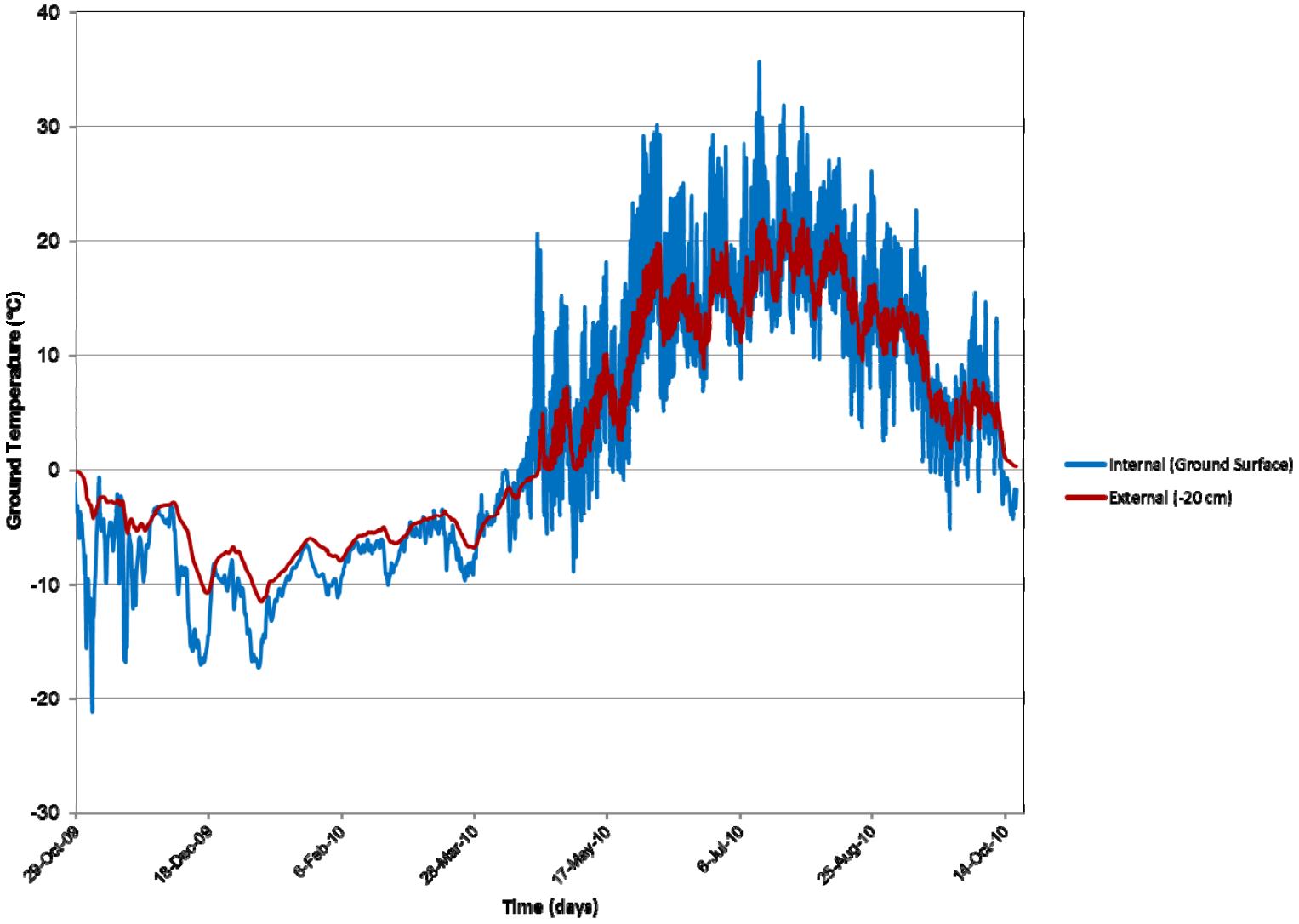
Tailings Cover Trials
2010 Data Summary

Ambient Air Temperature Measured Using the Campbell Scientific CR800 Datalogger

Job No: 1CS019.016
Filename: Figures 14-21_20101130.pptx

Giant Mine

Date:	Approved:	Figure:
December 2010	IM	**21**



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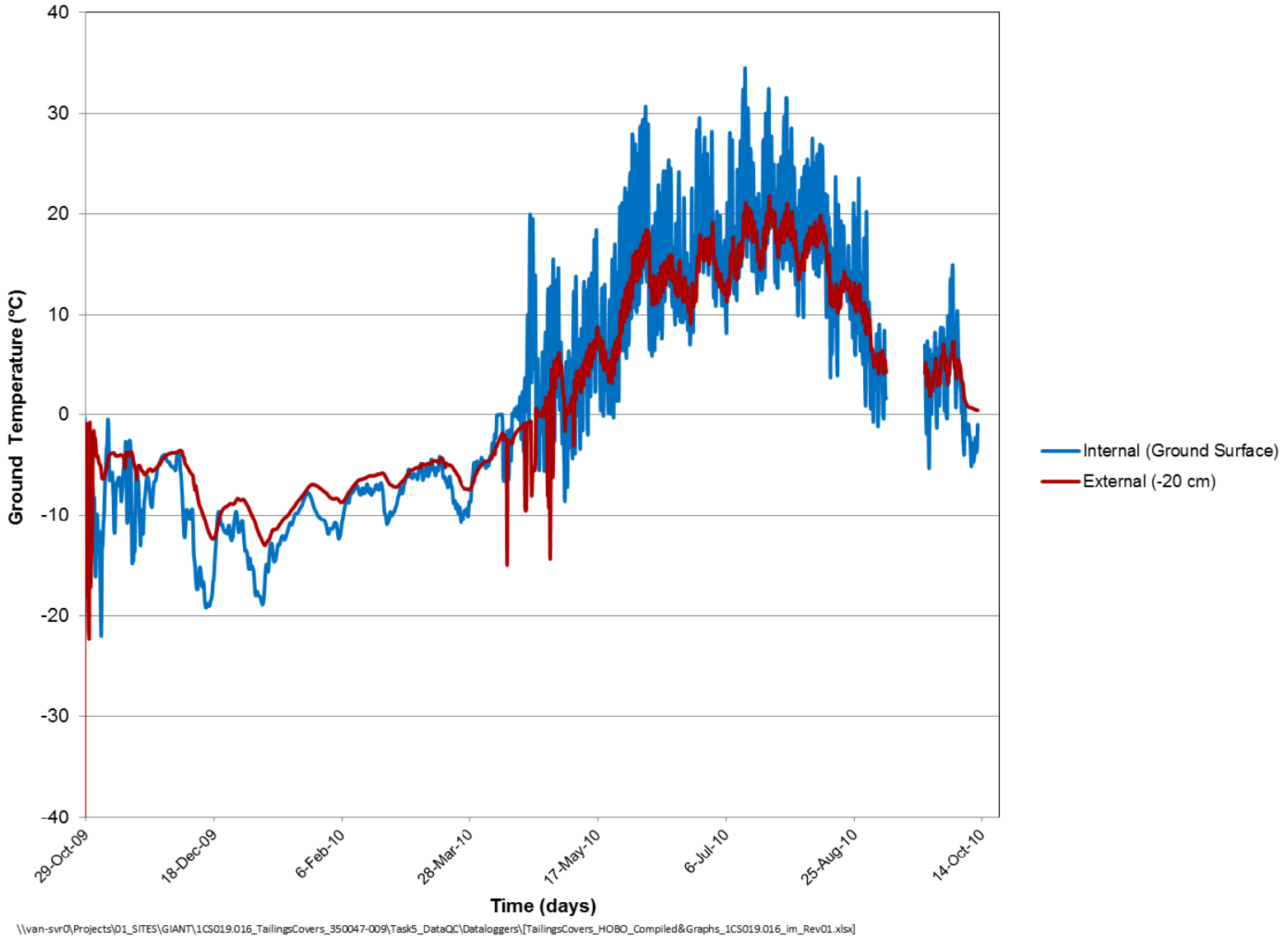
		Ground Temperature Measured Using HOBO#1 Temperature Probe on Beach A West Plot
Job No: 1CS019.016 Filename: Figures 22-23_20101130.pptx	**Giant Mine**	Date: December 2010 / Approved: IM / Figure: **22**



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Tailings Cover Trials
2010 Data Summary

Ground Temperature Measured Using HOBO#2 Temperature Probe on Beach A East Plot

Job No: 1CS019.016
Filename: Figures 22-23_20101130.pptx

Giant Mine

Date:	Approved:	Figure:
December 2010	IM	**23**

Appendix A
Survey Results

Appendix A1
Settlement Monitoring – Compiled Survey data

Settlement Monitoring (Raw Survey Data): Trial Covers at Northwest Tailings Pond

											Secondary Survey Beacon (Stake in Ground)	Secondary Survey Beacon (Nail in Rock)	Primary Survey Beacon (Pillar)														
Date of reading	21-Jan-08	4-Jul-08	23-Jul-08	15-Sep-08	3-Oct-08	6-May-09	21-May-09	4-Jun-09	18-Jun-09	2-Jul-09	16-Jul-09	30-Jul-09	13-Aug-09	27-Aug-09	10-Sep-09	29-Sep-09	8-Oct-09	22-Oct-09	1-Jun-10	16-Jun-10	13-Jul-10	28-Jul-10	10-Aug-10	23-Aug-10	7-Sep-10	7-Oct-10	18-Oct-10
Elevation of MP (m)		Corrected with 25.977 m	Corrected with 25.977 m	Corrected with 25.977 m	Corrected with 25.977 m	Corrected with 25.977 m	Corrected with 25.977 m																				
Point #																											
1	193.811	193.735	193.716	193.709	193.703	193.745	193.743	193.744	193.736	193.729	193.716	193.705	193.696	193.695	193.695	193.695	193.699	193.703	193.67	193.717	193.693	193.698	193.697	193.696	193.698	193.694	193.699
2	193.848	193.777	193.752	193.731	193.725	193.780	193.780	193.780	193.781	193.769	193.750	193.738	193.725	193.72	193.72	193.721	193.721	193.719	193.753	193.743	193.717	193.69	193.722	193.719	193.723	193.719	193.722
3	193.800	193.725	193.698	193.676	193.666	193.721	193.719	193.722	193.713	193.706	193.683	193.673	193.659	193.656	193.656	193.654	193.659	193.665	193.682	193.671	193.656	193.66	193.659	193.657	193.66	193.656	193.657
4	193.863	193.775	193.695	193.726	193.713	193.792	193.779	193.777	193.763	193.747	193.723	193.717	193.702	193.698	193.697	193.697	193.706	193.719	193.731	193.716	193.699	193.706	193.704	193.701	193.708	193.705	193.706
5	193.728	193.649	193.619	193.602	193.600	193.659	193.659	193.661	193.648	193.635	193.613	193.606	193.596	193.593	193.592	193.593	193.593	193.601	193.625	193.606	193.59	193.597	193.596	193.594	193.596	193.592	193.595
6	193.754	193.653	193.644	193.627	193.613	193.654	193.647	193.646	193.643	193.634	193.628	193.622	193.611	193.612	193.604	193.602	193.611	193.62	193.636	193.629	193.608	193.613	193.612	193.609	193.614	193.613	193.615
7	193.692	193.620	193.605	193.580	193.578	193.612	193.610	193.609	193.611	193.608	193.590	193.583	193.573	193.572	193.572	193.521	193.527	193.531	193.527	193.524	193.511	193.52	193.519	193.516	193.517	193.514	193.516
8	193.787	193.723	193.707	193.682	193.674	193.719	193.709	193.710	193.710	193.702	193.689	193.679	193.669	193.667	193.667	193.666	193.671	193.678	193.683	193.687	193.664	193.671	193.672	193.67	193.671	193.668	193.671
9	193.699	193.632	193.613	193.601	193.596	193.639	193.636	193.640	193.639	193.622	193.598	193.596	193.591	193.59	193.59	193.586	193.587	193.591	193.613	193.598	193.583	193.588	193.589	193.588	193.589	193.586	193.589
10	193.753	193.680	193.647	193.636	193.626	193.679	193.677	193.678	193.677	193.659	193.635	193.628	193.622	193.622	193.622	193.621	193.627	193.634	193.656	193.638	193.62	193.624	193.626	193.62	193.625	193.622	193.624
11	193.781	193.712	193.688	193.667	193.662	193.706	193.701	193.701	193.703	193.699	193.683	193.668	193.658	193.653	193.658	193.652	193.653	193.662	193.68	193.683	193.649	193.654	193.655	193.652	193.654	193.652	193.655
12	193.809	193.749	193.729	193.706	193.686	193.727	193.718	193.718	193.723	193.716	193.711	193.703	193.691	193.684	193.681	193.679	193.7	193.693	193.697	193.698	193.682	193.688	193.687	193.685	193.687	193.684	193.687
13	193.768	193.711	193.691	193.666	193.659	193.690	193.684	193.683	193.683	193.680	193.677	193.668	193.657	193.651	193.647	193.644	193.646	193.652	193.654	193.658	193.644	193.652	193.651	193.649	193.65	193.648	193.649
14	193.745	193.669	193.657	193.630	193.617	193.655	193.652	193.650	193.650	193.644	193.642	193.637	193.624	193.618	193.615	193.614	193.616	193.621	193.629	193.626	193.62	193.623	193.624	193.615	193.617	193.614	193.616
15	193.617	193.537	193.520	193.411	193.401	193.449	193.438	193.437	193.433	193.431	193.422	193.413	193.399	193.394	193.392	193.392	193.396	193.41	193.411	193.414	193.4	193.407	193.405	193.403	193.407	193.401	193.404
16	193.638	193.574	193.566	193.530	193.528	193.552	193.549	193.547	193.549	193.547	193.541	193.537	193.523	193.518	193.515	193.514	193.517	193.522	193.517	193.523	193.513	193.52	193.52	193.517	193.519	193.517	193.518
17	193.658	193.600	193.586	193.567	193.561	193.597	193.588	193.586	193.584	193.578	193.572	193.568	193.556	193.55	193.549	193.548	193.552	193.568	193.557	193.554	193.55	193.557	193.557	193.542	193.544	193.542	193.546
18	193.715	193.663	193.653	193.637	193.625	193.657	193.653	193.651	193.652	193.639	193.637	193.637	193.624	193.618	193.615	193.613	193.619	193.634	193.625	193.62	193.615	193.621	193.621	193.618	193.62	193.617	193.622
19	193.682	193.628	193.612	193.600	193.587	193.619	193.615	193.616	193.611	193.608	193.598	193.592	193.583	193.582	193.582	193.581	193.591	193.596	193.587	193.592	193.582	193.589	193.589	193.587	193.589	193.585	193.591
20	193.819	193.775	193.747	193.714	193.706	193.754	193.750	193.748	193.753	193.752	193.738	193.721	193.707	193.702	193.699	193.699	193.702	193.717	193.727	193.728	193.7	193.705	193.706	193.702	193.705	193.703	193.705
21	193.775	193.725	193.697	193.678	193.660	193.720	193.712	193.710	193.712	193.699	193.693	193.686	193.672	193.663	193.66	193.655	193.656	193.668	193.685	193.675	193.65	193.655	193.656	193.652	193.654	193.651	193.657
22	193.620	193.537	193.512	193.502	193.498	193.545	193.544	193.547	193.548	193.534	193.523	193.517	193.504	193.5	193.498	193.499	193.497	193.509	193.519	193.513	193.503	193.509	193.51	193.507	193.51	193.506	193.507
23	193.668	193.606	193.596	193.577	193.569	193.603	193.602	193.603	193.604	193.600	193.593	193.587	193.574	193.567	193.563	193.56	193.564	193.572	193.568	193.57	193.561	193.567	193.567	193.565	193.566	193.562	193.566
24	193.698	193.652	193.646	193.631	193.620	193.663	193.658	193.657	193.661	193.656	193.652	193.652	193.638	193.63	193.624	193.62	193.626	193.637	193.631	193.633	193.62	193.627	193.627	193.626	193.627	193.624	193.627
25	193.637	193.585	193.568	193.540	193.534	193.573	193.570	193.569	193.574	193.572	193.564	193.559	193.544	193.537	193.532	193.529	193.54	193.54	193.549	193.547	193.53	193.537	193.535	193.533	193.535	193.532	193.535
26	193.895	193.783	193.770	193.726	193.718	193.769	193.755	193.747	193.751	193.737	193.729	193.722	193.708	193.699	193.696	193.696	193.696	193.709	193.712	193.715	193.697	193.705	193.705	193.703	193.705	193.702	193.704
27	193.788	193.618	193.605	193.567	193.564		193.582	193.578	193.584	193.577	193.564	193.559	193.549	193.546	193.546	193.546	193.545	193.555	193.553	193.553	193.547	193.554	193.554	193.551	193.553	193.55	193.554
28	193.830	193.713	193.703	193.685	193.673	193.692	193.682	193.677	193.681	193.676	193.668	193.67	193.66	193.656	193.657	193.658	193.658	193.663	193.659	193.663	193.653	193.666	193.665	193.661	193.663	193.661	193.663
29	193.833	193.717	193.694	193.664	193.656	193.689	193.669	193.654	193.660	193.656	193.644	193.635	193.629	193.625	193.627	193.626	193.628	193.634	193.64	193.636	193.625	193.631	193.632	193.629	193.63	193.627	193.63
30	193.715	193.609	193.589	193.573	193.562	193.574	193.560	193.556	193.555	193.551	193.542	193.545	193.535	193.53	193.532	193.533	193.532	193.539	193.537	193.536	193.526	193.536	193.534	193.532	193.534	193.53	193.534
31	193.696	193.591	193.587	193.571	193.562	193.583	193.574	193.559	193.564	193.551	193.546	193.549	193.538	193.534	193.535	193.535	193.534	193.542	193.544	193.545	193.53	193.538	193.537	193.534	193.535	193.533	193.536
32	193.779	193.663	193.659	193.636	193.630	193.654	193.637	193.632	193.632	193.623	193.619	193.617	193.586	193.555	193.558	193.557	193.556	193.563	193.569	193.566	193.56	193.568	193.568	193.565	193.567	193.564	193.566
33	193.796	193.660	193.643	193.612	193.605	193.641	193.620	193.616	193.619	193.606	193.598	193.601	193.597	193.593	193.594	193.593	193.596	193.602	193.607	193.601	193.594	193.601	193.601	193.598	193.601	193.599	193.602
34	193.863	193.746	193.732	193.707	193.683	193.716	193.705	193.699	193.704	193.697	193.691	193.685	193.677	193.67	193.67	193.67	193.672	193.679	193.681	193.68	193.67	193.678	193.677	193.675	193.676	193.674	193.676
35	193.849	193.727	193.706	193.654	193.643	193.687	193.675	193.671	193.673	193.670	193.658	193.65	193.636	193.63	193.631	193.632	193.632	193.64	193.643	193.643	193.631	193.638	193.639	193.637	193.638	193.636	193.637
36	193.884	193.758	193.751	193.728	193.718	193.748	193.737	193.735	193.737	193.718	193.712	193.717	193.707	193.703	193.705	193.702	193.703	193.71	193.712	193.702	193.699	193.714	193.704	193.703	193.704	193.703	193.705
37	193.806	193.650	193.628	193.614	193.592	193.629	193.613	193.610	193.612	193.595	193.589	193.592	193.584	193.579	193.581	193.58	193.58	193.588	193.602	193.591	193.586	193.594	193.592	193.591	193.591	193.59	193.594
38	193.851	193.709	193.696	193.678	193.664	193.695	193.684	193.679	193.682	193.672	193.666	193.67	193.659	193.653	193.654	193.652	193.654	193.662	193.662	193.659	193.653	193.662	193.656	193.659	193.658	193.657	193.657
39	193.885	193.738	193.716	193.674	193.659	193.692	193.675	193.665	193.664	193.657	193.648	193.65	193.641	193.621	193.631	193.632	193.632	193.643	193.647	193.648	193.637	193.628	193.636	193.635	193.634	193.633	193.637
40	193.762	193.631	193.626	193.603	193.592	193.621	193.613	193.604	193.608	193.597	193.591	193.594	193.583	193.575	193.576	193.577	193.578	193.585	193.788	193.584	193.576	193.583	193.581	193.579	193.579	193.578	193.581
41	193.818	193.683	193.656	193.641	193.625	193.654	193.643	193.634	193.640	193.638	193.633	193.632	193.63	193.617	193.609	193.61	193.61	193.618	193.616	193.616	193.609	193.618	193.614	193.614	193.615	193.613	193.617
42	193.891	193.768	193.750	193.725	193.700	193.734	193.723	193.712	193.715	193.714	193.707	193.708	193.702	193.694	193.69	193.689	193.692	193.701	193.693	193.695	193.68	193.685	193.684	193.68	193.683	193.681	193.684
43	193.837	193.689	193.678	193.647	193.637	193.667	193.660	193.654	193.657	193.656	193.647	193.647	193.637	193.629	193.63	193.631	193.629	193.636	193.637	193.638	193.63	193.637	193.635	193.633	193.634	193.633	193.636
44	193.820	193.693	193.668	193.578	193.571	193.601	193.593	193.590	193.594	193.589	193.582	193.582	193.573	193.567	193.566	193.568	193.565	193.574	193.572	193.577	193.569	193.579	193.577	193.575	193.576	193.574	193.576
45	193.822	193.681	193.680	193.663	193.660	193.685	193.673	193.671	193.674	193.666	193.656	193.659	193.648	193.643	193.646	193.646	193.646	193.655	193.649	193.648	193.641	193.65	193.649	193.646	193.647	193.645	193.649
46	193.913	193.805	193.796	193.758	193.749	193.786	193.774	193.768	193.772	193.767	193.758	193.759	193.744	193.738	193.738	193.738	193.74	193.748	193.75	193.752	193.733	193.74	193.74	193.738	193.739	193.738	193.743
47	193.879	193.763	193.752	193.730	193.717	193.751	193.741	193.736	193.742	193.728	193.722	193.727	193.717	193.711	193.711	193.712	193.712	193.72	193.724	193.718	193.713	193.72	193.721	193.718	193.719	193.718	193.722
48	193.857	193.735	193.726	193.703	193.688	193.717	193.710	193.702	193.707	193.695	193.690	193.693	193.685	193.679	193.678	193.677	193.678	193.686	193.684	193.681	193.675	193.681	193.68	193.677	193.677	193.676	193.678
49	193.849	193.676	193.668	193.633	193.615	193.648	193.630	193.619	193.616	193.609	193.601	193.604	193.597	193.59	193.588	193.585	193.586	193.595	193.601	193.602	193.59	193.592	193.59	193.588	193.588	193.587	193.589
50	193.709	193.548	193.550	193.526	193.506	193.524	193.511	193.510	193.513	193.508	193.498	193.5	193.494	193.486	193.485	193.486	193.487	193.497	193.502	193.486	193.479	193.488	193.487	193.487	193.487	193.485	193.487
51		192.301	192.248	192.182	192.160									192.046	192.034	192.03	192.033							192.034	192.036	192.035	192.039
52		192.448	192.426	192.376	192.341									192.149	192.134	192.131	192.131							192.117	192.121	192.12	192.124
53		192.546	192.524	192.480	192.452									192.295	192.284	192.277	192.279							192.258	192.26	192.26	192.263
54		192.551	192.520	192.475	192.426									192.186	192.182	192.167	192.162							192.148	192.151	192.15	192.152
55		192.534	192.483	192.401	192.383									192.296	192.292	192.283	192.281							192.192	192.192	192.191	192.198
56		192.471	192.428	192.356	192.315									192.144	192.141	192.135	192.137							192.121	192.123	192.122	192.127
57		192.479	192.443	192.388	192.338									192.184	192.183	192.181	192.184							192.177	192.179	192.178	192.182
58		192.509	192.495	192.436	192.397									192.179	192.175	192.172	192.172							192.164	192.166	192.166	192.17
59		192.374	192.341	192.295	192.265									192.101	192.097	192.096	192.098							192.093	192.096	192.094	192.099
60		192.354	192.322	192.287	192.259									192.111	192.105	192.105	192.105							192.055	192.102	192.101	192.106
61		192.332	192.308	192.297	192.259									192.176	192.145	192.128	192.129							192.115	192.116	192.115	192.12
62		192.378	192.348	192.302	192.256									192.112	192.095	192.092	192.095							192.095	192.096	192.096	192.1
63		192.478	192.455	192.416	192.362									192.202	192.198	192.194	192.199							192.174	192.176	192.176	192.18
64		192.534	192.497	192.457	192.397									192.175	192.172	192.166	192.167							192.165	192.168	192.167	192.171
65		192.387	192.343	192.286	192.238									192.083	192.08	192.072	192.073							192.064	192.053	192.064	192.068
66		192.307	192.265	192.199	192.156									192.02	192.014	191.997	191.996							191.974	191.975	191.974	191.979
67		192.324	192.292	192.232	192.181									192.033	192.02	192.008	192.009							192.008	192.01	192.009	192.013
68		192.396	192.373	192.323	192.261									192.126	192.112	192.105	192.109							192.098	192.099	192.099	192.1
69		192.332	192.304	192.237	192.205									192.073	192.053	192.047	192.05							192.055	192.055	192.055	192.053
70		192.313	192.291	192.268	192.229									192.059	192.03	192.021	192.022							192.026	192.026	192.027	192.031
71		192.265	192.236	192.216	192.187									192.007	191.991	191.987	191.987							191.996	191.998	191.995	192
72		192.166			192.166									192.026	191.996	191.972	191.969							191.96	191.96	191.959	191.96
73		192.321	192.317	192.282	192.250									191.995	191.985	191.983	191.985							191.977	191.979	191.977	191.982
74		192.315	192.293	192.256	192.219									192.051	192.034	192.027	192.027							191.935	191.935	191.934	191.94
75		192.346	192.323	192.267	192.237										193.433	193.433											
76		192.179	192.138	192.073	192.039									191.888	191.868	191.853								191.855	191.854	191.852	191.856
77		192.209	192.165	192.121	192.070									191.958	191.941	191.914								191.917	191.919	191.917	191.921
78		192.355	192.315	192.243	192.177									192.08	192.062	192.043								191.996	191.995	191.994	192.002
79		192.269	192.231	192.151	192.108									191.962	191.94	191.967								191.906	191.906	191.906	191.912
80		192.180	192.137	192.037	192.008									191.915	191.904	191.901								191.899	191.899	191.898	191.903
81		192.144	192.094	192.016	191.995									191.938	191.92	191.905								191.902	191.902	191.9	191.905
82		192.233	192.179	192.086	192.038									191.953	191.936	191.918								191.916	191.916	191.914	191.922
83		192.323	192.280	192.190	192.141									192.046	192.03	192.015								191.979	191.978	191.975	191.984
84		192.207	192.161	192.102	192.039									191.913	191.898	191.883								191.894	191.891	191.889	191.894
85		192.125	192.047	191.967	191.916									191.858	191.84	191.829								191.829	191.828	191.826	191.831
86		192.135	192.090	192.013	191.985									191.943	191.933	191.921								191.876	191.875	191.872	191.878
87		192.143	192.106	192.047	192.011									191.986	191.977	191.968								191.92	191.918	191.917	191.921
88		192.140	192.106	192.038	192.016									191.997	191.988	191.978								191.945	191.943	191.942	191.947
89		192.169	192.151	192.078	192.053									191.962	191.95	191.936								191.919	191.918	191.918	191.922
90		192.087	192.060	191.998	191.981									191.888	191.873	191.867								191.865	191.863	191.863	191.869
91		192.102	192.074	192.018	192.000									191.984	191.971	191.959								191.916	191.916	191.914	191.92
92		192.220	192.198	192.157	192.139									192.124	192.113	192.104								192.042	192.04	192.04	192.044
93		192.256	192.227	192.189	192.170									192.163	192.158	192.154								192.08	192.074	192.074	192.08
94		192.236	192.182	192.111	192.088									192.079	192.077	192.073								191.99	191.934	191.983	191.988
95		192.188	192.143	192.076	192.045									191.965	191.962	191.957								191.916	191.912	191.91	191.917
96		192.135	192.092	192.028	191.998									191.916	191.924	191.92								191.912	191.908	191.905	191.911
97		192.266	192.242	192.202	192.180									192.143	192.137	192.136								192.035	192.031	192.03	192.034
98		192.227	192.184	192.136	192.108									192.145	192.139	192.127								191.97	191.952	191.952	191.957
99		192.215	192.174	192.138	192.120									192.122	192.11	192.098								192.004	192.003	192.002	192.007
100		192.255	192.224	192.179	192.161																						
1R	193.877	193.753	193.730	193.725	193.719	193.763	193.762	193.764	193.755	193.747	193.734	193.722	193.714	193.713	193.715	193.715	193.718	193.723	193.734	193.736	193.71	193.717	193.715	193.714	193.716	193.714	193.716
2R	193.995	193.848	193.833	193.812	193.806	193.861	193.862	193.861	193.864	193.851	193.831	193.82	193.807	193.803	193.802	193.803	193.806	193.815	193.829	193.823	193.799	193.803	193.802	193.8	193.804	193.801	193.803
3R	194.015	193.886	193.853	193.832	193.823	193.873	193.872	193.877	193.870	193.861	193.839	193.829	193.815	193.812	193.812	193.813	193.816	193.821	193.835	193.822	193.808	193.813	193.811	193.81	193.813	193.809	193.814
4R	193.981	193.836	193.821	193.802	193.790	193.851	193.851	193.849	193.842	193.828	193.804	193.798	193.784	193.779	193.779	193.78	193.786	193.795	193.806	193.79	193.773	193.782	193.78	193.779	193.78	193.778	193.781
5R	194.019		193.719	193.702	193.694	193.751	193.751	193.752	193.738	193.729	193.703	193.697	193.686	193.683	193.683	193.685	193.686	193.694	193.714	193.697	193.679	193.686	193.686	193.685	193.685	193.683	193.685
6R	193.852	193.702	193.692	193.675	193.659	193.691	193.690	193.688	193.687	193.678	193.672	193.666	193.656	193.65	193.651	193.651	193.658	193.664	193.673	193.668	193.65	193.653	193.652	193.651	193.652	193.649	193.653
7R	193.884	193.729	193.652	193.579	193.577	193.608	193.607	193.605	193.611	193.607	193.590	193.582	193.572	193.571	193.571	193.571	193.574	193.574	193.581	193.578	193.569	193.574	193.574	193.572	193.574	193.571	193.574
8R	193.916	193.805	193.786	193.760	193.752	193.786	193.784	193.783	193.785	193.777	193.765	193.754	193.745	193.742	193.743	193.743	193.746	193.754	193.758	193.759	193.737	193.745	193.746	193.743	193.745	193.742	193.745
9R	193.928	193.798	193.759	193.751	193.744	193.780	193.779	193.783	193.785	193.767	193.744	193.741	193.735	193.734	193.734	193.735	193.738	193.741	193.76	193.745	193.732	193.736	193.736	193.734	193.737	193.734	193.737
10R	193.852	193.701	193.672	193.662	193.653	193.703	193.701	193.702	193.702	193.683	193.655	193.652	193.647	193.645	193.647	193.647	193.653	193.661	193.679	193.659	193.643	193.647	193.648	193.646	193.648	193.645	193.649
11R	193.960	193.806	193.786	193.762	193.759	193.798	193.796	193.796	193.800	193.796	193.780	193.766	193.754	193.751	193.749	193.75	193.752	193.761	193.776	193.777	193.743	193.748	193.749	193.747	193.749	193.746	193.75
12R	194.021	193.923	193.891	193.868	193.849	193.875	193.872	193.873	193.878	193.872	193.867	193.86	193.847	193.842	193.838	193.837	193.84	193.848	193.845	193.846	193.834	193.838	193.84	193.837	193.839	193.836	193.838
13R	193.945	193.837	193.782	193.756	193.750	193.778	193.772	193.770	193.771	193.768	193.764	193.755	193.743	193.739	193.733	193.732	193.736	193.742	193.737	193.741	193.727	193.735	193.735	193.732	193.734	193.732	193.734
14R	193.989	193.795	193.778	193.754	193.744	193.763	193.760	193.758	193.758	193.751	193.748	193.743	193.729	193.726	193.722	193.721	193.724	193.731	193.725	193.722	193.716	193.72	193.72	193.718	193.719	193.718	193.721
15R	193.773	193.549	193.597	193.539	193.527	193.552	193.550	193.551	193.552	193.549	193.544	193.536	193.522	193.515	193.513	193.513	193.516	193.526	193.522	193.526	193.51	193.518	193.516	193.515	193.515	193.513	193.515

Date of reading	21-Jan-08	4-Jul-08	23-Jul-08	15-Sep-08	3-Oct-08	6-May-09	21-May-09	4-Jun-09	18-Jun-09	2-Jul-09	16-Jul-09	30-Jul-09	13-Aug-09	27-Aug-09	10-Sep-09	29-Sep-09	8-Oct-09	22-Oct-09	1-Jun-10	16-Jun-10	13-Jul-10	28-Jul-10	10-Aug-10	23-Aug-10	7-Sep-10	7-Oct-10	18-Oct-10
Elevation of MP (m)		Corrected with 25.977 m	Corrected with 25.977 m	Corrected with 25.977 m	Corrected with 25.977 m	Corrected with 25.977 m	Corrected with 25.977 m																				
16R	193.789	193.623	193.614	193.590	193.577	193.597	193.596	193.597	193.598	193.596	193.589	193.584	193.57	193.566	193.563	193.562	193.567	193.576	193.559	193.564	193.556	193.563	193.562	193.559	193.562	193.559	193.564
17R	193.811	193.698	193.596	193.574	193.570	193.563	193.591	193.589	193.588	193.584	193.578	193.572	193.56	193.555	193.553	193.553	193.559	193.575	193.56	193.557	193.55	193.559	193.56	193.556	193.558	193.554	193.561
18R	193.918	193.774	193.751	193.734	193.721	193.748	193.746	193.744	193.746	193.734	193.732	193.732	193.718	193.713	193.71	193.708	193.715	193.731	193.715	193.712	193.706	193.713	193.712	193.71	193.712	193.709	193.714
19R	193.866	193.747	193.738	193.726	193.717	193.743	193.740	193.740	193.734	193.733	193.723	193.718	193.709	193.707	193.707	193.707	193.712	193.722	193.707	193.712	193.706	193.711	193.711	193.708	193.71	193.707	193.713
20R	193.920	193.807	193.787	193.759	193.751	193.796	193.792	193.790	193.794	193.793	193.779	193.764	193.749	193.744	193.742	193.741	193.748	193.763	193.761	193.762	193.735	193.742	193.742	193.739	193.741	193.738	193.743
21R	193.928	193.823	193.791	193.770	193.754	193.805	193.802	193.800	193.803	193.789	193.782	193.775	193.76	193.612	193.748	193.744	193.748	193.761	193.769	193.76	193.734	193.742	193.741	193.739	193.76	193.738	193.743
22R	193.750	193.606	193.536	193.522	193.514	193.557	193.553	193.555	193.556	193.543	193.532	193.524	193.513	193.509	193.507	193.506	193.515	193.525	193.524	193.517	193.504	193.514	193.514	193.511	193.514	193.51	193.515
23R	193.848	193.757	193.698	193.682	193.672	193.705	193.704	193.704	193.707	193.701	193.695	193.689	193.675	193.669	193.664	193.661	193.667	193.674	193.665	193.668	193.657	193.664	193.663	193.662	193.663	193.661	193.664
24R	193.884	193.797	193.776	193.757	193.749	193.784	193.781	193.779	193.784	193.781	193.776	193.774	193.76	193.752	193.748	193.744	193.748	193.757	193.747	193.749	193.738	193.745	193.743	193.742	193.745	193.742	193.745
25R	193.712	193.619	193.585	193.562	193.554	193.593	193.589	193.588	193.594	193.589	193.582	193.577	193.561	193.554	193.551	193.547	193.552	193.565	193.562	193.561	193.545	193.552	193.55	193.548	193.55	193.547	193.553
26R	194.029	193.857	193.841	193.795	193.789	193.830	193.823	193.814	193.818	193.815	193.807	193.799	193.785	193.777	193.774	193.773	193.775	193.788	193.781	193.785	193.767	193.775	193.775	193.773	193.775	193.773	193.776
27R	194.056	193.791	193.777	193.742	193.737	193.765	193.747	193.742	193.748	193.742	193.732	193.725	193.714	193.707	193.707	193.708	193.707	193.717	193.708	193.707	193.7	193.708	193.709	193.707	193.708	193.706	193.708
28R	193.988	193.807	193.792	193.772	193.759	193.771	193.759	193.754	193.759	193.754	193.747	193.748	193.737	193.747	193.739	193.74	193.74	193.747	193.732	193.737	193.728	193.738	193.738	193.736	193.738	193.736	193.739
29R	193.976	193.781	193.741	193.715	193.707	193.733	193.720	193.705	193.711	193.708	193.697	193.688	193.682	193.679	193.68	193.681	193.682	193.69	193.69	193.686	193.674	193.682	193.681	193.678	193.68	193.678	193.682
30R	193.928	193.733	193.715	193.703	193.689	193.690	193.680	193.674	193.679	193.677	193.668	193.67	193.661	193.657	193.658	193.66	193.66	193.666	193.66	193.658	193.65	193.658	193.656	193.654	193.655	193.653	193.656
31R	193.839	193.631	193.610	193.587	193.579	193.600	193.588	193.573	193.580	193.566	193.561	193.564	193.552	193.549	193.551	193.552	193.553	193.563	193.559	193.559	193.543	193.552	193.551	193.548	193.55	193.548	193.553
32R	193.953	193.682	193.713	193.692	193.684	193.704	193.688	193.682	193.683	193.673	193.669	193.667	193.66	193.658	193.659	193.66	193.661	193.666	193.662	193.659	193.653	193.66	193.661	193.657	193.66	193.658	193.661
33R	194.064	193.823	193.794	193.692	193.757	193.777	193.758	193.750	193.755	193.740	193.733	193.738	193.734	193.726	193.727	193.728	193.73	193.737	193.735	193.729	193.721	193.729	193.73	193.728	193.729	193.728	193.732
34R	194.115	193.915	193.890	193.864	193.843	193.867	193.855	193.849	193.854	193.848	193.841	193.836	193.828	193.822	193.821	193.823	193.823	193.827	193.824	193.827	193.817	193.822	193.822	193.819	193.822	193.82	193.824
35R	194.059	193.834	193.772	193.720	193.709	193.748	193.735	193.730	193.732	193.727	193.714	193.705	193.692	193.687	193.688	193.689	193.692	193.7	193.698	193.697	193.683	193.693	193.692	193.689	193.691	193.69	193.695
36R	194.041	193.841	193.846	193.822	193.805	193.827	193.817	193.814	193.816	193.798	193.791	193.795	193.787	193.782	193.784	193.785	193.787	193.795	193.788	193.778	193.772	193.781	193.78	193.778	193.78	193.778	193.782
37R	193.921	193.712	193.687	193.675	193.650	193.684	193.665	193.660	193.664	193.647	193.640	193.644	193.635	193.63	193.631	193.632	193.634	193.643	193.643	193.632	193.626	193.635	193.632	193.632	193.634	193.631	193.635
38R	194.050	193.863	193.832	193.811	193.798	193.826	193.814	193.806	193.809	193.799	193.794	193.795	193.787	193.78	193.781	193.782	193.783	193.794	193.784	193.781	193.776	193.783	193.782	193.781	193.782	193.779	193.784
39R	194.068	193.888	193.866	193.838	193.819	193.844	193.833	193.826	193.829	193.823	193.814	193.815	193.806	193.798	193.797	193.798	193.799	193.815	193.803	193.804	193.796	193.797	193.796	193.793	193.795	193.792	193.796
40R	193.949	193.748	193.681	193.659	193.649	193.677	193.670	193.661	193.665	193.651	193.647	193.65	193.638	193.63	193.631	193.633	193.636	193.642	193.638	193.634	193.628	193.632	193.632	193.629	193.63	193.628	193.633
41R	193.977	193.742	193.706	193.691	193.675	193.703	193.692	193.682	193.687	193.686	193.680	193.68	193.677	193.665	193.661	193.663	193.664	193.674	193.664	193.663	193.667	193.666	193.663	193.663	193.664	193.662	193.666
42R	194.043	193.856	193.838	193.812	193.789	193.828	193.812	193.798	193.803	193.799	193.793	193.794	193.788	193.779	193.777	193.777	193.78	193.789	193.779	193.782	193.77	193.778	193.776	193.774	193.775	193.774	193.777
43R	193.989	193.795	193.773	193.744	193.736	193.762	193.754	193.747	193.750	193.748	193.738	193.739	193.729	193.721	193.722	193.723	193.725	193.734	193.724	193.726	193.716	193.722	193.723	193.71	193.722	193.721	193.724
44R	193.982	193.792	193.760	193.736	193.704	193.722	193.710	193.707	193.711	193.707	193.700	193.7	193.691	193.686	193.685	193.686	193.691	193.701	193.684	193.687	193.678	193.69	193.69	193.687	193.679	193.687	193.694
45R	193.977	193.750	193.740	193.724	193.720	193.744	193.732	193.731	193.733	193.727	193.718	193.718	193.709	193.705	193.707	193.708	193.713	193.72	193.706	193.706	193.697	193.708	193.708	193.706	193.706	193.704	193.709
46R	194.081	193.922	193.905	193.866	193.855	193.886	193.875	193.867	193.872	193.867	193.858	193.859	193.845	193.838	193.838	193.839	193.842	193.852	193.861	193.853	193.835	193.841	193.841	193.838	193.839	193.839	193.844
47R	193.968	193.805	193.809	193.787	193.774	193.802	193.793	193.787	193.793	193.782	193.775	193.779	193.769	193.764	193.763	193.763	193.766	193.774	193.77	193.765	193.758	193.767	193.767	193.765	193.766	193.763	193.77
48R	193.958	193.810	193.791	193.751	193.755	193.779	193.770	193.761	193.767	193.756	193.749	193.752	193.746	193.739	193.739	193.739	193.741	193.749	193.741	193.736	193.729	193.738	193.737	193.734	193.735	193.734	193.737
49R	193.998	193.798	193.790	193.745	193.727	193.753	193.744	193.733	193.738	193.730	193.722	193.726	193.717	193.711	193.709	193.708	193.709	193.72	193.717	193.719	193.798	193.709	193.709	193.708	193.708	193.707	193.712
50R	193.835	193.634	193.630	193.614	193.596	193.611	193.601	193.598	193.605	193.603	193.593	193.597	193.588	193.579	193.581	193.581	193.584	193.595	193.582	193.579	193.572	193.582	193.581	193.578	193.58	193.579	193.584
51R		192.462	192.418	192.351	192.294									192.046	192.042	192.037	192.038								192.026	192.025	192.03
52R		192.577	192.512	192.457	192.421									192.231	192.219	192.214	192.217							192.024	192.186	192.185	192.19
53R		192.642	192.623	192.680	192.552									192.4	192.39	192.384	192.387							192.183	192.329	192.329	192.342
54R		192.607	192.578	192.526	192.481									192.237	192.233	192.22	192.224							192.327	192.184	192.184	192.192
55R		192.626	192.578	192.484	192.464									192.319	192.312	192.303	192.303							192.181	192.183	192.188	192.195
56R		192.561	192.523	192.450	192.408									192.241	192.236	192.232	192.238							192.188	192.186	192.186	192.193
57R		192.578	192.531	192.471	192.420									192.262	192.262	192.259	192.265							192.184	192.236	192.246	192.248
58R		192.562	192.542	192.489	192.446									192.255	192.253	192.249	192.253							192.234	192.23	192.229	192.24
59R		192.476	192.436	192.401	192.349									192.115	192.11	192.109	192.11							192.227	192.096	192.095	192.1
60R		192.377	192.377	192.344	192.313									192.111	192.105	192.105	192.109							192.095	192.088	192.088	192.092
61R		192.445	192.418	192.410	192.374									192.23	192.199	192.183	192.189							192.086	192.135	192.134	192.139
62R		192.437	192.394	192.353	192.304									192.137	192.12	192.118	192.122							192.134	192.108	192.107	192.112
63R		192.515	192.507	192.465	192.411									192.226	192.222	192.217	192.222							192.106	192.212	192.202	192.21
64R		192.584	192.520	192.481	192.421									192.212	192.209	192.203	192.209							192.2	192.183	192.181	192.192
65R		192.436	192.388	192.332	192.280									192.106	192.104	192.095	192.1							192.179	192.071	192.073	192.082
66R		192.406	192.365	192.298	192.252									192.071	192.064	192.048	192.049							192.069	192.029	192.028	192.037
67R		192.421	192.308	192.254	192.203									192.045	192.032	192.021	192.025							192.026	192.006	192.005	192.01
68R		192.490	192.443	192.397	192.345									192.183	192.166	192.16	192.164							192.005	192.138	192.136	192.141
69R		192.401	192.378	192.338	192.295									192.153	192.133	192.127	192.135							192.135	192.108	192.107	192.111
70R		192.341	192.338	192.316	192.276									192.12	192.092	192.084	192.089							192.106	192.065	192.063	192.07
71R		192.309	192.305	192.288	192.255									192.092	192.075	192.07	192.079							192.064	192.043	192.041	192.054
72R			192.299	192.263	192.218									192.085	192.06	192.039	192.046							192.041	192.001	192	192.013
73R		192.415	192.348	192.318	192.281									192.04	192.031	192.03	192.036							192	191.98	191.978	191.989
74R		192.419	192.383	192.346	192.312									192.028	192.011	192.003	192.009							191.978	191.956	191.954	191.961
75R		192.432	192.388	192.325	192.286									191.952	191.93	191.912	191.915							191.954	191.874	191.874	191.887
76R		192.609	192.262	192.187	192.144									191.961	191.941	191.927								191.873	191.897	191.895	191.903
77R		192.309	192.265	192.219	192.164									192.012	191.995	191.979								191.898	191.949	191.948	191.958
78R		192.414	192.372	192.301	192.228									192.081	192.064	192.043								191.951	191.992	191.992	192.005
79R		192.425	192.379	192.287	192.229									192.029	192.006	191.983								191.993	191.934	191.933	191.942
80R		192.247	192.221	192.118	192.086									191.954	191.944	191.942								191.935	191.923	191.923	191.931
81R		192.200	192.176	192.095	192.070									191.976	192.058	191.942								191.925	191.93	191.9	191.939
82R		192.283	192.231	192.132	192.091									191.971	191.954	191.936								191.93	191.917	191.916	191.924
83R		192.456	192.425	192.304	192.254									192.125	192.11	192.095								191.916	192.038	192.035	192.05
84R		192.233	192.189	192.123	192.063									191.961	191.946	191.93								192.037	191.905	191.903	191.917
85R		192.277	192.215	192.128	192.079									191.943	191.925	191.914								191.907	191.879	191.877	191.889
86R		192.304	192.289	192.222	192.181									192.108	192.098	192.087								191.882	192.041	192.04	192.048
87R		192.411	192.261	192.205	192.150									192.098	192.089	192.08								192.034	192.006	192.003	192.016
88R		192.247	192.214	192.114	192.093									192.058	192.048	192.039								192.007	191.985	191.984	191.991
89R		192.221	192.189	192.121	192.091									191.981	191.968	191.956								191.987	191.921	191.921	191.93
90R		192.205	192.183	192.097	192.077									191.948	191.933	191.928								191.923	191.907	191.907	191.913
91R		192.218	192.165	192.097	192.080									192.045	192.032	192.02								191.907	191.966	191.966	191.972
92R		192.315	192.280	192.238	192.222									192.183	192.172	192.164								191.967	192.095	192.094	192.102
93R		192.338	192.295	192.259	192.238									192.205	192.199	192.197								192.097	192.11	192.11	192.12
94R		192.320	192.281	192.213	192.188									192.169	192.167	192.163								192.115	192.068	192.067	192.073
95R		192.296	192.209	192.131	192.104									192.016	192.013	192.008								192.074	191.948	191.945	191.953
96R		192.230	192.189	192.121	192.094									192.002	191.999	191.998								191.95	191.963	191.961	191.971
97R		192.413	192.370	192.332	192.310									192.296	192.291	192.288								191.968	192.046	192.044	192.053
98R		192.335	192.285	192.234	192.202									192.199	192.193	192.182								192.055			
99R		192.354	192.303	192.273	192.254									192.208	192.196	192.183											
100R		192.291	192.266	192.218	192.191									192.138	192.124	192.108								192.038			
111	194.490	194.420	194.398	194.391	194.386	194.448	194.448	194.448	194.435	194.422	194.398	194.392	194.385	194.384	194.374	194.383	194.382	194.381	194.421	194.401	194.386	194.388	194.388	194.386	194.389	194.385	194.388
112	194.400	194.363	194.444	194.330	194.325	194.371	194.374	194.376	194.374	194.366	194.345	194.335	194.323	194.322	194.322	194.32	194.321	194.319	194.352	194.342	194.322	194.327	194.327	194.326	194.326	194.324	194.326
113	194.260	194.215	194.197	194.175	194.170	194.202	194.202	194.201	194.209	194.193	194.184	194.177	194.164	194.161	194.158	194.16	194.159	194.157	194.179	194.169	194.161	194.167	194.166	194.164	194.165	194.159	194.165
114	194.390	194.349	194.332	194.329	194.313	194.352	194.351	194.348	194.348	194.346	194.333	194.324	194.315	194.311	194.309	194.308	194.307	194.307	194.322	194.322	194.312	194.316	194.316	194.313	194.315	194.313	194.315
121	194.740	194.686	194.673	194.628	194.626	194.658	194.656	194.656	194.661	194.654	194.640	194.637	194.625	194.62	194.621	194.62	194.62	194.62	194.632	194.632	194.626	194.629	194.627	194.625	194.628	194.625	194.626
122	194.538	194.503	194.481	194.465	194.464	194.471	194.472	194.473	194.478	194.468	194.461	194.46	194.452	194.448	194.45	194.45	194.448	194.447	194.461	194.459	194.452	194.457	194.457	194.454	194.454	194.453	194.456
123	194.506	194.466	194.452	194.432	194.424	194.431	194.431	194.431	194.437	194.432	194.425	194.427	194.422	194.414	194.413	194.413	194.41	194.41	194.421	194.423	194.417	194.419	194.421	194.418	194.418	194.418	194.419
124	194.729	194.662	194.655	194.640	194.637	194.657	194.655	194.654	194.662	194.652	194.642	194.648	194.639	194.633	194.633	194.632	194.63	194.631	194.642	194.636	194.636	194.641	194.64	194.638	194.639	194.638	194.642
131		192.875	192.841	192.825	192.814									192.769	192.769	192.768	192.769							192.773	192.775	192.774	192.779
132		193.059	193.020	192.997	192.982									192.92	192.918	192.913	192.911							192.909	192.911	192.911	192.915
133		192.933	192.897	192.853	192.835									192.796	192.785	192.77	192.769							192.773	192.775	192.772	192.778
134		192.917	192.911	192.896	192.877									192.852	192.843	192.842	192.843							192.845	192.845	192.843	192.848
141		192.785	192.757	192.721	192.701									192.69	192.673	192.656								192.658	192.658	192.657	192.661
142		192.860	192.815	192.749	192.728									192.698	192.678	192.664								192.668	192.668	192.668	192.672
143		193.028	192.995	192.960	192.948									192.94	192.927	192.915								192.848	192.846	192.837	192.852
144		192.752	192.725	192.691	192.669									192.64	192.637	192.636								192.583	192.58	192.58	192.585
Date of reading		4-Jul-08	23-Jul-08	15-Sep-08	3-Oct-08	6-May-09	21-May-09	4-Jun-09	18-Jun-09	2-Jul-09	16-Jul-09	30-Jul-09	13-Aug-09	27-Aug-09	10-Sep-09	29-Sep-09	8-Oct-09	22-Oct-09	1-Jun-10	16-Jun-10	13-Jul-10	28-Jul-10	10-Aug-10	23-Aug-10	7-Sep-10	7-Oct-10	18-Oct-10
Reading #			0**		72- Nail re-established											15 &75- No reading; Value assumed identical to previous reading											
Data Corrections			None																								

Note: Only **reduced elevations** need to be entered in to this spreadsheet.

Yellow boxes indicate no measurement was taken.

Red boxes in SP Elevations indicate negative settlement since last consecutive reading.

Appendix A2
Survey Reports – Data Spreadsheets

	File Name:	10057NC-JUNE 1 2010 NW POND MONITORING.xlsx				
			21ROCK	193.769		
1	193.670		26	193.712		
1ROCK	193.734		26ROCK	193.781		
2	193.753		27	193.553		
2ROCK	193.829		27ROCK	193.708		
3	193.682		28	193.659		
3ROCK	193.835		28ROCK	193.732		
4	193.731		29	193.640		
4ROCK	193.806		29ROCK	193.690		
5	193.625		30	193.537		
5ROCK	193.714		30ROCK	193.660		
6	193.636		31	193.544		
6ROCK	193.673		31ROCK	193.559		
7	193.527		32	193.569		
7ROCK	193.581		32ROCK	193.662		
8	193.683		33	193.607		
8ROCK	193.758		33ROCK	193.735		
9	193.613		34	193.681		
9ROCK	193.760		34ROCK	193.824		
10	193.656		35	193.643		
10ROCK	193.679		35ROCK	193.698		
11	193.680		36	193.712		
11ROCK	193.776		36ROCK	193.788		
12	193.697		37	193.602		
12ROCK	193.845		37ROCK	193.643		
13	193.654		38	193.662		
13ROCK	193.737		38ROCK	193.784		
14	193.629		39	193.647		
14ROCK	193.725		39ROCK	193.803		
15	193.411		40	193.788		
15ROCK	193.522		40ROCK	193.638		
16	193.517		41	193.616		
16ROCK	193.559		41ROCK	193.664		
17	193.557		42	193.693		
17ROCK	193.560		42ROCK	193.779		
18	193.625		43	193.637		
18ROCK	193.715		43ROCK	193.724		
19	193.587		44	193.572		
19ROCK	193.707		44ROCK	193.684		
20	193.727		45	193.649		
20ROCK	193.761		45ROCK	193.706		
21	193.685		46	193.750		
21ROCK	193.769		46ROCK	193.861		
22	193.519		47	193.724		
22ROCK	193.524		47ROCK	193.770		
23	193.568		48	193.684		
23ROCK	193.665		48ROCK	193.741		
24	193.631		49	193.601		
24ROCK	193.747		49ROCK	193.717		
25	193.549		50	193.502		
25ROCK	193.562		50ROCK	193.582		
111	194.421		213	194.421		
112	194.352		214	194.642		
113	194.179		211	194.632		
114	194.322		212	194.461		

	File Name:	10057NC-June 16 2010 Monitorintg.xlsx			
1	193.717		26	193.715	
1R	193.736		26R	193.785	
2	193.743		27	193.553	
2R	193.823		27R	193.707	
3	193.671		28	193.663	
3R	193.822		28R	193.737	
4	193.716		29	193.636	
4R	193.790		29R	193.686	
5	193.606		30	193.536	
5R	193.697		30R	193.658	
6	193.629		31	193.545	
6R	193.668		31R	193.559	
7	193.524		32	193.566	
7R	193.578		32R	193.659	
8	193.687		33	193.601	
8R	193.759		33R	193.729	
9	193.598		34	193.680	
9R	193.745		34R	193.827	
10	193.638		35	193.643	
10R	193.659		35R	193.697	
11	193.683		36	193.702	
11R	193.777		36R	193.778	
12	193.698		37	193.591	
12R	193.846		37R	193.632	
13	193.658		38	193.659	
13R	193.741		38R	193.781	
14	193.626		39	193.648	
14R	193.722		39R	193.804	
15	193.414		40	193.584	
15R	193.526		40R	193.634	
16	193.523		41	193.616	
16R	193.564		41R	193.663	
17	193.554		42	193.695	
17R	193.557		42R	193.782	
18	193.620		43	193.638	
18R	193.712		43R	193.726	
19	193.592		44	193.577	
19R	193.712		44R	193.687	
20	193.728		45	193.648	
20R	193.762		45R	193.706	
21	193.675		46	193.752	
21R	193.760		46R	193.853	
22	193.513		47	193.718	
22R	193.517		47R	193.765	
23	193.570		48	193.681	
23R	193.668		48R	193.736	
24	193.633		49	193.602	
24R	193.749		49R	193.719	
25	193.547		50	193.486	
25R	193.561		50R	193.579	
111	194.401		213	194.423	
112	194.342		214	194.636	
113	194.169		211	194.632	
114	194.322		212	194.459	
			21R	193.759	
			142	195.156	

		File Name:		10057NG-JULY13 2010 NW POND MONITORING.xlsx																	
STN		BS	FS	SS	Elev		142	`	0.115			195.156		N26				1.221	193.697
							N1				1.578	193.693		R26				1.151	193.767
CP1064		1.948			197.300		R1				1.561	193.710		N27				1.371	193.547
TP1		0.592	2.203		197.045		N2				1.554	193.717		R27				1.218	193.700
TP2		0.493	2.002		195.635		R2				1.472	193.799		N28				1.265	193.653
TP3		1.473	1.468		194.660		N3				1.615	193.656		R28				1.190	193.728
TP4		1.620	1.598		194.535		R3				1.463	193.808		N29				1.293	193.625
TP5		1.682	1.492		194.663		N4				1.572	193.699		R29				1.244	193.674
TP6		1.257	1.115		195.230		R4				1.498	193.773		N30				1.392	193.526
TP7		1.200	1.372		195.115		N5				1.681	193.590		R30				1.268	193.650
142		1.158	1.159		195.156		R5				1.592	193.679		N31				1.388	193.530
TP7		1.455	1.200		195.114		N6				1.663	193.608		R31				1.375	193.543
TP6		1.417	1.338		195.231		R6				1.621	193.650		N32				1.358	193.560
TP5		1.510	1.985		194.663		N7				1.760	193.511		R32				1.265	193.653
TP4		1.758	1.638		194.535		R7				1.702	193.569		N33				1.324	193.594
TP3		1.537	1.634		194.659		N8				1.607	193.664		R33				1.197	193.721
TP2		2.008	0.563		195.633		R8				1.534	193.737		N34				1.248	193.670
TP1		2.059	0.595		197.046		N9				1.688	193.583		R34				1.101	193.817
CP1064			1.801		197.304		R9				1.539	193.732		N35				1.287	193.631
							N10				1.651	193.620		R35				1.235	193.683
	Σ BS=	23.167	Σ FS=	23.163			R10				1.628	193.643		N36				1.219	193.699
							N11				1.622	193.649		R36				1.146	193.772
	LOOP CLOSURE=		0.004				R11				1.528	193.743		N37				1.332	193.586
							N12				1.589	193.682		R37				1.292	193.626
							R12				1.437	193.834		N38				1.265	193.653
							N13				1.627	193.644		R38				1.142	193.776
							R13				1.544	193.727		N39				1.281	193.637
							N14				1.651	193.620		R39				1.122	193.796
							R14				1.555	193.716		N40				1.342	193.576
							N15				1.871	193.400		R40				1.290	193.628
							R15				1.761	193.510		N41				1.309	193.609
							N16				1.758	193.513		R41				1.251	193.667
							R16				1.715	193.556		N42				1.238	193.680
							N17				1.721	193.550		R42				1.148	193.770
							R17				1.721	193.550		N43				1.288	193.630
							N18				1.656	193.615		R43				1.202	193.716
							R18				1.565	193.706		N44				1.349	193.569
							N19				1.689	193.582		R44				1.240	193.678
							R19				1.565	193.706		N45				1.277	193.641
							N20				1.571	193.700		R45				1.221	193.697
							R20				1.536	193.735		N46				1.185	193.733
							N21				1.621	193.650		R46				1.083	193.835
							R21				1.537	193.734		N47				1.205	193.713
							N22				1.768	193.503		R47				1.160	193.758
							R22				1.767	193.504		N48				1.243	193.675
							N23				1.710	193.561		R48				1.189	193.729
							R23				1.614	193.657		N49				1.328	193.590
							N24				1.651	193.620		R49				1.120	193.798
							R24				1.533	193.738		N50				1.439	193.479
							N25				1.741	193.530		R50				1.346	193.572
							R25				1.726	193.545							
														P213				0.501	194.417
							P113				1.110	194.161		P214				0.282	194.636
							P112				0.949	194.322		P211				0.292	194.626
							P111				0.885	194.386		P212				0.466	194.452
							P114				0.959	194.312							
														R24		1.531	1.176		193.742
							R25		1.371	1.724		193.547							
														142			0.116		195.157
															Σ BS=	0.000	Σ FS=	0.000	
															LOOP CLOSURE=		0.000		

	File name:	10057NC-July 28 2010 NW Pond Monitoring.xlsx				
1	193.698		26	193.705		
1R	193.717		26R	193.775		
2	193.69		27	193.554		
2R	193.803		27R	193.708		
3	193.66		28	193.666		
3R	193.813		28R	193.738		
4	193.706		29	193.631		
4R	193.782		29R	193.682		
5	193.597		30	193.536		
5R	193.686		30R	193.658		
6	193.613		31	193.538		
6R	193.653		31R	193.552		
7	193.52		32	193.568		
7R	193.574		32R	193.66		
8	193.671		33	193.601		
8R	193.745		33R	193.729		
9	193.588		34	193.678		
9R	193.736		34R	193.822		
10	193.624		35	193.638		
10R	193.647		35R	193.693		
11	193.654		36	193.714		
11R	193.748		36R	193.781		
12	193.688		37	193.594		
12R	193.838		37R	193.635		
13	193.652		38	193.662		
13R	193.735		38R	193.783		
14	193.623		39	193.628		
14R	193.72		39R	193.797		
15	193.407		40	193.583		
15R	193.518		40R	193.632		
16	193.52		41	193.618		
16R	193.563		41R	193.666		
17	193.557		42	193.685		
17R	193.558		42R	193.778		
18	193.621		43	193.637		
18R	193.713		43R	193.722		
19	193.589		44	193.579		
19R	193.711		44R	193.69		
20	193.705		45	193.65		
20R	193.742		45R	193.708		
21	193.655		46	193.74		
21R	193.742		46R	193.841		
22	193.509		47	193.72		
22R	193.514		47R	193.767		
23	193.567		48	193.681		
23R	193.664		48R	193.738		
24	193.627		49	193.592		
24R	193.745		49R	193.709		
25	193.537		50	193.488		
25R	193.552		50R	193.582		
111	194.388		211	194.629		
112	194.327		212	194.457		
113	194.167		213	194.37		
114	194.316		214	194.641		

	File Name:	10-057-NC August 10 2010 NW Pon					
1	193.697		26	193.705		111	194.388
1R	193.715		26R	193.775		112	194.327
2	193.722		27	193.554		113	194.166
2R	193.802		27R	193.709		114	194.316
3	193.659		28	193.665		211	194.627
3R	193.811		28R	193.738		212	194.457
4	193.704		29	193.632		213	194.421
4R	193.78		29R	193.681		214	194.64
5	193.596		30	193.534			
5R	193.686		30R	193.656			
6	193.612		31	193.537			
6R	193.652		31R	193.551			
7	193.519		32	193.568			
7R	193.574		32R	193.661			
8	193.672		33	193.601			
8R	193.746		33R	193.73			
9	193.589		34	193.677			
9R	193.736		34R	193.822			
10	193.626		35	193.639			
10R	193.648		35R	193.692			
11	193.655		36	193.704			
11R	193.749		36R	193.78			
12	193.687		37	193.592			
12R	193.84		37R	193.632			
13	193.651		38	193.656			
13R	193.735		38R	193.782			
14	193.624		39	193.636			
14R	193.72		39R	193.796			
15	193.405		40	193.581			
15R	193.516		40R	193.632			
16	193.52		41	193.614			
16R	193.562		41R	193.663			
17	193.557		42	193.684			
17R	193.56		42R	193.776			
18	193.621		43	193.635			
18R	193.712		43R	193.723			
19	193.589		44	193.577			
19R	193.711		44R	193.69			
20	193.706		45	193.649			
20R	193.742		45R	193.708			
21	193.656		46	193.74			
21R	193.741		46R	193.841			
22	193.51		47	193.721			
22R	193.514		47R	193.767			
23	193.567		48	193.68			
23R	193.663		48R	193.737			
24	193.627		49	193.59			
24R	193.743		49R	193.709			
25	193.535		50	193.487			
25R	193.55		50R	193.581			

		File Name:	10-057-NC-AU23.xlsx																							
STN	BS	FS	ELEV		STN	BS	FS	SS	ELEV		STN	BS	FS	SS	ELEV		STN	BS	FS	SS	ELEV		STN	BS	FS	SS	ELEV
CP1064	1.648		197.3		BM142	0.039			195.159		N26			1.495	193.703		N51			1.582	192.034		N76			1.761	191.855
STN1	0.708	2.196	196.752		N1			1.502	193.696		R26			1.425	193.773		R51			1.592	192.024		R76			1.718	191.898
STN2	1.172	2.469	194.991		R1			1.484	193.714		N27			1.647	193.551		N52			1.499	192.117		N77			1.699	191.917
STN3	1.932	1.529	194.634		N2			1.479	193.719		R27			1.491	193.707		R52			1.433	192.183		R77			1.665	191.951
STN4	1.595	1.981	194.585		R2			1.398	193.8		N28			1.537	193.661		N53			1.358	192.258		N78			1.62	191.996
STN5	1.595	1.494	194.686		N3			1.541	193.657		R28			1.462	193.736		R53			1.289	192.327		R78			1.623	191.993
STN6	1.801	1.169	195.112		R3			1.388	193.81		N29			1.569	193.629		N54			1.468	192.148		N79			1.71	191.906
STN7	1.457	1.899	195.014		N4			1.497	193.701		R29			1.52	193.678		R54			1.435	192.181		R79			1.681	191.935
STN8	1.423	1.536	194.935		R4			1.419	193.779		N30			1.666	193.532		N55			1.424	192.192		N80			1.717	191.899
BM142	1.221	1.199	195.159		N5			1.604	193.594		R30			1.544	193.654		R55			1.428	192.188		R80			1.691	191.925
STN9	1.45	1.371	195.009		R5			1.513	193.685		N31			1.664	193.534		N56			1.495	192.121		N81			1.714	191.902
STN10	1.747	1.371	195.088		N6			1.589	193.609		R31			1.65	193.548		R56			1.432	192.184		R81			1.686	191.93
STN11	1.118	1.742	195.093		R6			1.547	193.651		N32			1.633	193.565		N57			1.439	192.177		N82			1.7	191.916
STN12	1.453	1.46	194.751		N7			1.682	193.516		R32			1.541	193.657		R57			1.382	192.234		R82			1.7	191.916
STN13	1.954	1.626	194.578		R7			1.626	193.572		N33			1.6	193.598		N58			1.452	192.164		N83			1.637	191.979
STN14	1.568	1.894	194.638		N8			1.528	193.67		R33			1.47	193.728		R58			1.389	192.227		R83			1.579	192.037
STN15	2.43	1.21	194.996		R8			1.455	193.743		N34			1.523	193.675		N59			1.523	192.093		N84			1.722	191.894
STN16	2.157	0.636	196.79		N9			1.61	193.588		R34			1.379	193.819		R59			1.521	192.095		R84			1.709	191.907
CP1064		1.639	197.308		R9			1.464	193.734		N35			1.561	193.637		N60			1.561	192.055		N85			1.787	191.829
					N10			1.578	193.62		R35			1.509	193.689		R60			1.53	192.086		R85			1.734	191.882
	28.429	28.421	0.008		R10			1.552	193.646		N36			1.495	193.703		N61			1.501	192.115		N86			1.74	191.876
					N11			1.546	193.652		R36			1.42	193.778		R61			1.482	192.134		R86			1.582	192.034
					R11			1.451	193.747		N37			1.607	193.591		N62			1.521	192.095		N87			1.696	191.92
					N12			1.513	193.685		R37			1.566	193.632		R62			1.51	192.106		R87			1.609	192.007
					R12			1.361	193.837		N38			1.539	193.659		N63			1.442	192.174		N88			1.671	191.945
					N13			1.549	193.649		R38			1.417	193.781		R63			1.416	192.2		R88			1.629	191.987
					R13			1.466	193.732		N39			1.563	193.635		N64			1.451	192.165		N89			1.697	191.919
					N14			1.583	193.615		R39			1.405	193.793		R64			1.437	192.179		R89			1.693	191.923
					R14			1.48	193.718		N40			1.619	193.579		N65			1.552	192.064		N90			1.751	191.865
					N15			1.795	193.403		R40			1.569	193.629		R65			1.547	192.069		R90			1.709	191.907
					R15			1.683	193.515		N41			1.584	193.614		N66			1.642	191.974		N91			1.7	191.916
					N16			1.681	193.517		R41			1.535	193.663		R66			1.59	192.026		R91			1.649	191.967
					R16			1.639	193.559		N42			1.518	193.68		N67			1.608	192.008		N92			1.574	192.042
					N17			1.656	193.542		R42			1.424	193.774		R67			1.611	192.005		R92			1.519	192.097
					R17			1.642	193.556		N43			1.565	193.633		N68			1.518	192.098		N93			1.536	192.08
					N18			1.58	193.618		R43			1.488	193.71		R68			1.481	192.135		R93			1.501	192.115
					R18			1.488	193.71		N44			1.623	193.575		N69			1.561	192.055		N94			1.626	191.99
					N19			1.611	193.587		R44			1.511	193.687		R69			1.51	192.106		R94			1.542	192.074
					R19			1.49	193.708		N45			1.552	193.646		N70			1.59	192.026		N95			1.7	191.916
					N20			1.496	193.702		R45			1.492	193.706		R70			1.552	192.064		R95			1.666	191.95
					R20			1.459	193.739		N46			1.46	193.738		N71			1.62	191.996		N96			1.704	191.912
					N21			1.546	193.652		R46			1.36	193.838		R71			1.575	192.041		R96			1.648	191.968
					R21			1.459	193.739		N47			1.48	193.718		N72			1.656	191.96		N97			1.581	192.035
					N22			1.691	193.507		R47			1.433	193.765		R72			1.616	192		R97			1.561	192.055
					R22			1.687	193.511		N48			1.521	193.677		N73			1.639	191.977		N98			1.646	191.97
					N23			1.633	193.565		R48			1.464	193.734		R73			1.638	191.978		R98			missing	
					R23			1.536	193.662		N49			1.61	193.588		N74			1.681	191.935		N99			1.612	192.004
					N24			1.572	193.626		R49			1.49	193.708		R74			1.662	191.954		R99			missing	
					R24			1.456	193.742		N50			1.711	193.487		N75			missing			N100			missing	
					N25			1.665	193.533		R50			1.62	193.578		R75			1.743	191.873		R100			1.578	192.038
					R25			1.65	193.548												193.616						
																	P133			0.843	192.773		P144			1.033	192.583
					P113			1.034	194.164		P213			0.78	194.418		P132			0.707	192.909		P143			0.768	192.848
					P114			0.885	194.313		P214			0.56	194.638		P131			0.843	192.773		P142			0.948	192.668
					P111			0.812	194.386		P211			0.573	194.625		P134			0.771	192.845		P141			0.958	192.658
					P112			0.872	194.326		P212			0.744	194.454						193.616		R50	1.716	0.039		193.577
									195.198																0.134		195.159
											R50	0.038	1.62		193.578											

	File Name:	10-057-NC Sept 7 2010 Elevations.xlsx								
Station	September 7, 2010									
1	193.698		26	193.705		51	192.036		76	191.854
1ROCK	193.716		26ROCK	193.775		51ROCK	192.026		76ROCK	191.897
2	193.723		27	193.553		52	192.121		77	191.919
2ROCK	193.804		27ROCK	193.708		52ROCK	192.186		77ROCK	191.949
3	193.660		28	193.663		53	192.260		78	191.995
3ROCK	193.813		28ROCK	193.738		53ROCK	192.329		78ROCK	191.992
4	193.708		29	193.630		54	192.151		79	191.906
4ROCK	193.780		29ROCK	193.680		54ROCK	192.184		79ROCK	191.934
5	193.596		30	193.534		55	192.192		80	191.899
5ROCK	193.685		30ROCK	193.655		55ROCK	192.183		80ROCK	191.923
6	193.614		31	193.535		56	192.123		81	191.902
6ROCK	193.652		31ROCK	193.550		56ROCK	192.186		81ROCK	191.930
7	193.517		32	193.567		57	192.179		82	191.916
7ROCK	193.574		32ROCK	193.660		57ROCK	192.236		82ROCK	191.917
8	193.671		33	193.601		58	192.166		83	191.978
8ROCK	193.745		33ROCK	193.729		58ROCK	192.230		83ROCK	192.038
9	193.589		34	193.676		59	192.096		84	191.891
9ROCK	193.737		34ROCK	193.822		59ROCK	192.096		84ROCK	191.905
10	193.625		35	193.638		60	192.102		85	191.828
10ROCK	193.648		35ROCK	193.691		60ROCK	192.088		85ROCK	191.879
11	193.654		36	193.704		61	192.116		86	191.875
11ROCK	193.749		36ROCK	193.780		61ROCK	192.135		86ROCK	192.041
12	193.687		37	193.591		62	192.096		87	191.918
12ROCK	193.839		37ROCK	193.634		62ROCK	192.108		87ROCK	192.006
13	193.650		38	193.658		63	192.176		88	191.943
13ROCK	193.734		38ROCK	193.782		63ROCK	192.212		88ROCK	191.985
14	193.617		39	193.634		64	192.168		89	191.918
14ROCK	193.719		39ROCK	193.795		64ROCK	192.183		89ROCK	191.921
15	193.407		40	193.579		65	192.053		90	191.863
15ROCK	193.515		40ROCK	193.630		65ROCK	192.071		90ROCK	191.907
16	193.519		41	193.615		66	191.975		91	191.916
16ROCK	193.562		41ROCK	193.664		66ROCK	192.029		91ROCK	191.966
17	193.544		42	193.683		67	192.010		92	192.040
17ROCK	193.558		42ROCK	193.775		67ROCK	192.006		92ROCK	192.095
18	193.620		43	193.634		68	192.099		93	192.074
18ROCK	193.712		43ROCK	193.722		68ROCK	192.138		93ROCK	192.110
19	193.589		44	193.576		69	192.055		94	191.934
19ROCK	193.710		44ROCK	193.679		69ROCK	192.108		94ROCK	192.068
20	193.705		45	193.647		70	192.026		95	191.912
20ROCK	193.741		45ROCK	193.706		70ROCK	192.065		95ROCK	191.948
21	193.654		46	193.739		71	191.998		96	191.908
21ROCK	193.760		46ROCK	193.839		71ROCK	192.043		96ROCK	191.963
22	193.510		47	193.719		72	191.960		97	192.031
22ROCK	193.514		47ROCK	193.766		72ROCK	192.001		97ROCK	192.046
23	193.566		48	193.677		73	191.979		98	191.952
23ROCK	193.663		48ROCK	193.735		73ROCK	191.980		98ROCK	
24	193.627		49	193.588		74	191.935		99	192.003
24ROCK	193.745		49ROCK	193.708		74ROCK	191.956		99ROCK	
25	193.535		50	193.487		75			100	
25ROCK	193.550		50ROCK	193.580		75ROCK	191.874		100ROCK	
111	194.389		211	194.628		P131	192.775		P141	192.658
112	194.326		212	194.454		P132	192.911		P142	192.668
113	194.165		213	194.418		P133	192.775		P143	192.846
114	194.315		214	194.639		P134	192.845		P144	192.580

	File Name: 10-057-NC Oct 7 2010 Elevations.xlsx									
Station	07-Oct-10									
1	193.694		26	193.702		51	192.035		76	191.852
1ROCK	193.714		26ROCK	193.773		51ROCK	192.025		76ROCK	191.895
2	193.719		27	193.550		52	192.120		77	191.917
2ROCK	193.801		27ROCK	193.706		52ROCK	192.185		77ROCK	191.948
3	193.656		28	193.661		53	192.260		78	191.994
3ROCK	193.809		28ROCK	193.736		53ROCK	192.329		78ROCK	191.992
4	193.705		29	193.627		54	192.150		79	191.906
4ROCK	193.778		29ROCK	193.678		54ROCK	192.184		79ROCK	191.933
5	193.592		30	193.530		55	192.191		80	191.898
5ROCK	193.683		30ROCK	193.653		55ROCK	192.188		80ROCK	191.923
6	193.613		31	193.533		56	192.122		81	191.900
6ROCK	193.649		31ROCK	193.548		56ROCK	192.186		81ROCK	191.900
7	193.514		32	193.564		57	192.178		82	191.914
7ROCK	193.571		32ROCK	193.658		57ROCK	192.246		82ROCK	191.916
8	193.668		33	193.599		58	192.166		83	191.975
8ROCK	193.742		33ROCK	193.728		58ROCK	192.229		83ROCK	192.035
9	193.586		34	193.674		59	192.094		84	191.889
9ROCK	193.734		34ROCK	193.820		59ROCK	192.095		84ROCK	191.903
10	193.622		35	193.636		60	192.101		85	191.826
10ROCK	193.645		35ROCK	193.690		60ROCK	192.088		85ROCK	191.877
11	193.652		36	193.703		61	192.115		86	191.872
11ROCK	193.746		36ROCK	193.778		61ROCK	192.134		86ROCK	192.040
12	193.684		37	193.590		62	192.096		87	191.917
12ROCK	193.836		37ROCK	193.631		62ROCK	192.107		87ROCK	192.003
13	193.648		38	193.657		63	192.176		88	191.942
13ROCK	193.732		38ROCK	193.779		63ROCK	192.202		88ROCK	191.984
14	193.614		39	193.633		64	192.167		89	191.918
14ROCK	193.718		39ROCK	193.792		64ROCK	192.181		89ROCK	191.921
15	193.401		40	193.578		65	192.064		90	191.863
15ROCK	193.513		40ROCK	193.628		65ROCK	192.073		90ROCK	191.907
16	193.517		41	193.613		66	191.974		91	191.914
16ROCK	193.559		41ROCK	193.662		66ROCK	192.028		91ROCK	191.966
17	193.542		42	193.681		67	192.009		92	192.040
17ROCK	193.554		42ROCK	193.774		67ROCK	192.005		92ROCK	192.094
18	193.617		43	193.633		68	192.099		93	192.074
18ROCK	193.709		43ROCK	193.721		68ROCK	192.136		93ROCK	192.110
19	193.585		44	193.574		69	192.055		94	191.983
19ROCK	193.707		44ROCK	193.687		69ROCK	192.107		94ROCK	192.067
20	193.703		45	193.645		70	192.027		95	191.910
20ROCK	193.738		45ROCK	193.704		70ROCK	192.063		95ROCK	191.945
21	193.651		46	193.738		71	191.995		96	191.905
21ROCK	193.738		46ROCK	193.839		71ROCK	192.041		96ROCK	191.961
22	193.506		47	193.718		72	191.959		97	192.030
22ROCK	193.510		47ROCK	193.763		72ROCK	192.000		97ROCK	192.044
23	193.562		48	193.676		73	191.977		98	191.952
23ROCK	193.661		48ROCK	193.734		73ROCK	191.978		98ROCK	
24	193.624		49	193.587		74	191.934		99	192.002
24ROCK	193.742		49ROCK	193.707		74ROCK	191.954		99ROCK	
25	193.532		50	193.485		75			100	
25ROCK	193.547		50ROCK	193.579		75ROCK	191.874		100ROCK	
111	194.385		211	194.625		P131	192.774		P141	192.657
112	194.324		212	194.453		P132	192.911		P142	192.668
113	194.159		213	194.418		P133	192.772		P143	192.837
114	194.313		214	194.638		P134	192.843		P144	192.580

	File Name:	10-057-NC Oct 18 2010 NW Pond Elevations.xlsx								
Station	October 18, 2010									
1	193.699		26	193.704		51	192.039		76	191.856
1ROCK	193.716		26ROCK	193.776		51ROCK	192.03		76ROCK	191.903
2	193.722		27	193.554		52	192.124		77	191.921
2ROCK	193.803		27ROCK	193.708		52ROCK	192.19		77ROCK	191.958
3	193.657		28	193.663		53	192.263		78	192.002
3ROCK	193.814		28ROCK	193.739		53ROCK	192.342		78ROCK	192.005
4	193.706		29	193.63		54	192.152		79	191.912
4ROCK	193.781		29ROCK	193.682		54ROCK	192.192		79ROCK	191.942
5	193.595		30	193.534		55	192.198		80	191.903
5ROCK	193.685		30ROCK	193.656		55ROCK	192.195		80ROCK	191.931
6	193.615		31	193.536		56	192.127		81	191.905
6ROCK	193.653		31ROCK	193.553		56ROCK	192.193		81ROCK	191.939
7	193.516		32	193.566		57	192.182		82	191.922
7ROCK	193.574		32ROCK	193.661		57ROCK	192.248		82ROCK	191.924
8	193.671		33	193.602		58	192.17		83	191.984
8ROCK	193.745		33ROCK	193.732		58ROCK	192.24		83ROCK	192.05
9	193.589		34	193.676		59	192.099		84	191.894
9ROCK	193.737		34ROCK	193.824		59ROCK	192.1		84ROCK	191.917
10	193.624		35	193.637		60	192.106		85	191.831
10ROCK	193.649		35ROCK	193.695		60ROCK	192.092		85ROCK	191.889
11	193.655		36	193.705		61	192.12		86	191.878
11ROCK	193.75		36ROCK	193.782		61ROCK	192.139		86ROCK	192.048
12	193.687		37	193.594		62	192.1		87	191.921
12ROCK	193.838		37ROCK	193.635		62ROCK	192.112		87ROCK	192.016
13	193.649		38	193.657		63	192.18		88	191.947
13ROCK	193.734		38ROCK	193.784		63ROCK	192.21		88ROCK	191.991
14	193.616		39	193.637		64	192.171		89	191.922
14ROCK	193.721		39ROCK	193.796		64ROCK	192.192		89ROCK	191.93
15	193.404		40	193.581		65	192.068		90	191.869
15ROCK	193.515		40ROCK	193.633		65ROCK	192.082		90ROCK	191.913
16	193.518		41	193.617		66	191.979		91	191.92
16ROCK	193.564		41ROCK	193.666		66ROCK	192.037		91ROCK	191.972
17	193.546		42	193.684		67	192.013		92	192.044
17ROCK	193.561		42ROCK	193.777		67ROCK	192.01		92ROCK	192.102
18	193.622		43	193.636		68	192.1		93	192.08
18ROCK	193.714		43ROCK	193.724		68ROCK	192.141		93ROCK	192.12
19	193.591		44	193.576		69	192.053		94	191.988
19ROCK	193.713		44ROCK	193.694		69ROCK	192.111		94ROCK	192.073
20	193.705		45	193.649		70	192.031		95	191.917
20ROCK	193.743		45ROCK	193.709		70ROCK	192.07		95ROCK	191.953
21	193.657		46	193.743		71	192		96	191.911
21ROCK	193.743		46ROCK	193.844		71ROCK	192.054		96ROCK	191.971
22	193.507		47	193.722		72	191.96		97	192.034
22ROCK	193.515		47ROCK	193.77		72ROCK	192.013		97ROCK	192.053
23	193.566		48	193.678		73	191.982		98	191.957
23ROCK	193.664		48ROCK	193.737		73ROCK	191.989		98ROCK	
24	193.627		49	193.589		74	191.94		99	192.007
24ROCK	193.745		49ROCK	193.712		74ROCK	191.961		99ROCK	
25	193.535		50	193.487		75			100	
25ROCK	193.553		50ROCK	193.584		75ROCK	191.887		100ROCK	
111	194.388		211	194.626		P131	192.779		P141	192.661
112	194.326		212	194.456		P132	192.915		P142	192.672
113	194.165		213	194.419		P133	192.778		P143	192.852
114	194.315		214	194.642		P134	192.848		P144	192.585

Appendix B
Visual Inspection Report

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Memo

To:	Maritz Rykaart	**Date:**	December 8, 2010
cc:	Dan Hewitt	**From:**	Iozsef Miskolczi
Subject:	Report on Fall Geotechnical Inspection of Tailings Covers Plots at Giant Mine	**Project #:**	1CS019.016

The Fall Geotechnical Inspection of the Tailings Cover Trials on the North-West Pond at the Giant Mine was performed by Iozsef Miskolczi on October 18, 2010 in conjunction with the instrumentation decommissioning program.

This memo summarises the notes made during the inspection. Photos are attached as Attachment A.
At the time of the inspection the ground was covered with snow. Wind action cleared the snow from the exposed flat areas and piled it up in depressions and on wind protected slopes.

1 Beach Plot A

- Surface covered by snow in small patches mainly in localised depressions. Very sparse vegetation retains minimal amount of snow cover.
- Surface appears as generally flat, with localized small depressions randomly distributed on the entire surface of the cover.
- Some sort of a shallow trench is apparent on the East side of the cover, but the location and extent does not seem to have changed since 2009.
- Localized depressions around the primary beacons (same as noted during previous inspections)
- Evidence of very sparse vegetation (grass bunches and legumes), less abundant than the vegetation observed in 2009.
- Minor erosion gullies close to the edge of the cover.
- Surface cracks evident in places devoid of snow. Depth and extent of cracks could not be accurately assessed due to snow on the ground.
- Evidence of erosion of fines in the form of pebbles free-standing on the surface with no fines surrounding them.

2 Beach Plot B

- Surface appears as generally flat, with localized small depressions randomly distributed on the entire surface of the cover.
- Minor erosion gullies close to the edges of the cover.
- No anthropogenic disturbance was noted other than the mini-excavator tracks documented in previous inspection reports.
- Evidence of medium dense vegetation cover (grass bunches and legumes). The vegetation on this cover plot has the highest density of all plots. The vegetation extends onto the side slopes as well.
- Localized depressions around the Primary Beacons, same as noted in the 2009 inspections.
- Surface cracks evident in places devoid of vegetation. Depth and extent of cracks could not be accurately assessed due to snow on the ground.

3 Slimes Plot A

- Surface appears generally flat, with small localized depressions randomly distributed on the entire surface of the cover.
- Surrounded by water on 3 sides at time of inspection.
- Evidence of medium dense vegetation, mainly bunches of grass.
- Snow cover retained by the vegetation varies in thickness between 10 and 20 cm.
- High water marks around the edges on the crest, with growth medium being washed away on a strip of about 4-5 m width around the east and south edges.
- Evidence of erosion of fines in the form of pebbles free-standing on the surface with no fines surrounding them. Observed only on the surfaces barren of snow; could not determine if the erosion is generalised as vegetation remnants retained the snow cover.
- The housing tube of the EnviroScan probe has a stickup of about 91 cm, which is 60 cm more than when it was installed.
- The 4x4 lumber post of the Lakewood datalogger was lying on the ground.
- The 12 mm PVC pipe housing the thermistor string and the datalogger's grounding rod do not show any evidence of vertical movement or lateral displacement.
- The thermistor string on this plot is missing, being used in 2009 as a replacement for the damaged thermistor on Beach plot B.

4 Slimes Plot B

- The perimeter of the plot is barren, while the central area (where remnants of summer vegetation are evident) is covered with 5-15 cm of snow.
- Surface appears generally flat, with small localized depressions randomly distributed on the entire surface of the cover.
- Surrounded by water on 3 sides at time of inspection.
- Evidence of sparse vegetation, mainly bunches of grass.
- High water marks around the edges on the crest, with growth medium being washed away on a strip of about 4-5 m width around the perimeter.
- Evidence of erosion of fines in the form of pebbles free-standing on the surface with no fines surrounding them. Observed only on the surfaces barren of snow; could not determine if the erosion is generalised as vegetation remnants retained the snow cover.
- The housing tube of the EnviroScan probe has a stickup of about 83 cm, which is 50 cm more than when it was installed.
- The 4x4 lumber post of the Lakewood datalogger was lying on the ground.
- The 12 mm PVC pipes housing the thermistor string and the Lakewood datalogger's grounding rod do not show any evidence of vertical movement or lateral displacement.

Attachment A
Photos

Photo 1: Beach A Plot – panoramic stitched photograph from South-East corner. The optical distortion of the photo stitching technique causes the East and South edges to be almost parallel.

Photo 2: Beach B Plot – panoramic stitched photograph from North-East corner. The optical distortion of the photo stitching technique causes the East and North edges to be almost parallel.

Photo 3: Slimes A Plot – panoramic stitched photograph from South-East corner. The optical distortion of the photo stitching technique causes the East and South edges to be almost parallel.

Photo 4: Slimes B Plot – panoramic stitched photograph from South-East corner. The optical distortion of the photo stitching technique causes the East and South edges to be almost parallel

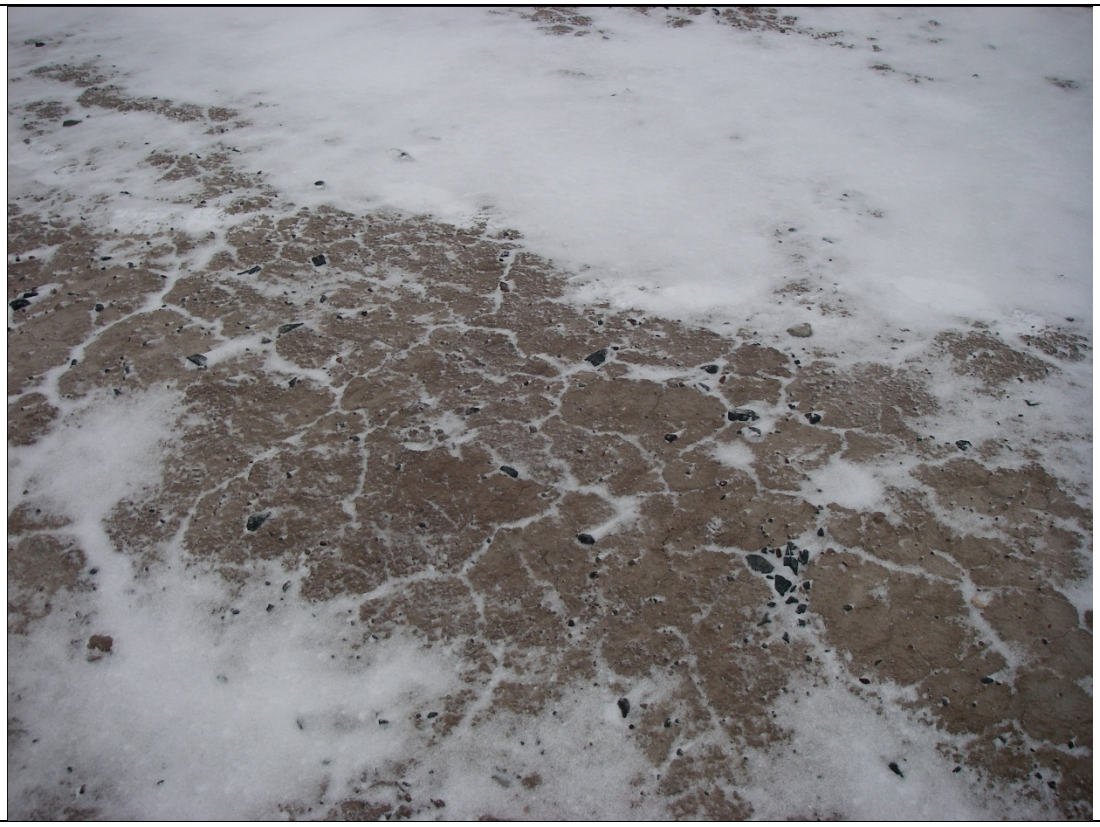

Photo 5: Beach A Plot – evidence of shrinkage cracking and wind erosion.

Photo 6: Beach B Plot – looking North from South-East corner. Note the density and type of the vegetation and the increased amount of snow retained by the vegetation.

Photo 7: Beach A Plot – looking south west. Note the improved protection of the thermistor cable. On the left side of the photo the shallow trench observed in 2009 is noticeable.

Photo 8: Slimes A Plot – stickup of the EnviroScan probe housing tube is 91 cm.

Photo 9: Slimes B Plot – stickup of the EnviroScan probe housing tube is 83 cm.