APPENDIX N

SURFACE HYDROLOGY

NOTE TO READER
APPENDIX N

In April 2015, Treasury Metals submitted an Environmental Impact Statement (EIS) for the proposed Goliath Gold Project (the Project) to the Canadian Environmental Assessment Agency (the Agency) for consideration under the Canadian Environmental Assessment Act (CEAA), 2012. The Agency reviewed the submission and informed Treasury Metals that the requirements of the EIS Guidelines for the Project were met and that the Agency would begin its technical review of the submission. In June 2015, the Agency issued a series of information requests to Treasury Metals regarding the EIS and supporting appendices (referred to herein as the Round 1 information requests). The Round 1 information requests included questions from the Agency, other federal and provincial reviewers, and members of Indigenous communities, as well as interested stakeholders. As part of the Round 1 information request process, the Agency requested that Treasury Metals consolidate the responses to the information requests into a revised EIS for the Project.

Appendix N to the revised EIS (Surface Hydrology) presents results of the field monitoring work to measure existing flows in the vicinity of the Project. The information presented in this appendix was used for describing the existing hydrologic conditions presented in Section 5.7 of the revised EIS). No changes have been made to this appendix from the original EIS issued in April 2015.

As part of the process to revise the EIS, Treasury Metals has undertaken a review of the status for the various appendices. The status of each appendix to the revised EIS has been classified as one of the following:

- **Unchanged**: The appendix remains unchanged from the original EIS, and has been re-issued as part revised EIS.
- **Minor Changes:** The appendix remains relatively unchanged from the original EIS, and has been re-issued with relevant clarification.
- **Major Revisions**: The appendix has been substantially changed from the original EIS. A re-written appendix has been issued as part of the revised EIS.
- **Superseded:** The appendix is no longer required to support the EIS. The information in the original appendix has been replaced by information provided in a new appendix prepared to support the revised EIS.
- **New**: This is a new appendix prepared to support the revised EIS.

The following table provides a listing of the appendices to the revised EIS, along with a listing of the status of each appendix and their description.

List of Appendices to the Revised EIS		
Appendix	Status	Description
Appendix A	Major Revisions	Table of Concordance
Appendix B	Unchanged	Optimization Study
Appendix C	Unchanged	Mining Study
Appendix D	Major Revisions	Tailings Storage Facility
Appendix E	Minor Changes	Traffic Study
Appendix F	Major Revisions	Water Management Plan
Appendix G	Superseded	Environmental Baseline
Appendix H	Minor Changes	Acoustic Environment Study
Appendix I	Unchanged	Light Environment Study
Appendix J	Minor Changes	Air Quality Study
Appendix K	Minor Changes	Geochemistry
Appendix L	Superseded	Geochemical Modelling
Appendix M	Minor Changes	Hydrogeology
Appendix N	Unchanged	Surface Hydrology
Appendix O	Superseded	Hydrologic Modeling
Appendix P	Unchanged	Aquatics DST
Appendix Q	Major Revisions	Fisheries and Habitat
Appendix R	Major Revisions	Terrestrial
Appendix S	Major Revisions	Wetlands
Appendix T	Unchanged	Socio-Economic
Appendix U	Minor Changes	Heritage Resources
Appendix V	Major Revisions	Public Engagement
Appendix W	Unchanged	Screening Level Risk Assessment
Appendix X	Major Revisions	Alternatives Assessment Matrix
Appendix Y	Unchanged	EIS Guidelines
Appendix Z	Unchanged	TML Corporate Policies
Appendix AA	Major Revisions	List of Mineral Claims
Appendix BB	Unchanged	Preliminary Economic Assessment
Appendix CC	Unchanged	Mining, Dynamic And Dependable For Ontario's Future
Appendix DD	Major Revisions	Indigenous Engagement Report
Appendix EE	Unchanged	Country Foods Assessment
Appendix FF	Unchanged	Photo Record Of The Goliath Gold Project
Appendix GG	Minor Changes	TSF Failure Modelling
Appendix HH	Unchanged	Failure Modes And Effects Analysis
Appendix II	Major Revisions	Draft Fisheries Compensation Strategy and Plans
Appendix JJ	New	Water Report
Appendix KK	New	Conceptual Closure Plan
Appendix LL	New	Impact Footprints and Effects

TREASURY METALS INC.
GOLIATH GOLD PROJECT
HYDROLOGY 2013 BASELINE STUDY

Prepared for:
Treasury Metals Inc.
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Toronto, ON
Canada, M5X 1B1

April 2014

DST File No.: OE-KN-018101

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EXECUTIVE SUMMARY

Treasury Metals Inc. (TML) is a Canadian gold exploration and development company focused on its 100% owned high-grade Goliath Gold Project (the Project), situated in the Kenora/Dryden Mining District of northwestern Ontario. The Project is located adjacent to the village of Wabigoon, Ontario, approximately 20 km east of the city center of Dryden or 330 km west of the city of Thunder Bay. The Project is expected to require the completion of federal and provincial environmental assessments and permits prior to development. To support ongoing drilling activities and project permitting, TML retained DST Consulting Engineers Inc. (DST) to gather baseline data and to submit environmental reports summarizing data collection efforts that occurred in 2012 and 2013. The hydrology baseline data collection involved the installation and monitoring of seven hydrometric stations throughout the project area.

Each station was equipped with a levellogger attached to a 1 m anchored staff gauge. The location of which was selected to ensure little to no channel scouring over the open water monitoring season and to capture the maximum amount of runoff from each of the sub watersheds without having backwater effects from static lake water levels. Manual flow monitoring measurements were gathered by TML staff throughout the 2012 and 2013 open water monitoring period in order to relate the water levels to stream discharge and ultimately generate a stage-discharge curve for each monitoring location.

Overall, moderately correlated stage-discharge curves were generated for all seven hydrometric stations. To check the data, precipitation data from the Dryden Airport and daily discharges from Environment Canada's hydrometric station on the Wabigoon River near Quibell were used to compare the general trends observed within the monitored streams within the project area. The stage-discharge formulae developed to convert automated pressure transducer measurements into discharge estimates can be confidently applied to all stations.

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Appendix B – Summary of Average Daily Flows

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1. INTRODUCTION

Treasury Metals Inc. (TML) is a Canadian gold exploration and development company focused on its 100% owned high-grade Goliath Gold Project (the Project), situated in the Kenora/Dryden Mining District of northwestern Ontario. The Project is located adjacent to the village of Wabigoon, Ontario, approximately 20 km east of the city center of Dryden or 330 km west of the city of Thunder Bay (refer to Figure 1.1).

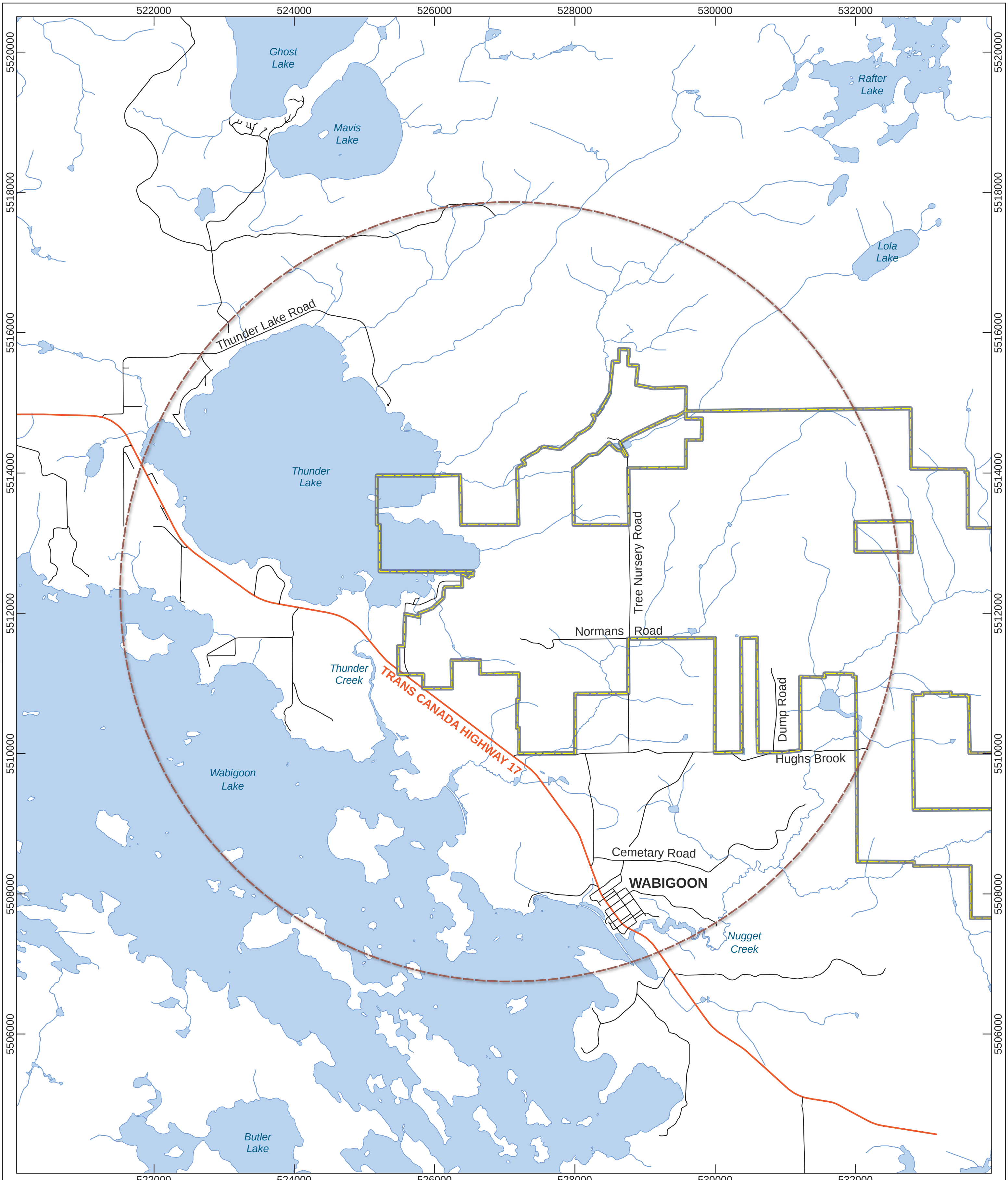
The Project Area consists largely of two historic properties, the "Thunder Lake Property", previously owned by Teck-Corona and the "Laramide Property", located partially within both the Hartman and Zealand townships. The properties have a total area of approximately 4,881 hectares, comprised of 4,064 hectares of 137 unpatented land claims and 19 patented land claims for the remainder. TML holds the entire project subject to specific royalties on 13 of the patented land parcels. The site can be readily accessed year round from Highway 17 and multiple public secondary roads that extend north from the highway, including Anderson Road, Maggrah Road and Tree Nursery Road.

The Project is expected to require the completion of federal and provincial environmental assessments and permits prior to development. To support ongoing drilling activities and project permitting, TML retained DST Consulting Engineers Inc. (DST) to gather baseline data and to submit environmental reports summarizing data collection efforts that occurred in 2012 and 2013.

The Baseline Assessment Studies include the following components:

- Sediment Quality;
- Benthic Invertebrates Community;
- Fisheries;
- Wildlife;
- Birds;
- Wetlands and vegetation; and,
- Hydrology.

The following report presents the results of the 2012 and 2013 hydrology baseline study. The hydrological monitoring was originally initiated in November 2010 by measuring discrete stream flow within eight locations within the local study area (LSA). In March 2011, four automatic stream water level loggers were installed to record stream level readings. In 2012 the project was reassessed and an additional 3 automatic stream water level loggers were installed while one previously installed logger was relocated (refer to Figure 2.1). Each sub-watershed was selected after careful desktop and field review of the project area and anticipated future development.



GOLIATH GOLD PROJECT DRYDEN, ONTARIO, CANADA	SCALE: 70000 *TREASURY METALS INC.*
LOCATION OF GOLIATH GOLD PROJECT STUDY AREA	*DESIGN: AT 06 FEB. 2014* *GIS: AT 18 FEB. 2014* *CHECK: MP 14 MAR. 2014* *REVIEW: KB 14 MAR. 2014*
FIGURE: 1.1 REV.01	

LEGEND

- Local Study Area
- Property Boundary
- Highway
- Local Road
- Waterbody
- Watercourse

N

0 500 1,000 1,500
Meters

REFERENCE

Data by Treasury Metals Inc.
and DST Consulting
Projection: NAD83 UTM Zone 15N

DST consulting engineers

2. METHODOLOGY

The objective of the 2012-2013 hydrometric monitoring period was to assess and characterize the discharge of water from sub-watersheds encompassing the project and study areas. In the previous year (2011), all level loggers installed by Klohn Crippen Berger (KCB) were left in to overwinter. When the project needs were reassessed by DST in 2012, all hydrometric stations were removed, replaced, and/or relocated. The additional four hydrometric stations (HS4, HS5, HS6, and HS7) were installed into four newly monitored streams to better understand the sub-watersheds within the project area. All hydrometric stations which were installed or reinstalled in 2012/2013 were left in place to over winter into the next year in order to obtain the spring freshet data.

The largest studied sub-watershed within the study area was monitored using hydrometric stations TL1A, JCTA, and TL3. This sub-watershed contributes to the discharge from the project area to Wabigoon Lake. The hydrometric stations which captured data for this sub-watershed were located at various sections along the Blackwater Creek (Figure 2.1). In order to catch the spring 2012 and 2013 freshet, these hydrometric stations were left installed and allowed to overwinter, with irregular site inspections conducted by TML Staff.

Station HS4 was installed within the second largest sub-watersheds within the project area. This station is located on Thunder Lake unnamed tributary 2 (KCB, 2012), which ultimately contributes to Thunder Lake. Installed in July 24, 2012, this hydrometric station was left installed over the winter in 2011/2012 and then again in 2012/2013 in order to capture the spring freshet.

The third largest sub-watershed within the study area is located north of hydrometric station HS4. Station HS7 was also installed within the north branch of an unnamed tributary to Thunder Lake to monitor this sub-watershed. It was installed in July 2012 and left to over winter in 2013 in order to capture the 2013 spring freshet.

The fourth largest sub-watershed within the study area is drained by Hoffstrom Bay Tributary and was monitored by hydrometric station HS5. This station was installed in August 2012 and left to overwinter in order to capture the 2013 spring freshet.

The smallest sub-watershed within the study area is includes the Thunder Lake unnamed tributary 3 (KCB, 2012). Hydrometric station HS6 was installed within this tributary in July 2012 and left to over winter in order to capture the 2013 freshet.

Currently (March 2014), all of the seven hydrometric stations remain installed to date.

The hydrometric station locations and watershed areas associated with each station are illustrated on Figure 2.1 and Figure 2.2. Each site location is summarized on Table 2.1.

Table 2.1: Treasury Hydrometric Station Locations

Hydrometric Station	UTM Coordinates	Elevation (m)
TL1A	15U 528757 m E, 5511520 m N	385
TL3	15U 527527 m E, 5509985 m N	375
HS4	15U 527273 m E, 5513943 m N	379
HS5	15U 527234 m E, 5512922 m N	376
HS6	15U 525997 m E, 5512219 m N	384
HS7	15U 527162 m E, 5514103 m N	378
JCTA	15U 528477 m E, 5510999 M N	378

Note: NAD 83, Zone 15

The location for each of the hydrometric stations was selected to ensure little to no channel scouring over the season and to capture the maximum amount of runoff from each watershed without having backwater effects from static lake water levels.

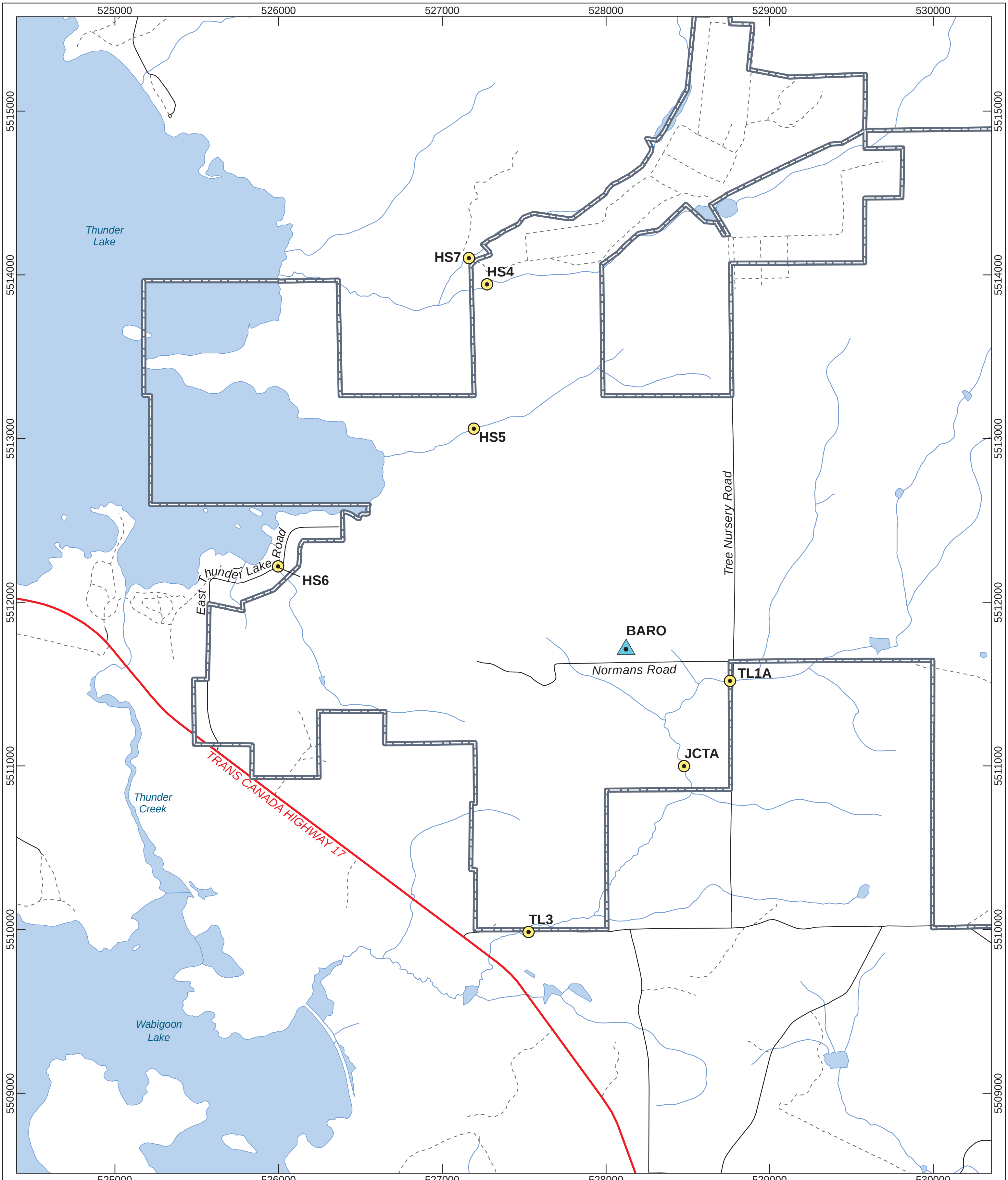
Each hydrometric station consisted of a Solinst Model 3001 Levellogger Junior Edge LT, M10/F30 with Direct Read Cable Assembly and a 1 m staff gauge, all attached to a secured wooden post. The post was anchored into place to prevent movement using steel rods driven into the substrate in a tripod fashion and anchored to the wooden post. The pressure transducers were installed at a height relative to the staff gauge so that water depths could be converted to flow estimates. The data loggers were set to record every 5 to 30 minutes (48 to 288 times/day).

Staff gauges were initially surveyed upon installation for elevations relative to a local arbitrary benchmark at each site, which was established by anchoring a bolt into bedrock (or a suitably sized tree where bedrock was not available) or using a marked point on a bedrock outcrop. This was done to measure (and correct for, if required) any vertical movement of the staff gauge over the season, to have an established reference point if the stations were moved, and for re-establishing the stations the following season. The continuation of the survey by TML personnel was not completed outside of the initial installation; therefore, it is difficult to assess for hydrometric station movement.

Manual flow monitoring measurements were gathered initially by a DST technologist and TML staff member. All subsequent monitoring was completed by TML staff on a monthly basis throughout the open water season of the monitoring period. Flow velocities were measured manually at each hydrometric station using a Marsh-McBirney Model 2000 Flo-Mate portable flow meter. At each hydrometric station, the stream cross-section was divided into segments of equal width and maximum velocities were measured in the middle of each segment at a 60% depth (Marsh-McBirney, 1990).

The manual discharge measurements and associated staff gauge readings were then used to generate a stage-discharge curve enabling the development of a rating equation. Where the staff gauge readings were not recorded in the field, the average daily water level from the data logger was used for that particular day of flow monitoring. Overall, the formulae were then used to convert measurements collected by the pressure transducer into actual discharge estimates.

To aid in the interpretation of the results, 2012 and 2013 precipitation data was obtained from the Dryden Airport meteorological station. A report completed by Rowan Williams Davies and Irwin Inc. (RWDI) indicated the weather data collected at the Dryden Airport could be used for the project area. (RWDI, 2012).



GOLIATH GOLD PROJECT
DRYDEN, ONTARIO, CANADA

SCALE: 30000

TREASURY METALS INC.

Hydrostation and Barometer Locations

DESIGN: AT 06 FEB. 2014
GIS: AT 26 FEB. 2014
CHECK: MP 14 MAR. 2014
REVIEW: KB 14 MAR 2014

FIGURE: 2.1 REV.01

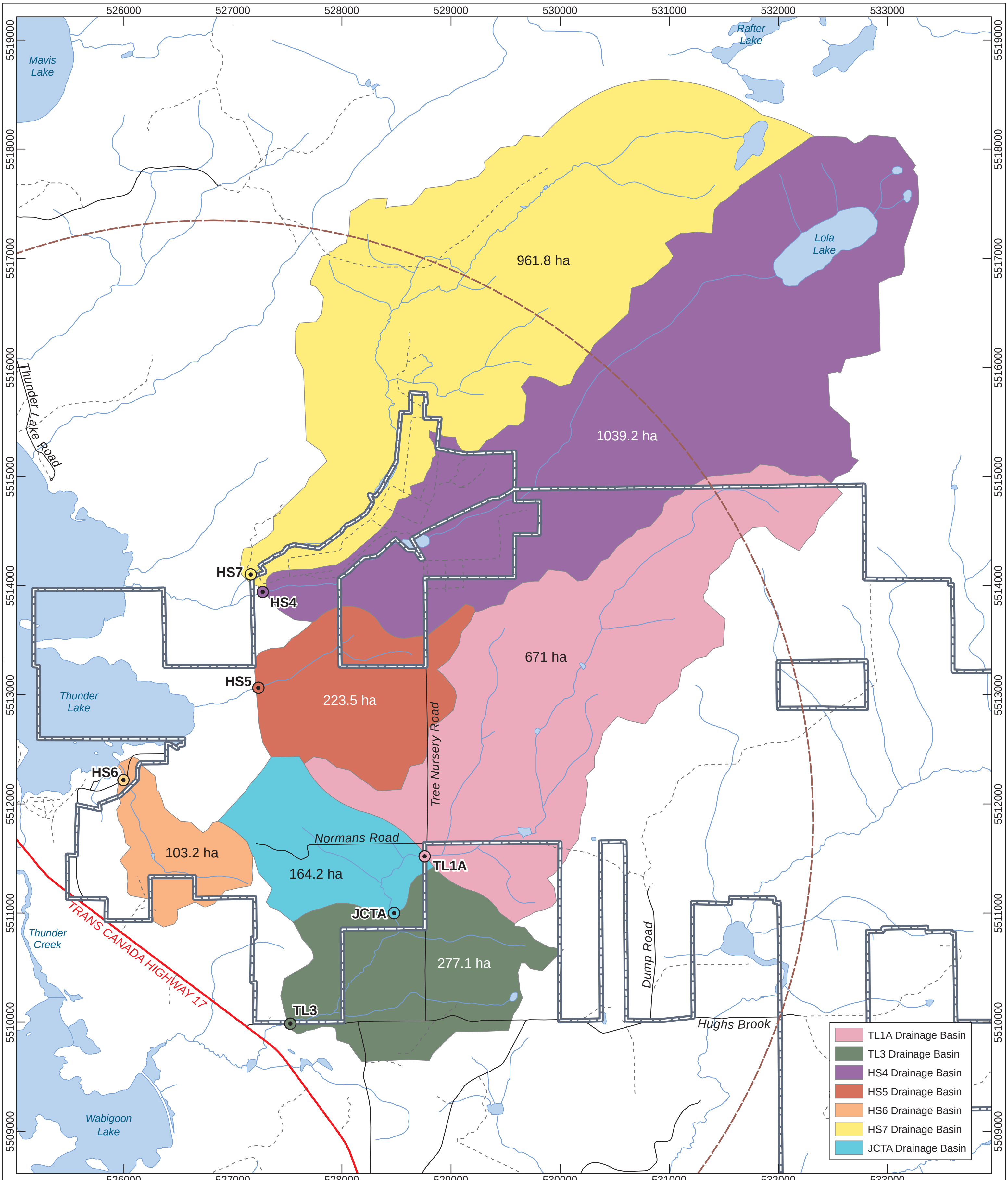
LEGEND

- Barometer Location
- Hydrostation Location
- Local Study Area
- Property Boundary
- Expressway / Highway
- Local
- Resource / Recreation
- Waterbody
- Watercourse

N

0 250 500 750
Meters

REFERENCE
Data by Treasury Metals Inc.
and DST Consuting Engineers
Projection: NAD83 UTM Zone 15N



GOLIATH GOLD PROJECT
DRYDEN, ONTARIO, CANADA

SCALE: 45000

TREASURY METALS INC.

Drainage Basin Boundaries

FIGURE: 2.2 REV.02

DESIGN: AT 06 FEB. 2014
GIS: AT 06 MAR. 2014
CHECK: MP 14 MAR. 2014
REVIEW: KB 14 MAR. 2014

LEGEND

- Hydrostation Location (colored by corresponding watershed)
- Local Study Area
- Property Boundary
- Arterial
- Expressway / Highway
- Local
- Resource / Recreation
- Waterbody
- Watercourse

N

0 500 1,000
Meters

REFERENCE
Data by Treasury Metals Inc.
and DST Consuting Engineers
Projection: NAD83 UTM Zone 15N

3. RESULTS AND DISCUSSION

3.1 Monitoring Period and Hydrometric Station Locations

Two of the hydrometric stations (TL1A and TL3) used in this study were initially installed in December 2011 within the Backwater Creek and adjusted as required in July 2012 in order to capture the 2012 spring freshet which occurred in the middle of March 2012.

Based on a review of the overall needs of the project, the hydrometric monitoring program was reanalysed and several flow monitoring locations were ceased or added, such as SW1, SW3, TL2, and SW2 which were ceased; and HS4, HS5, HS6, and HS7 which were added. The locations of the stations that were monitored over the 2012 to 2013 monitoring period are shown in Figure 2.1. The monitoring period for each station is given in Table 3.1.

Table 3.1: Summary of Hydrometric Monitoring Period

Hydrometric Station	Date Installed	Monitoring Period	Date Removed
TL1A	December 16, 2011	December 16, 2011 to November 6, 2012 and May 8, 2013 to November 7, 2013	Still Installed
TL3	December 16, 2011	December 16, 2011 to January 19, 2013, and May 8, 2013 to November 7, 2013	Still Installed
HS4	July 24, 2012	July 24, 2012 to December 10, 2012, and June 7, 2013 to November 7, 2013	Still Installed
HS5	August 22, 2012	August 22, 2012 to May 7, 2013, and August 22, 2013 to November 7, 2013	Still Installed
HS6	July 24, 2012	July 24, 2012 to December 10, 212, and May 7, 2013 to November 7, 2013	Still Installed
HS7	July 24, 2012	July 24, 2012 to December 10, 2012, and May 7, 2013 to November 7, 2013	Still Installed
JCTA	May 15, 2013	May 15, 2013 to November 7, 2013	Still Installed

The hydrometric stations TL1A and TL3 remained installed over the winter of 2011/2012 using the same hydrometric station set-up and monitoring methodology as outlined in the KCB Baseline Study report (2012). Manual flow monitoring between the start of 2012 to July 24, 2012 were not completed during this time. Following the hydrometric program reassessment, stations TL1A and TL3 were removed and reinstalled in July 2012 using DST's methodology as outlined in Section 2. Manual flow monitoring was completed twice for both stations during the 2012 monitoring period.

In general, the TL1A hydrometric station was reinstalled within the same unconfined channel which is broader than typically seen on Blackwater Creek, due to road works. The creek bed at TL1A is primarily composed of silts with organics present on each bank. The banks are sloped at this location. The area surrounding this hydrometric station is bordered by mixed forest. On May 8, 2013, the highest manual flow monitoring rate was obtained. The wetted channel cross section at that time was 7.4 meters wide with a maximum depth of 0.84 meters.

The TL3 hydrometric station was also reinstalled within the same downstream section of the Blackwater Creek as was used for the previous year's location. The characteristics of the TL3 hydrometric station include a narrow defined channel primarily composed of silts with organics present on each bank. Beaver action had also directly affected the location upstream and downstream of the Site with a number of damns controlling the flow of Blackwater Creek. The slopes are near vertical at this location. The surrounding area of this hydrometric station is characterized by open flood plain, bordered by mixed forest. On May 8, 2013 the highest flow manual flow monitoring was observed. The maximum wetted channel cross section was 3.6 meters wide with a maximum depth of 1.6 meters.

As with hydrometric stations TL1A and TL3, hydrometric station JCTA, located downstream of station TL1A and upstream of station TL3, was removed and reinstalled in May 2013 within the same location on the Blackwater Creek using DST's set-up and methodology outlined in Section 2. The characteristics of the JCTA hydrometric station include a narrow defined channel primarily composed of silts with organics present on each bank. The slopes are near vertical at this location. The surrounding area of this hydrometric station is characterized by open flood plain populated by grasses, bordered by mixed forest. The highest manual flow monitoring was obtained on May 8, 2013. The wetted channel cross section measured on May 8, 2013 was 1.5 meters wide with a maximum depth of 0.68 meters.

The hydrometric station at HS4 is located in the southeast branch of an unnamed tributary 2 (refer to KCB, 2012), approximately 1.2 km east of Thunder Lake. This location was new to the monitoring program and was installed on July 24, 2012. Manual flow measurements were collected twice throughout 2012 monitoring period and seven times during the 2013 monitoring period.

In general, the characteristics of the HS4 hydrometric station include a narrow defined channel primarily composed of silts with organics present on each bank. The slopes are near vertical at this location. The surrounding area of this hydrometric station is bordered by mixed forest. The highest manual flow monitoring was obtained on May 8, 2013 with a wetted channel cross section of 1.55 meters wide with a maximum depth of 1.0 meters.

The hydrometric station at HS5 is located within the Hoffstrom Bay Tributary, approximately 500 m east of Thunder Lake. This station was installed on August 22, 2012. This station was installed within a narrow defined channel primarily composed of silts with organics present on each bank. The slopes are near vertical at this location. The area surrounding this hydrometric station is characterized by cedar forest. The highest manual flow monitoring was obtained on May 8, 2013 with the maximum wetted channel cross section of 0.9 meters wide with a maximum depth of 0.5 meters.

Hydrometric station HS6, was installed on July 24, 2012 within the Thunder Lake unnamed tributary 3 (KCB, 2012), which is approximately 200 m southeast of Thunder Lake. The station was installed downstream of a culvert on East Thunder Lake Road, into a narrow defined channel primarily composed of silts with organics present on each bank. The slopes are near vertical at this location. The surrounding area of this hydrometric station is bordered by mixed forest. The highest manual flow monitoring was obtained on May 8, 2013 with the maximum wetted channel cross section of 1.35 meters wide with a maximum depth of 0.2 meters.

The last hydrometric station, HS7 was installed in a northeast banch of Thunder Lake unnamed tributary 2 (KCB, 2012). This station is directly north of station HS4 and approximately 1.3 km east of Thunder Lake. The hydrometric station HS7 was installed in July 2012 within a narrow defined channel primarily composed of silts with organics present on each bank. The slopes are near vertical at this location. The surrounding area is bordered by mixed forest. The highest manual flow was observed on May 8, 2013 with a channel cross section of 2.7 meters wide with a maximum depth of 1.2 meters.

3.2 Staff Gauge Survey

In order to assess for any vertical movement of the hydrometric stations, an elevation survey of the hydrometric stations needs to be completed at the time of installation and demobilization, as well as several times during the season. The stations are then compared to a relative benchmark established at each location at the time of original installation with an assigned elevation of 100.000 m.

While an initial elevation survey was completed at stations TL1A, TL3, HS4, HS5, HS6, and HS7 by DST and TML personnel, follow up surveys were not completed at subsequent monitoring events due to lack of survey equipment. Therefore, it cannot be determined if there was any vertical movement of the hydrometric stations over the monitoring periods. TML staff did note however, that the 2012 winter with ice build-up caused stations TL1A and HS7 to shift. No repairs were made to these stations following spring freshet. This shift in stations may have moved the logger sensor to move and thus read water levels incorrectly.

3.3 Manual Stream Discharge Measurements

Manual stream discharge measurements were obtained at the seven hydrometric stations throughout the summer and fall of 2012 as well as the spring, summer and fall of 2013. Table 3.3 summarizes the stream flow monitoring results from 2012 and 2013. The detailed data from the 2012 and 2013 monitoring events is presented in Table A-1 through A-7 in Appendix A.

The manual measurements show discharge rates that were relatively moderate for most of the monitoring period with higher flows during spring periods in 2012 and spring and fall periods in 2013. Similarities across stations over time, with respect to low and high discharge rates, were noted. The highest manual discharge measured in 2012 was 46.1 L/s on November 7, 2012, at the HS7 station and 998.74 L/s on November 13, 2013 at station HS7. The lowest discharge recorded in 2012 was 1.16 L/s on July 24, 2012 at station TL3 and 0.73 L/s on August 20, 2013 at station HS5.

Table 3.3: Stream Discharge Manual Flow Measurements, 2012 to 2013

	Date	Discharge (L/s)	Gauge Height (m)	Drainage Area (km^2)
TL1A	24-Jul-12	12.60		6.710
	6-Nov-12	35.32	0.38	
	8-May-13	507.60		
	6-Jun-13	92.30	0.420	
	24-Jun-13	22.06	0.3	
	17-Jul-13	19.39	0.22	
	20-Aug-13	2.60	0.32	
	3-Oct-13	22.22		
	13-Nov-13	37.29	0.36	
TL3	24-Jul-12	1.16		2.771
	6-Nov-12	29.62		
	8-May-13	68.62		
	6-Jun-13	62.03	1.200	
	25-Jun-13	-0.08	1.2	
	17-Jul-13	25.49	1.2	
	20-Aug-13	-4.52		
	3-Oct-13	21.44	1.15	
	7-Nov-13	3.02	1.5	
HS4	24-Jul-12	4.79		10.392
	7-Nov-12	32.41		
	8-May-13	192.59		
	7-Jun-13	20.20		
	24-Jun-13	33.23		
	17-Jul-13	37.40	0.42	
	20-Aug-13	25.97		
	3-Oct-13	41.87		
	7-Nov-13	28.35	0.45	

Note: Negative values indicate backwater effects.

Table 3.3: Stream Discharge Manual Flow Measurements, 2011 to 2012, Continued

	Date	Discharge (L/s)	Gauge Height (m)	Drainage Area (km^2)
HS5	11-Jul-12	3.87	0.190	2.235
	15-Aug-12	-1.63		
	8-May-13	6.25		
	7-Jun-13	1.83		
	25-Jun-13	2.59	0.15	
	17-Jul-13	0.77	0.15	
	20-Aug-13	0.73		
	3-Oct-13	3.07	0.22	
	13-Nov-13	1.89	0.18	
HS6	24-Jul-12	22.39		1.032
	6-Nov-12	1.31	0.530	
	7-May-13	30.29	0.770	
	6-Jun-13	1.57		
	24-Jun-13	3.10	0.5	
	17-Jul-13	1.67	0.36	
	20-Aug-13	1.43	0.48	
	3-Oct-13	1.16	0.4	
	7-Nov-13	3.93	0.45	
HS 7	24-Jul-12	34.42		9.618
	7-Nov-12	46.10		
	8-May-13	460.32		
	7-Jun-13	110.90		
	24-Jun-13	53.44	0.24	
	17-Jul-13	26.33	0.22	
	20-Aug-13	16.23		
	3-Oct-13	25.22	0.3	
	13-Nov-13	998.74	0.25	
JCTA	8-May-13	274.79		1.642
	24-Jun-13	79.10	0.4	
	7-Jun-13	99.21		
	17-Jul-13	34.70	0.4	
	20-Aug-13	3.80	0.28	
	3-Oct-13	48.13		
	13-Nov-13	33.52	0.3	

Note: Negative values indicate backwater effects.

3.4 Stage-Discharge Curves

The stage-discharge curves were generated using the manual stream discharge measurements collected during the 2012 and 2013 monitoring periods. In the absence of elevation surveys to determine if there was any vertical movement of the hydrometric stations, there may be a degree of error from 2012 to 2013 for all monitoring stations.

Figure 3.1 through 3.7 present the stage-discharge curves for the monitored locations. A total of two manual stream discharge measurements were collected at the TL1A, TL3, HS4, HS5, HS6, and HS7 hydrometric stations in 2012; a total of seven measurements were collected at the TL1A, TL3, JCTA, HS4, HS5, HS6, and HS7 hydrometric stations in 2013.

A power law formula was developed from each stage-discharge curve, and was used to calculate discharge values from the water level readings collected from the pressure transducers at each hydrometric monitoring location. The correlation (r^2) values ranged from 0.01 (TL3) to 0.88 (HS7), indicating a relatively low to high degree of correlation of data to the generated trend line (MS-Excel using least squares regression) Where the power law equation that best fit the existing data had an unreasonably high exponent, the exponent was limited to a more reasonable value (2.7) and the coefficient of the power law equation was obtained using least squares regression, in order to create an equation that would predict more accurate higher flows. Additional manual stream discharge measurements for the mid to high-range discharge events will help to verify the relationship of the stage-discharge curves.

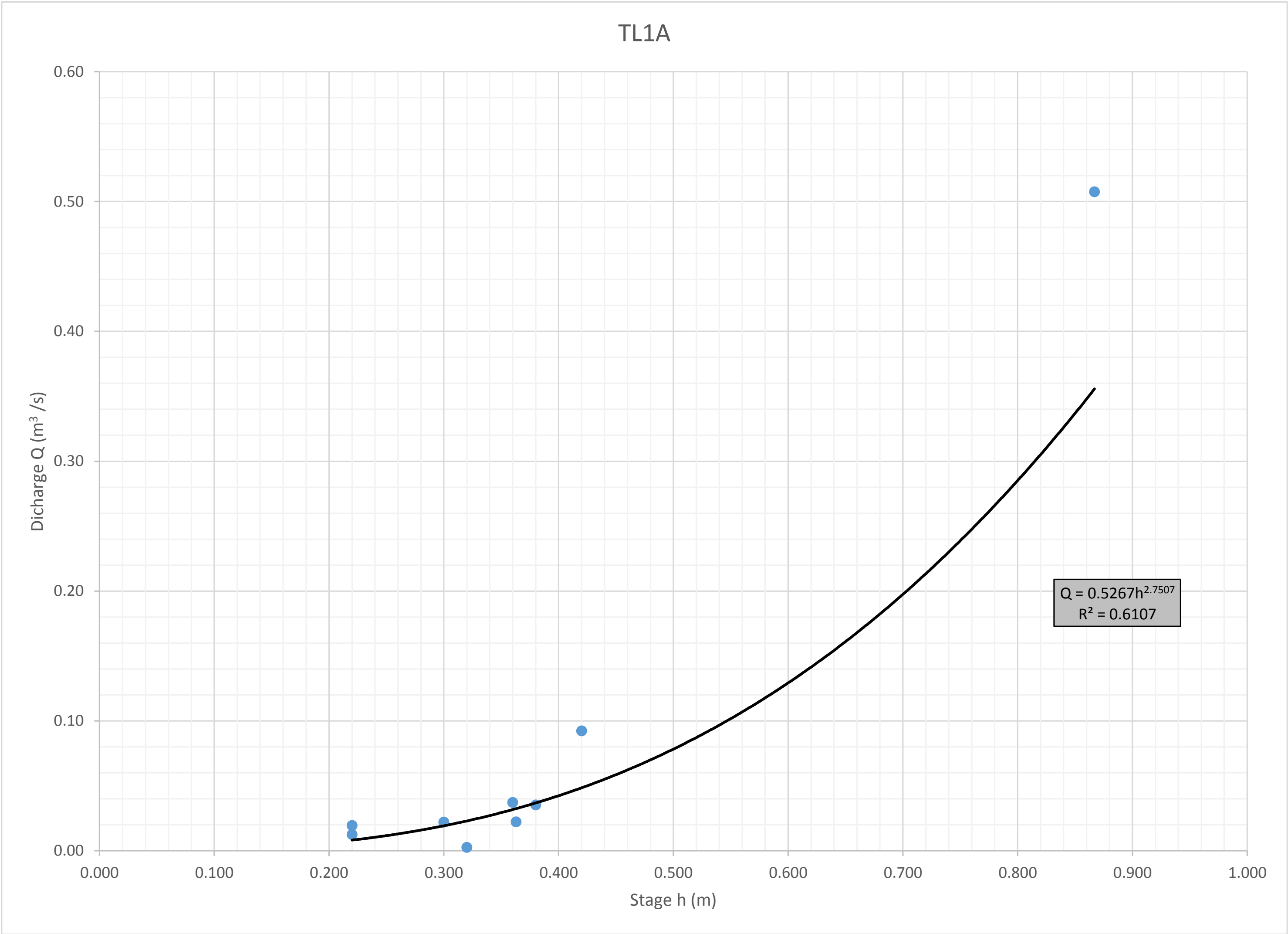


Figure 3.1: Stage-Discharge Curve for TL1A Hydrometric Station, 2012-2013

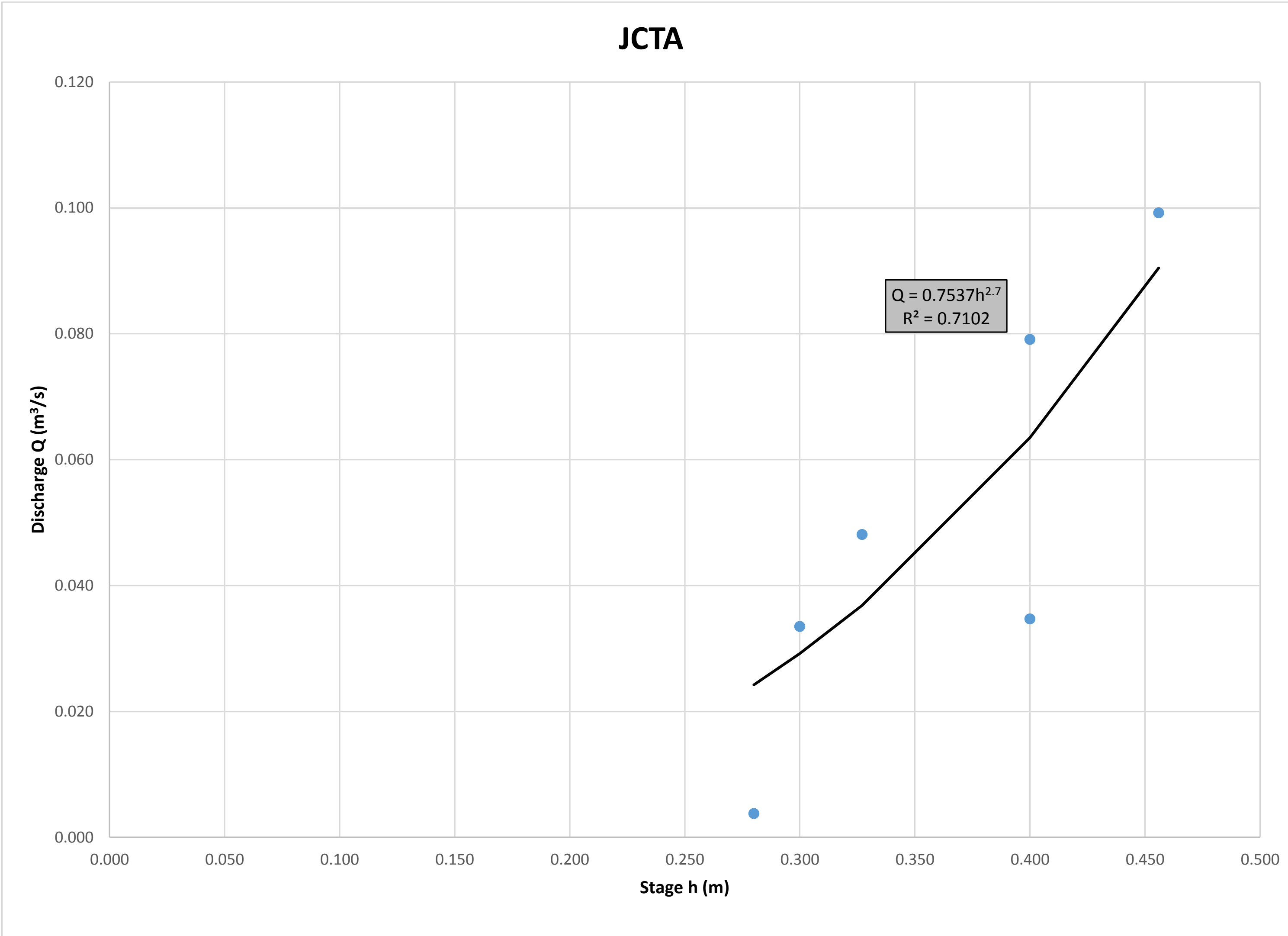


Figure 3.2: Stage-Discharge Curve for JCTA Hydrometric Station, 2012-2013

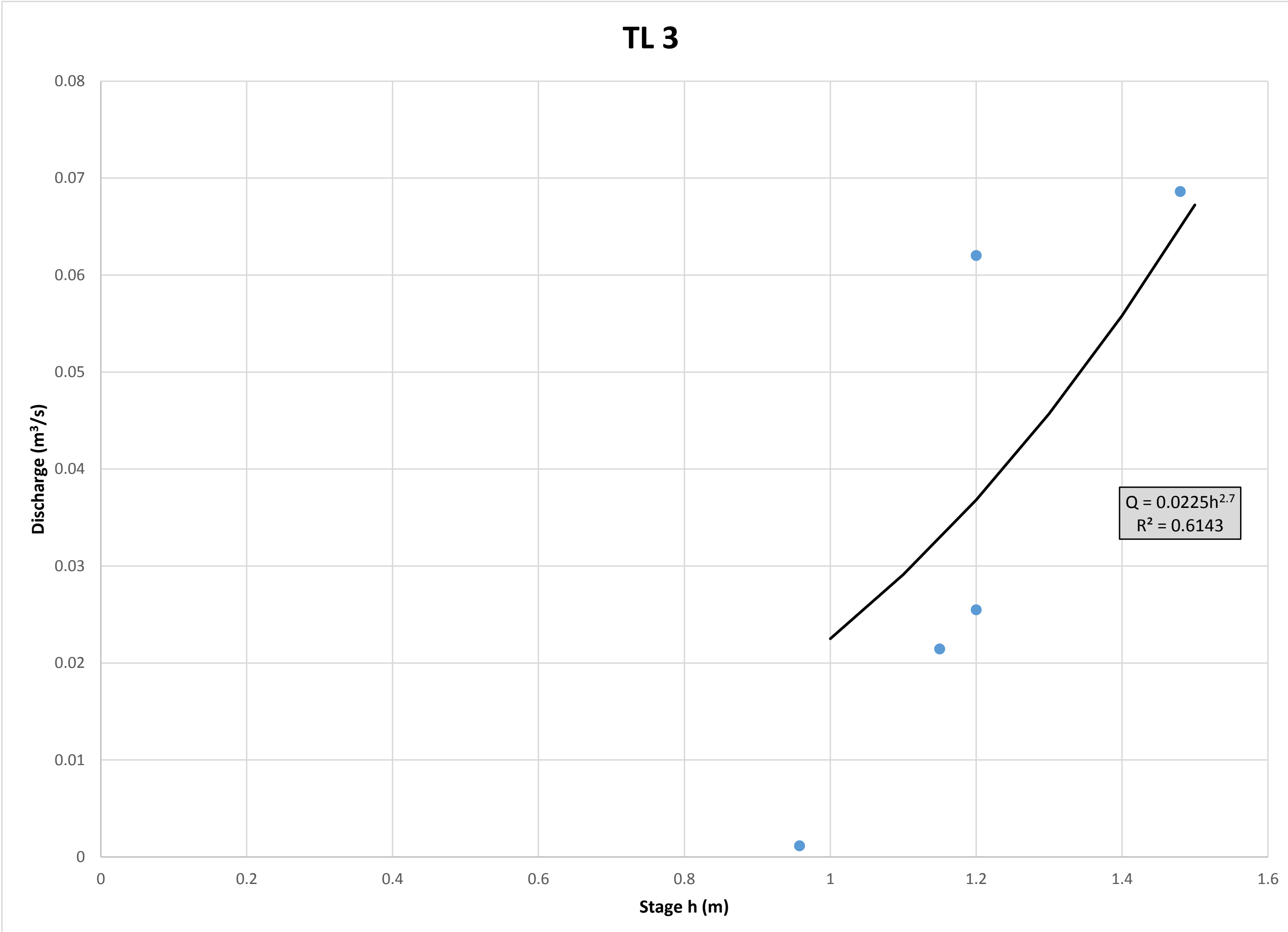


Figure 3.3: Stage-Discharge Curve for JCTA Hydrometric Station, 2012-2013

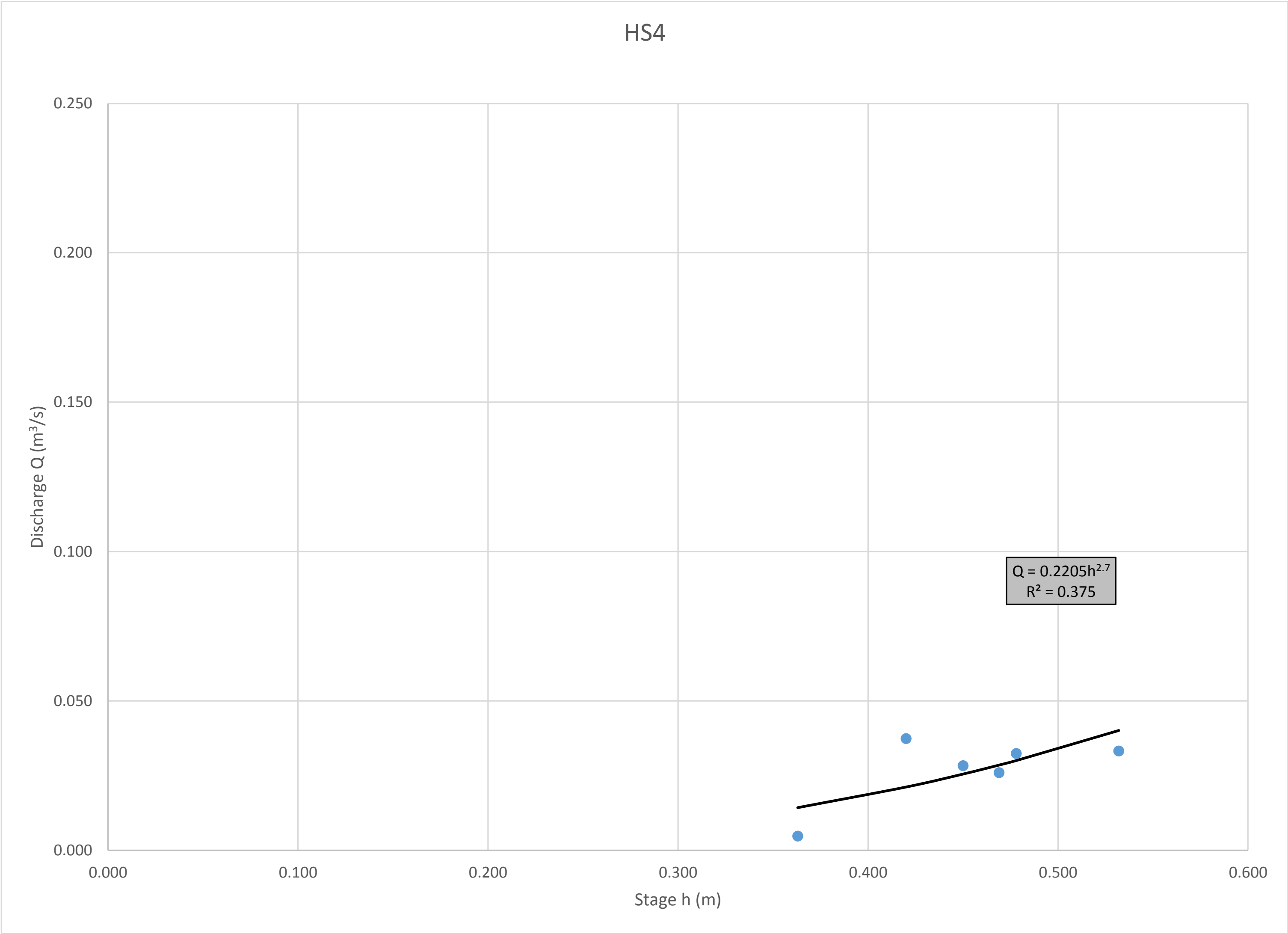


Figure 3.4: Stage-Discharge Curve for HS4 Hydrometric Station, 2012-2013

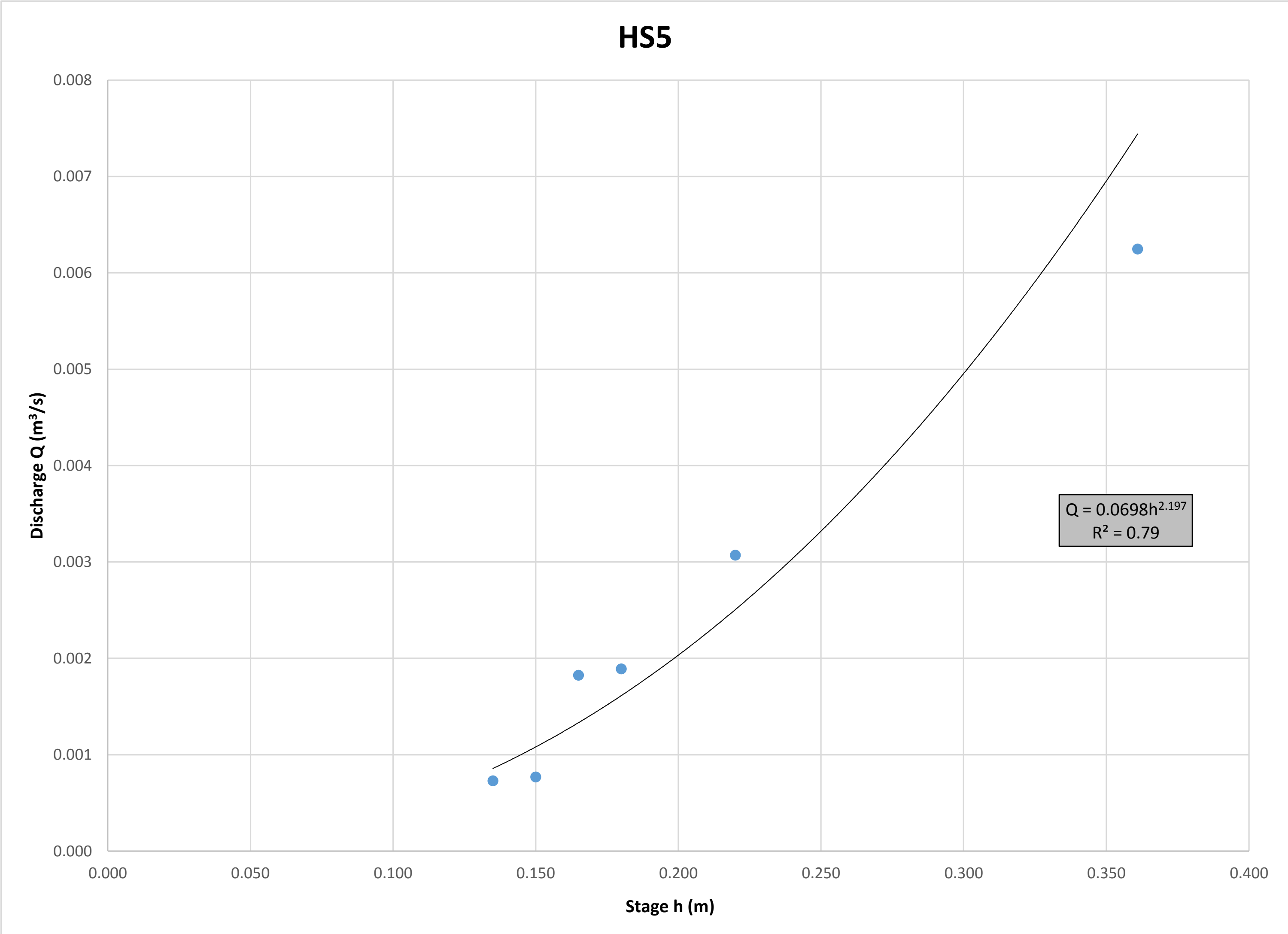


Figure 3.5: Stage-Discharge Curve for HS5 Hydrometric Station, 2012-2013

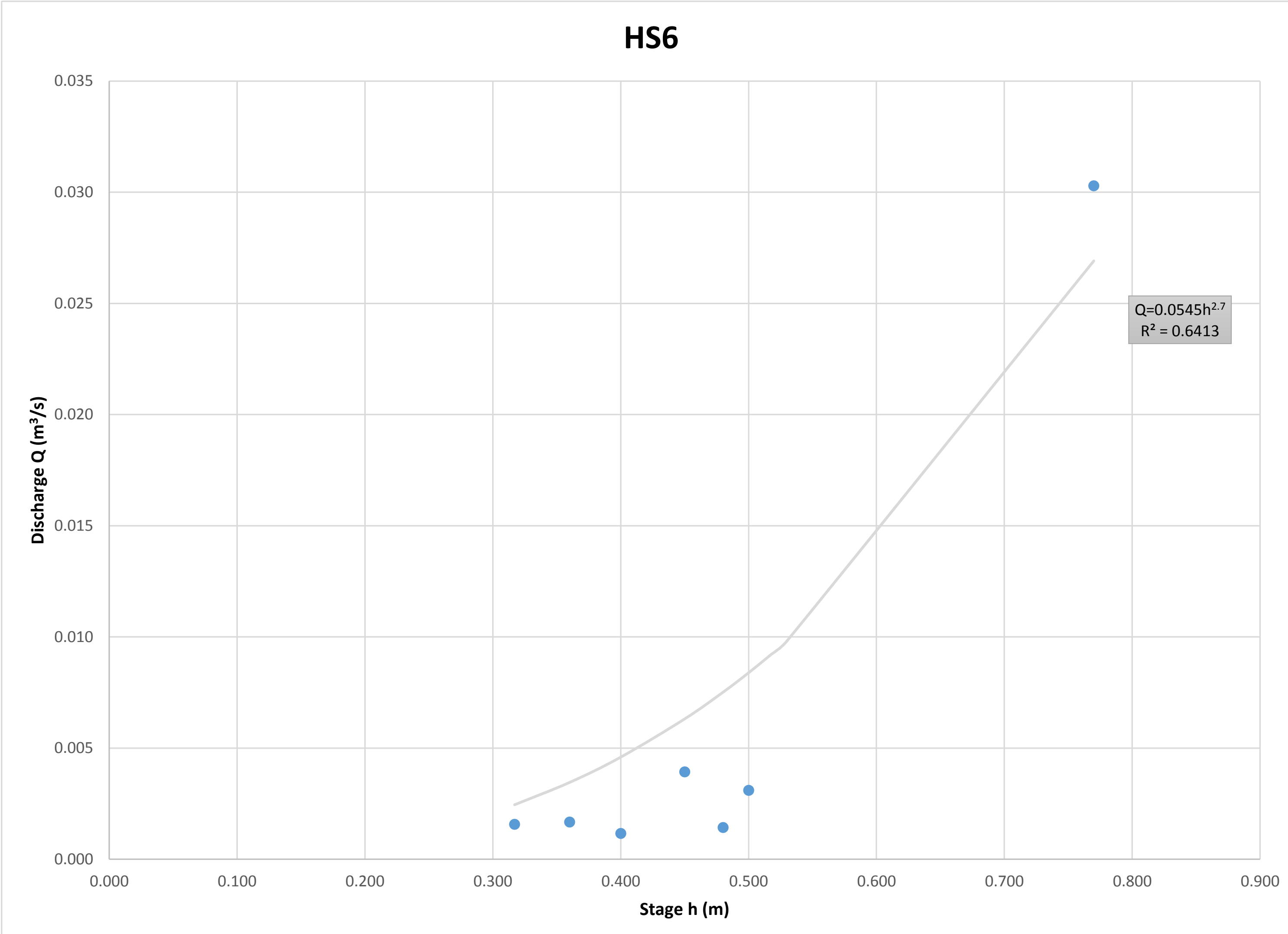


Figure 3.6: Stage-Discharge Curve for HS6 Hydrometric Station, 2012-2013

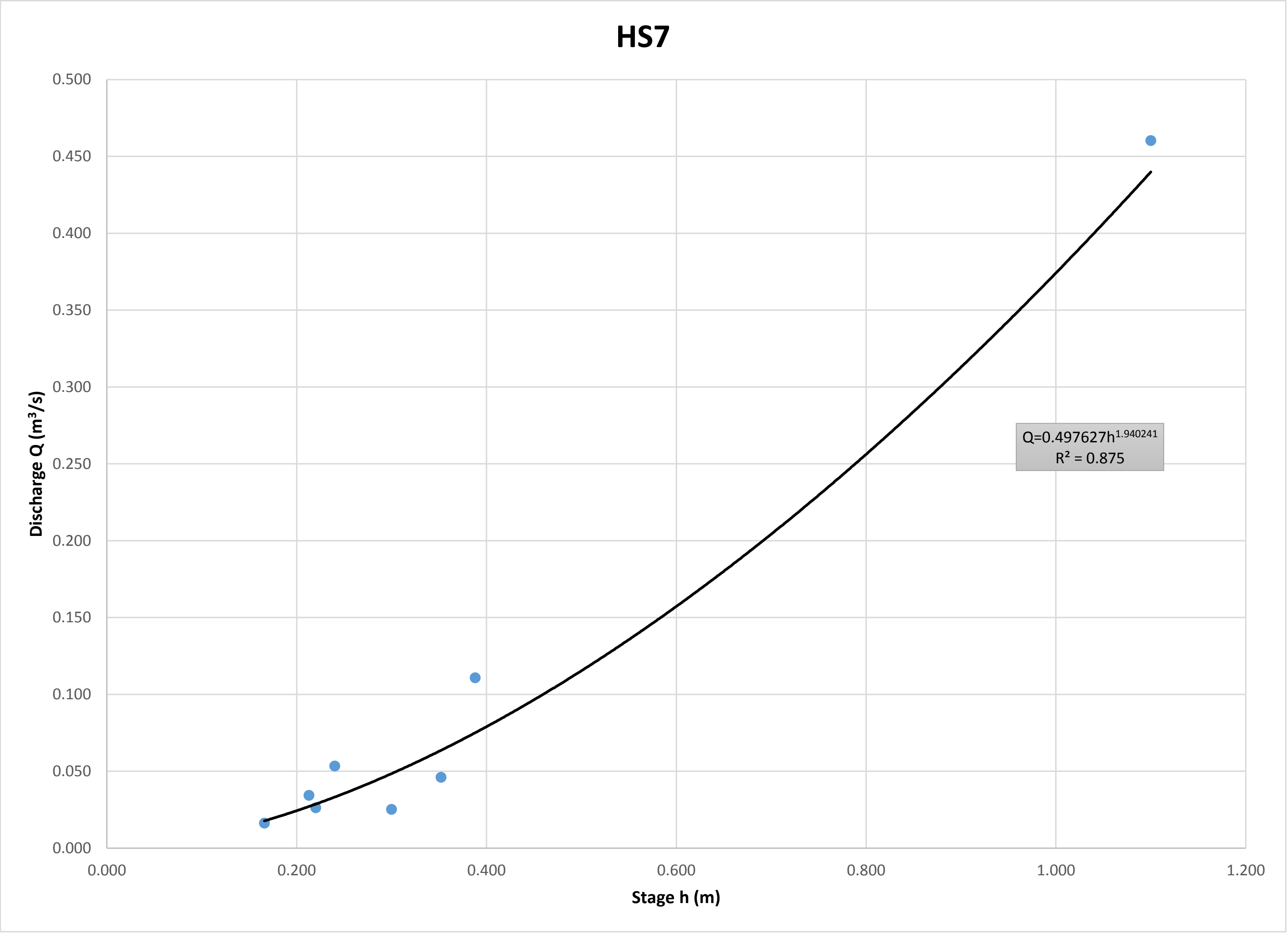


Figure 3.7: Stage-Discharge Curve for HS7 Hydrometric Station, 2012-2013

3.5 Average Daily Discharge

The average daily discharges that were generated for the hydrometric stations are presented in Tables B-1 through B-8 in Appendix B. Table 3.4 summarizes the statistics associated with the daily average discharges. Note that the majority of the maximum discharges recorded during the 2012 monitoring period include the spring freshet and high rainfall periods in June, August, and October 2012. The 2013 data indicates maximum discharges recorded during the 2013 freshet, and in May, June, and August/September due to high rainfall events.

The spring freshet data from hydrometric station TL1A was captured in the middle of March 2012 and in beginning of May 2013. The peak daily discharge recorded was 356.3 L/s, which occurred on May 8, 2013; while the lowest average daily discharge over the two year monitoring period was recorded at 0.1 L/s on May 18, 2012. The average daily discharge for TL1A was 27 L/s for 2012 and 53 L/s for the 2013 monitoring period.

Data from the 2012 and 2013 spring freshets were also captured at hydrometric station TL3. Higher flow values were observed in the middle of March 2012 and the beginning of May 2013. The peak daily discharge was 100.6 L/s on September 1, 2013, while the average daily minimum was recorded at 2.7 L/s on December 26, 2012. In general, this hydrometric station had an average daily discharge of 17.2 L/s in 2012 and 66.2 L/s in 2013.

Hydrometric station JCTA was installed on May 15, 2013 and was monitored over the open water season until November 7, 2013. As spring freshet for the 2013 season, this station captured the tail end of the freshet. The peak daily discharge was 930.9 L/s on May 21, 2013, while the lowest daily discharge was 16.1 L/s on October 20, 2013. In general, the average daily discharge was calculated to be 85.1 L/s.

As hydrometric station HS4 was installed on July 24, 2012, the 2012 spring freshet was not captured at this location. The unit also did not record data for 2013 until June 7, 2013; therefore, the 2013 freshet was also not captured during this monitoring period. From the data obtained over the two year monitoring period, the peak daily discharge was recorded as 569.2 L/s on September 20, 2012, while the lowest daily discharge was 13.1 L/s on July 28, 2012. The average daily discharge was calculated to be 26.8 L/s in 2012 and 111.6 L/s in 2013.

Hydrometric station HS5 was originally installed on August 22, 2012 and monitored until May 2013. There was a two month period in which data was not recorded at this station, for an unknown reason. The collection of data continued from August 22, 2013 to November 7, 2013. The peak daily discharge was recorded as 46.6 L/s on April 28, 2013; while the lowest daily discharge was 0.003 L/s on July 20, 2013. The average daily discharge was calculated to be 1.9 L/s in 2012 and 2013.

Hydrometric station HS6 was originally installed on July 24, 2012 and monitored until December 10, 2012. The collection of data continued from May 7 to November 7, 2013. Although the 2012 spring freshet was not recorded at this station, the end of the 2013 freshet was captured. The peak daily discharge was recorded as 22 L/s on May 7, 2013; while the lowest daily discharge was 0.1 L/s on May 13, 2013. The average daily discharge was calculated to be 10.6 L/s in 2012 and 3.6 L/S in 2013.

Hydrometric station HS7 was also installed on July 24, 2012. This station was monitoring from the installation date until December 10, 2012 and then again on May 7, 2013 to November 7, 2013. Although the spring freshet was not captured in 2012 at this station, the 2013 freshet was. The peak daily discharge was recorded as 791.6 L/s on May 21, 2013; while the lowest daily discharge was 15.2 L/s on August 20, 2013. The average daily discharge was calculated to be 53 L/s in 2012 and 91 L/S in 2013.

Table 3.4: Average Daily Discharge Statistics, 2012 to 2013

Site		*2012*			*2013*	
	Min.	*Max.*	*Mean*	*Min.*	*Max.*	*Mean*
TL1A	0.1	173.3	27.0	9.6	356.3	53.0
(Date)	18-May	12-Mar	-	4-Jul	8-May	-
TL3	2.7	81.4	17.2	19.9	100.6	66.2
(Date)	26-Dec	18-Mar	-	18-May	1-Sep	-
HS4	13.1	77.2	26.8	26.5	569.2	111.6
(Date)	28-Jul	25-Oct	-	5-Jul	20-Sep	-
HS5	0.4	6.2	1.9	0.003	46.6	1.9
(Date)	31-Dec	24-Oct	-	20-Jul	28-Apr	-
HS6	9.2	12.5	10.6	0.1	22.0	3.6
(Date)	24-Jul	24-Oct	-	13-May	7-May	-
HS7	19.7	127.7	53.0	15.2	791.6	91.0
(Date)	1-Sep	10-Oct	-	20-Aug	21-May	-
JCTA	-	-	-	16.1	930.9	85.1
(Date)	-	-	-	20-Oct	21-May	-

Notes:
All values are reported in L/S, unless otherwise specified.

Figure 3.8 through Figure 3.10 presents a unit-yield hydrograph (average daily discharge/drainage area unit) for each of the seven on-site hydrometric stations. A comparison of the unit yields for each of the seven sub-watersheds shows higher unit yields for hydrometric stations TL1a, TL3 and HS6 for the 2012 monitoring period, and JCTA and TL3 for the 2013 monitoring program. The highest recorded unit yields during the 2012 monitoring period were 26 L/s/km^2, 26 L/s/km^2, and 12 L/s/km^2; with the highest recorded at JCTA and TL3 of 567 L/s/km^2, and 36 L/s/km^2 respectively in 2013.

When comparing the later summer and early fall months for the 2012 monitoring period, hydrometric stations HS6, TL3, and TL1A maintained a higher unit yield during these dryer periods than the remaining monitored sub-watersheds.

As shown on the hydrograph for the seven monitoring locations, presented as Figure 3.11 through Figure 3.12, the peak flows were measured in stations TL1A and HS7 in 2012, and JCTA and HS7 in 2013. All seven hydrometric stations showed good correlation during the 2012 monitoring period, and in the 2013. Additional flow monitoring at the mid- to high-discharge rates would strengthen the stage-discharge curves; incorporating these additional data into the stage discharge curve for all locations should correct any possible errors for high-discharge and improve the accuracy of the low flow rate estimates.

3.6 Wabigoon River Hydrologic Summary

Environment Canada maintains a hydrometric station on the Wabigoon River near Quibell, approximately 62 km northwest and downstream of the study area. This data encompasses a watershed area of 6,487 km ^{2}. The data is typically available for public review on Environment Canada's Water Office website. Both current and historical water levels and discharge values are available with monitoring station information such as location, elevation and years of monitoring.

The 2012 data was not available for review; however the 2013 data was. This data was downloaded the Environment Canada website and was used to compare the project area discharge values and trends to downstream values. If the data correlates, similar peaks and valleys would be observed over the monitoring period.

Precipitation data from the Dryden Airport meteorological stations was also included in Figures 3.8 through 3.12 for comparative purposes. Relatively significant rainfall was recorded in July, August, and October of 2012; and May, July, September, and October in 2013.

In general, Figure 3.12 shows peaks in discharge for the stations located at HS5, HS6, TL3, SH7, and TL1A later in April into May 2013, indicating the period of the spring freshet. When comparing the unit yield data from the Wabigoon River Environmental Canada station (05QD006) to the study area hydrometric stations, as in Figure 3.10, there is a good correlation between the unit yields from all study area hydrometric stations to the Wabigoon River station and the precipitation data.

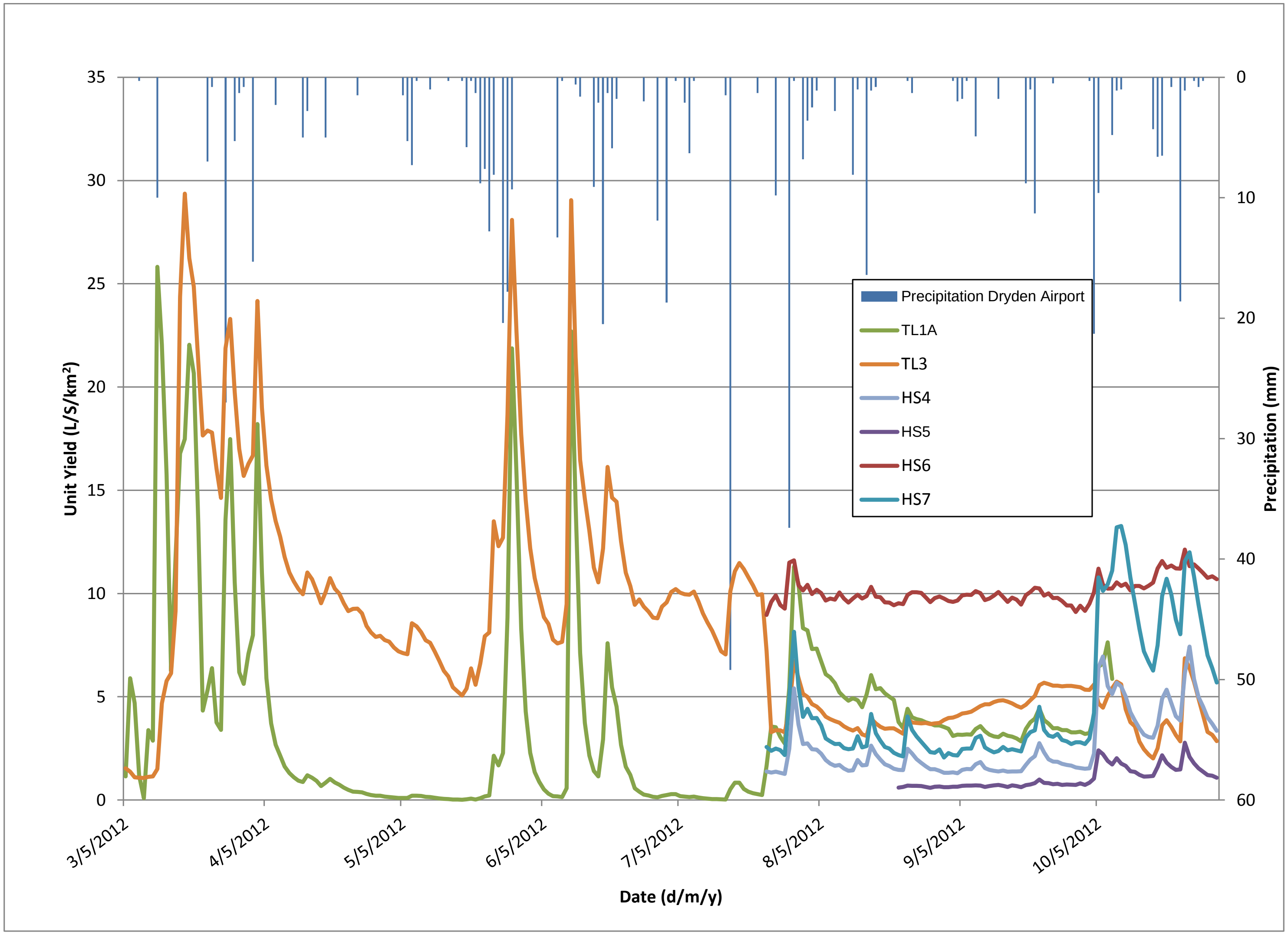


Figure 3.8: Unit Yield for Hydrometric Stations Study Area, 2012

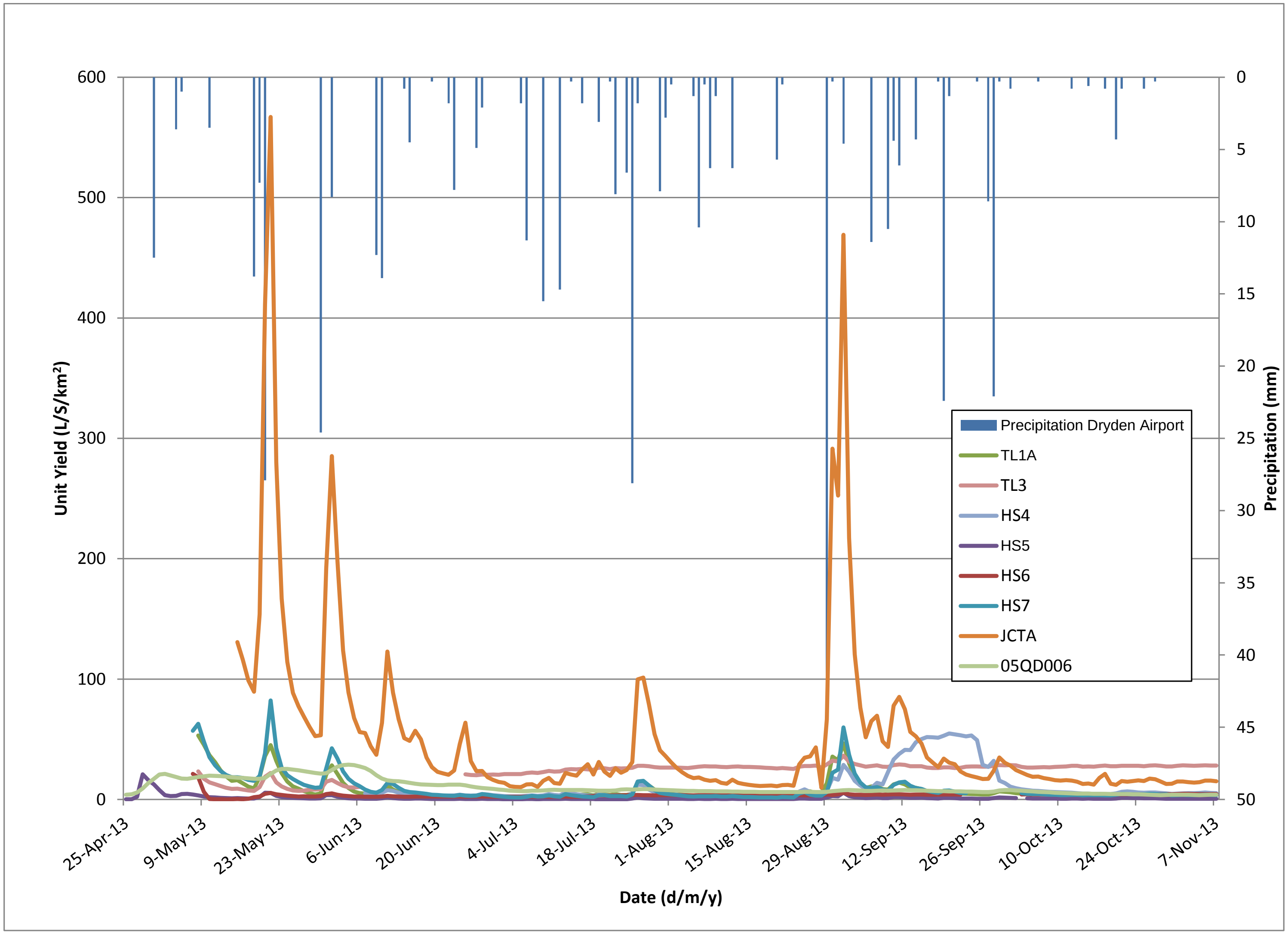


Figure 3.9: Unit Yield for Hydrometric Stations Study Area, 2013

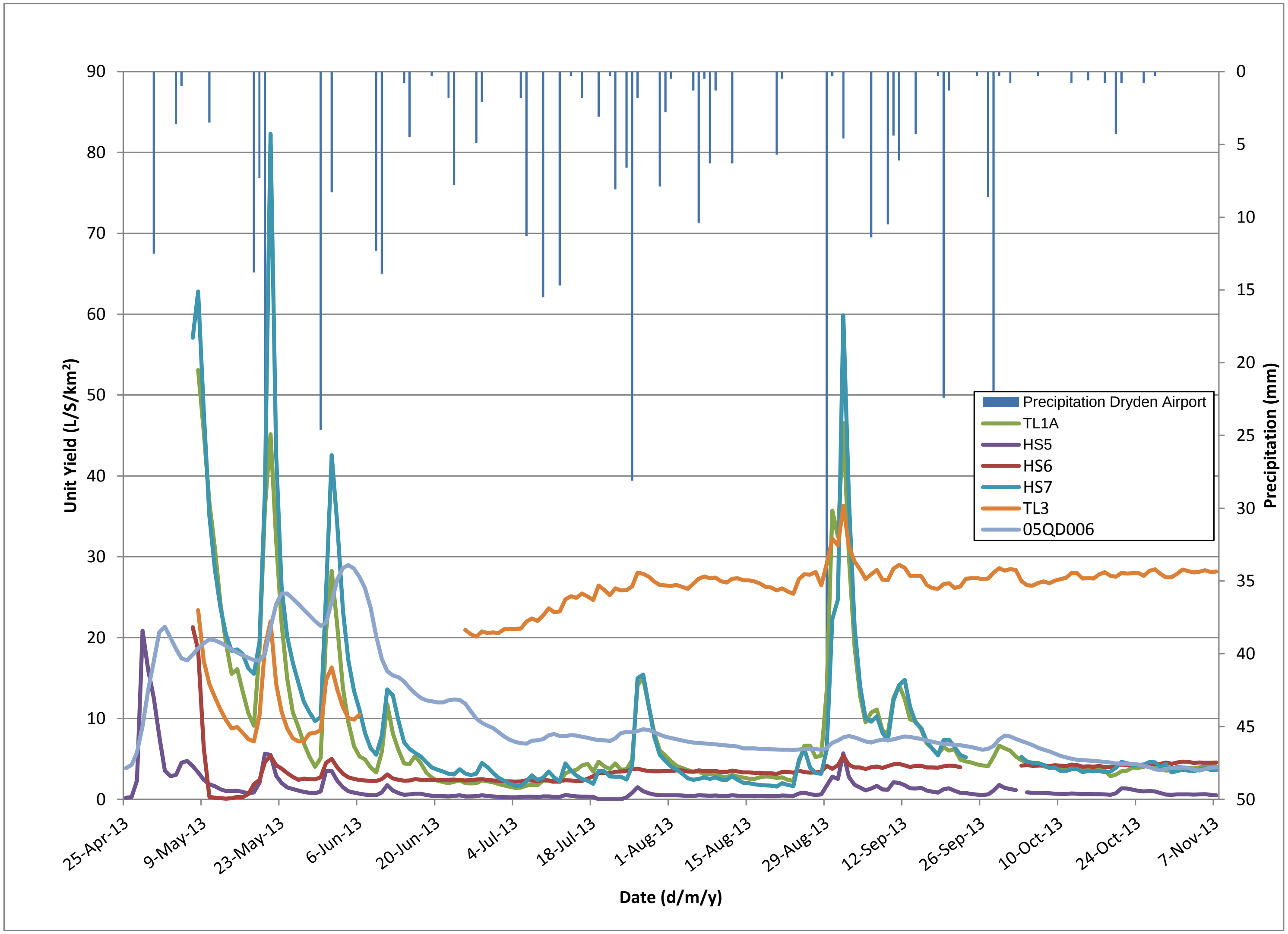


Figure 3.10: Enhanced Unit Yield for Hydrometric Stations Study Area, 2013

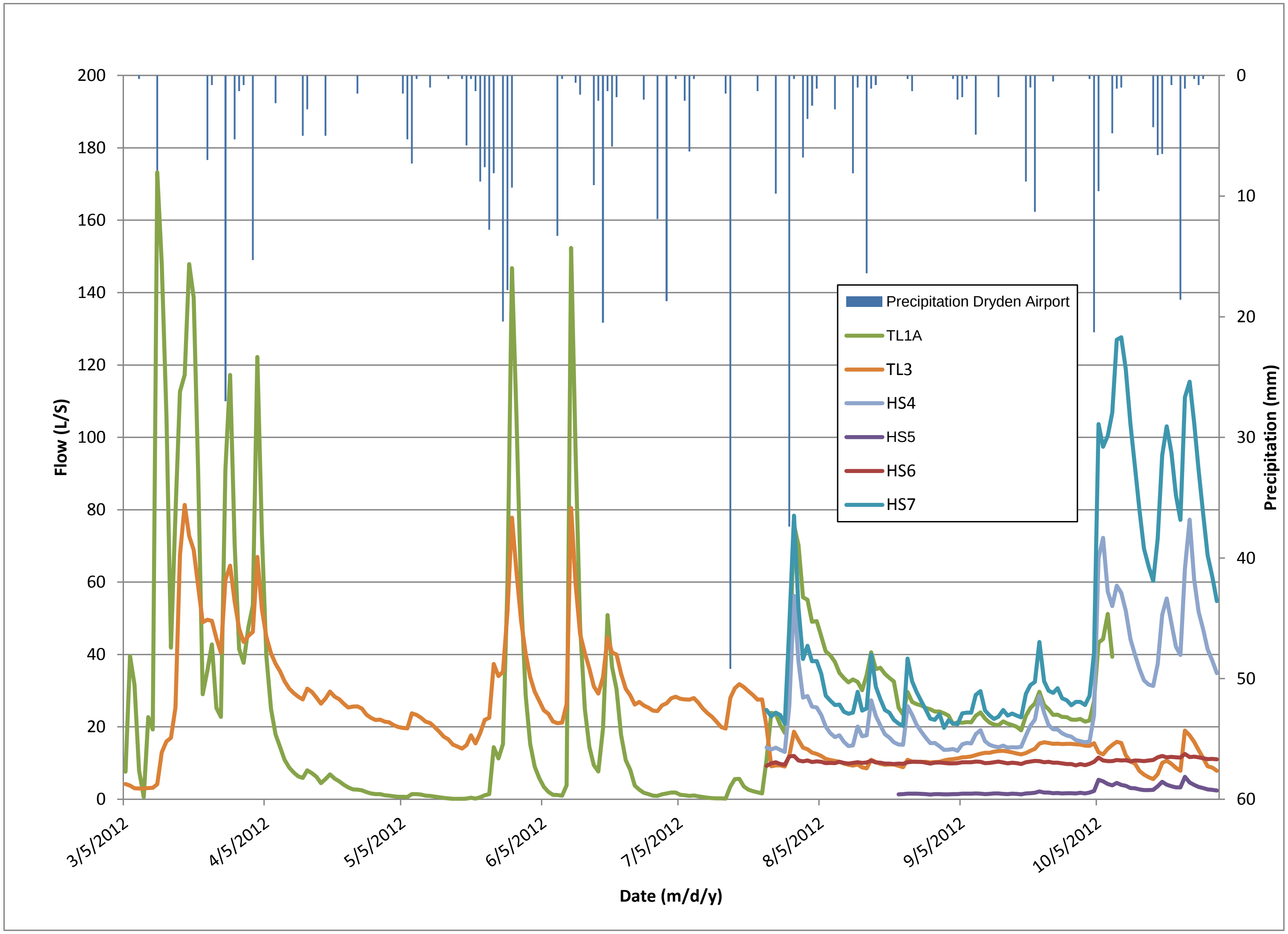


Figure 3.11: Discharge of the Study Area Hydrograph, 2012

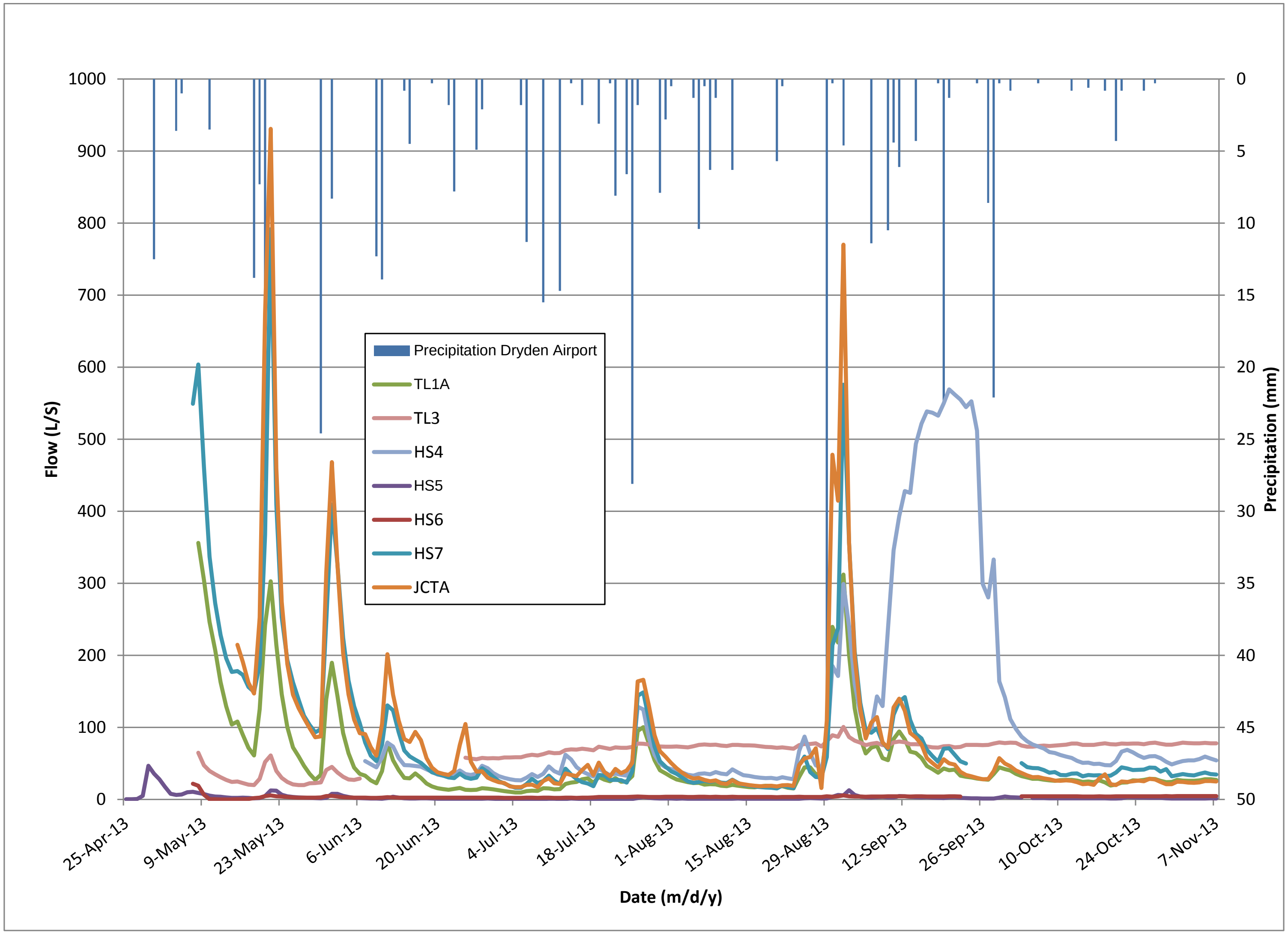


Figure 3.12: Discharge of the Study Area Hydrograph, 2013

4. CONCLUSIONS

DST has completed the 2012 and 2013 hydrological monitoring reporting for the Goliath Gold. The hydrologic monitoring for this project began in 2011 by KCB and continued to 2013 by TML and DST staff. A total of seven hydrometric monitoring stations (TL1A, TL3, JCTA, HS4, HS5, HS6, and HS7) were manually monitored by TML personnel during this monitoring period (2012 to 2013). Based upon the overall needs of the project, the hydrometric monitoring program was reassessed by DST in the beginning of 2012. Four additional monitoring locations (HS4 to HS7) was added; TL1A, JCTA, and TL3 monitoring stations were kept; and the remaining stations were removed. All stations were installed or adjusted to include DST's methodology for hydrometric monitoring. All stations were left in place after installation in order to capture the following year's spring freshet. No adjustments to the stations were made during the monitoring periods after installation.

Based upon the manual measurements collected during this period, moderately correlated stage-discharge curves were generated for all seven stations. The stage-discharge formulae developed to convert automated pressure transducer measurements into discharge estimates can confidently be applied to all stations. It should be noted however, that corrections for data errors found during the study period (i.e. moved station) have not been completed or incorporated into all data presented as level survey information was not obtained during the monitoring period.

Precipitation data from the Dryden Airport weather station indicated relatively significant rainfall was recorded in July, August, and October of 2012; and May, July, September, and October in 2013. Discharge data collected by Environment Canada at the Wabigoon River location hydrometric monitoring station indicated the spring freshet occurring in late April in 2013 and significant water levels occurring in the beginning of June 2013.

The estimated average daily discharges for the hydrometric monitoring stations were as follows: the TL1A station at 27 L/s in 2012 and 53 L/s in 2013; TL3 station at 17.2 L/s in 2012 and 66.2 L/s in 2013; JCTA station at 85.1 L/s in 2013; HS4 at 26.8 L/s in 2012 and 111.6 L/s in 2013; HS5 station at 1.9 L/s in 2012 and 2013; HS6 station at 10.6 L/s in 2012 and 3.6 L/s in 2013; and, HS7 station at 53 L/s in 2012 and 91 L/s in 2013. Of all the hydrometric stations located within the project area, station HS4, on average, had the highest discharge over the monitoring period; whereas HS5 had the lowest.

A comparison of the unit yields for each of the seven sub-watersheds shows higher unit yields for hydrometric stations TL1A, TL3 and HS6 for the 2012 monitoring period, and JCTA and TL3 for the 2013 monitoring program. The highest recorded unit yields during the 2012 monitoring period were 26 L/s/km^2, 26 L/s/km^2, and 12 L/s/km^2; with the highest 2013 recorded at JCTA and TL3 of 567 L/s/Km^2, and 36 L/s/km^2 respectively.

5. CLOSURE

We appreciate this opportunity to provide environmental services to you. If you have any questions or comments, please contact the undersigned.

For DST CONSULTING ENGINEERS INC.

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6. REFERENCES

Environment Canada, Water Office. Wabigoon River Near Quibell [ON] (05QD006). Accessed March 10, 2014 at: http://www.wateroffice.ec.gc.ca/graph/graph_e.html?stn=05QD006

Klohn Crippen Berger (KCB). September 2012. Goliath Gold Project, Environment Baseline Study, November 2010 to November 2011.

Marsh-McBirney Inc., 1990. *Model 2000, Installation and Operations Manual.*

APPENDIX A

Summary of Stream Discharge Measurements

Table 1A: TL1A Field Measurements

Date: 6-Nov-12 Staff Gauge: 0.38
Time (CST):
Channel Width: 1.85

Station	Depth (m)	Width (m)	Area (m^2)	Velocity (m/s) 20%	60%	80%	Velocity/Ū (m/s) (average)	Q (m^3/s)
0.20	0.12	0.00	0.000		0.03		0.03	0.0000
0.23	0.14	0.025	0.004		0.07		0.07	0.0002
0.25	0.14	0.050	0.007		0.11		0.11	0.0007
0.30	0.14	0.05	0.007		0.13		0.13	0.0009
0.35	0.15	0.05	0.008		0.04		0.04	0.0003
0.40	0.17	0.05	0.009		0.02		0.02	0.0002
0.45	0.18	0.05	0.009		0.02		0.02	0.0002
0.50	0.18	0.05	0.009		0.05		0.05	0.0005
0.55	0.17	0.05	0.009		0.10		0.10	0.0009
0.60	0.16	0.05	0.008		0.13		0.13	0.0010
0.65	0.16	0.05	0.008		0.05		0.05	0.0004
0.70	0.16	0.05	0.008		0.07		0.07	0.0005
0.75	0.16	0.05	0.008		0.07		0.07	0.0006
0.80	0.18	0.05	0.009		0.11		0.11	0.0010
0.85	0.22	0.05	0.011		0.16		0.16	0.0017
0.90	0.22	0.05	0.011		0.11		0.11	0.0012
0.95	0.24	0.05	0.012		0.08		0.08	0.0009
1.00	0.26	0.05	0.013		0.13		0.13	0.0017
1.05	0.26	0.05	0.013		0.11		0.11	0.0014
1.10	0.26	0.05	0.013		0.11		0.11	0.0014
1.15	0.26	0.05	0.013		0.12		0.12	0.0016
1.20	0.26	0.05	0.013		0.11		0.11	0.0015
1.25	0.26	0.05	0.013		0.11		0.11	0.0015
1.30	0.26	0.05	0.013		0.19		0.19	0.0024
1.35	0.26	0.05	0.013		0.10		0.10	0.0013
1.40	0.24	0.05	0.012		0.13		0.13	0.0016
1.45	0.22	0.05	0.011		0.11		0.11	0.0012
1.50	0.22	0.05	0.011		0.19		0.19	0.0020
1.55	0.22	0.05	0.011		0.15		0.15	0.0016
1.60	0.22	0.05	0.011		0.06		0.06	0.0007
1.65	0.22	0.05	0.011		0.15		0.15	0.0016
1.70	0.21	0.05	0.011		0.08		0.08	0.0008
1.75	0.21	0.05	0.011		0.15		0.15	0.0016
1.80	0.20	0.05	0.010		0.02		0.02	0.0002
1.85	0.19	0.05	0.010		0.00		0.00	0.0000
1.90	0.17	0.05	0.009		-0.06		-0.06	-0.0005
1.95	0.16	0.05	0.008		0.04		0.04	0.0003
2.00	0.10	0.05	0.005		0.03		0.03	0.0002
2.05	0.00	0.05	0.000		0.00		0.00	0.0000
							Total Flow =	0.0353

Date: 8-May-13 Staff Gauge:
Time (CST):
Channel Width: 7.400

Station	Depth (m)	Width (m)	Area (m^2)	Velocity (m/s) 0.200	0.600	0.800	Velocity/Ū (m/s) (average)	Q (m^3/s)
10.600	0.020	0.000	0.000		0.010		0.010	0.000
10.400	0.080	0.200	0.016		0.040		0.040	0.001
10.000	0.200	0.400	0.080		0.020		0.020	0.002
9.600	0.340	0.400	0.136		0.080		0.080	0.011
9.200	0.380	0.400	0.152		0.030		0.030	0.005
8.800	0.380	0.400	0.152		0.270		0.270	0.041
8.400	0.460	0.400	0.184		0.170		0.170	0.031
8.000	0.520	0.400	0.208		0.140		0.140	0.029
7.600	0.640	0.400	0.256		0.170		0.170	0.044
7.200	0.780	0.400	0.312	0.160		0.190	0.175	0.055
6.800	0.840	0.400	0.336	0.200		0.300	0.250	0.084
6.400	0.840	0.400	0.336	0.110		0.210	0.160	0.054
6.000	0.820	0.400	0.328	0.250		0.280	0.265	0.087
5.600	0.760	0.400	0.304	0.120		0.280	0.200	0.000
5.200	0.640	0.400	0.256		0.180		0.180	0.046
4.800	0.360	0.400	0.144		0.120		0.120	0.017
4.400	0.260	0.400	0.104		0.080		0.080	0.008
4.000	0.280	0.400	0.112		-0.030		-0.030	-0.003
3.600	0.300	0.400	0.120		-0.020		-0.020	-0.002
3.200	0.020	0.400	0.008		-0.030		-0.030	0.000
							Total Flow =	0.508

Date: 24-Jul-12 Staff Gauge:
Time (CST):
Channel Width: 3.000

Station	Depth (m)	Width (m)	Area (m^2)	Velocity (m/s) 20%	60%	80%	Velocity/Ū (m/s)	Q (m^3/s)
2.6	0.00	0.10	0.00		0.00		0.00	0.0000
2.7	0.02	0.10	0.00		-0.02		-0.02	0.0000
2.8	0.10	0.10	0.01		0.00		0.00	0.0000
2.85	0.14	0.10	0.01		-0.01		-0.01	-0.0001
2.95	0.16	0.10	0.02		-0.02		-0.02	-0.0003
3.05	0.20	0.10	0.02		0.00		0.00	0.0000
3.15	0.19	0.10	0.02		0.00		0.00	0.0000
3.25	0.21	0.10	0.02		-0.01		-0.01	-0.0002
3.35	0.25	0.10	0.03		0.00		0.00	0.0000
3.45	0.30	0.10	0.03		0.00		0.00	0.0000
3.55	0.32	0.10	0.03		0.00		0.00	0.0000
3.65	0.34	0.10	0.03		0.00		0.00	0.0000
3.75	0.34	0.10	0.03		0.01		0.01	0.0003
3.85	0.32	0.10	0.03		0.00		0.00	0.0000
3.95	0.30	0.10	0.03		0.00		0.00	0.0000
4.05	0.30	0.10	0.03		0.00		0.00	0.0000
4.15	0.28	0.10	0.03		0.00		0.00	0.0000
4.25	0.24	0.10	0.02		0.03		0.03	0.0007
4.35	0.24	0.10	0.02		0.04		0.04	0.0010
4.45	0.24	0.10	0.02		0.06		0.06	0.0014
4.55	0.24	0.10	0.02		0.06		0.06	0.0014
4.65	0.24	0.10	0.02		0.06		0.06	0.0014
4.8	0.24	0.10	0.02		0.06		0.06	0.0014
4.9	0.26	0.10	0.03		0.04		0.04	0.0010
5.0	0.24	0.10	0.02		0.05		0.05	0.0012
5.1	0.20	0.10	0.02		0.05		0.05	0.0010
5.2	0.16	0.10	0.02		0.03		0.03	0.0005
5.3	0.14	0.10	0.01		0.05		0.05	0.0007
5.4	0.10	0.10	0.01		0.04		0.04	0.0004
5.5	0.04	0.10	0.00		0.00		0.00	0.0000
5.6	0.01	0.10	0.00		0.00		0.00	0.0000
5.6	0.00	0.10	0.00		0.00		0.00	0.0000
							Total Flow =	0.01

Date: 6-Jun-13 Staff Gauge: 0.420
Time (CST):
Channel Width: 2.600

Station	Depth (m)	Width (m)	Area (m^2)	Velocity (m/s) 0.200	0.600	0.800	Velocity/Ū (m/s) (average)	Q (m^3/s)
5.300	0.020	0.000	0.000		0.000		0.000	0.000
5.250	0.040	0.050	0.002		0.010		0.010	0.000
5.200	0.060	0.100	0.006		0.010		0.010	0.0001
5.100	0.100	0.100	0.010		0.040		0.040	0.000
5.000	0.180	0.100	0.018		0.050		0.050	0.001
4.900	0.220	0.100	0.022		0.070		0.070	0.002
4.800	0.280	0.100	0.028		0.100		0.100	0.003
4.700	0.320	0.100	0.032		0.130		0.130	0.004
4.600	0.360	0.100	0.036		0.170		0.170	0.006
4.500	0.360	0.100	0.036		0.180		0.180	0.006
4.400	0.380	0.100	0.038		0.140		0.140	0.005
4.300	0.380	0.100	0.038		0.170		0.170	0.006
4.200	0.380	0.100	0.038		0.140		0.140	0.005
4.100	0.380	0.100	0.038		0.110		0.110	0.004
4.000	0.390	0.100	0.039		0.160		0.160	0.006
3.900	0.400	0.100	0.040		0.140		0.140	0.006
3.800	0.400	0.100	0.040		0.170		0.170	0.007
3.700	0.400	0.100	0.040		0.240		0.240	0.010
3.600	0.380	0.100	0.038		0.180		0.180	0.007
3.500	0.380	0.100	0.038		0.150		0.150	0.006
3.400	0.360	0.100	0.036		0.130		0.130	0.005
3.300	0.260	0.100	0.026		0.090		0.090	0.002
3.200	0.280	0.100	0.028		0.000		0.000	0.000
3.100	0.220	0.100	0.022		0.020		0.020	0.000
3.000	0.140	0.100	0.014		0.020		0.020	0.000
2.900	0.100	0.100	0.010		0.010		0.010	0.000
2.800	0.080	0.100	0.008		-0.010		-0.010	0.000
2.700	0.020	0.100	0.002		0.000		0.000	0.000
							Total Flow =	0.092

Table 1A: TL1A Field Measurements Continued.

Date: 24-Jun-13 Staff Gauge: 0.3
Time (CST):
Channel Width: 2.35

Station	Depth (m)	Width (m)	Area (m^2)	Velocity (m/s) 20%	60%	80%	Velocity/Ū (m/s) (average)	Q (m^3/s)
4.25	0.04	0.00	0.000		0.00		0.00	0.0000
4.20	0.06	0.050	0.003		0.00		0.00	0.0000
4.10	0.10	0.100	0.010		0.01		0.01	0.0001
4.00	0.16	0.100	0.016		-0.02		-0.02	-0.0003
3.90	0.26	0.100	0.026		0.00		0.00	0.0000
3.80	0.28	0.100	0.028		-0.01		-0.01	-0.0003
3.70	0.30	0.100	0.030		0.00		0.00	0.0000
3.60	0.32	0.100	0.032		0.00		0.00	0.0000
3.50	0.38	0.100	0.038		-0.01		-0.01	-0.0004
3.40	0.42	0.100	0.042		-0.01		-0.01	-0.0004
3.30	0.46	0.100	0.046		0.00		0.00	0.0000
3.20	0.46	0.100	0.046		0.01		0.01	0.0005
3.10	0.48	0.100	0.048		0.02		0.02	0.0010
3.00	0.49	0.100	0.049		0.03		0.03	0.0015
2.90	0.48	0.100	0.048		0.03		0.03	0.0014
2.80	0.49	0.100	0.049		0.05		0.05	0.0025
2.70	0.47	0.100	0.047		0.08		0.08	0.0038
2.60	0.47	0.100	0.047		0.10		0.10	0.0047
2.50	0.46	0.100	0.046		0.09		0.09	0.0041
2.40	0.42	0.100	0.042		0.07		0.07	0.0029
2.30	0.36	0.100	0.036		0.04		0.04	0.0014
2.20	0.34	0.100	0.034		-0.01		-0.01	-0.0003
2.10	0.28	0.100	0.028		-0.01		-0.01	-0.0003
2.00	0.22	0.100	0.022		0.01		0.01	0.0002
1.90	0.18	0.100	0.018		0.00		0.00	0.0000
							Total Flow =	0.0221

Date: 20-Aug-13 Staff Gauge: 0.32
Time (CST):
Channel Width: 2.60

Station	Depth (m)	Width (m)	Area (m^2)	Velocity (m/s) 20%	60%	80%	Velocity/Ū (m/s) (average)	Q (m^3/s)
6.00	0.06	0.00	0.000		0.00		0.00	0.0000
5.90	0.06	0.100	0.006		0.00		0.00	0.0000
5.80	0.12	0.200	0.024		0.00		0.00	0.0000
5.60	0.26	0.200	0.052		0.00		0.00	0.0000
5.40	0.40	0.200	0.080		0.00		0.00	0.0000
5.20	0.48	0.200	0.096		0.00		0.00	0.0000
5.00	0.49	0.200	0.098		0.00		0.00	0.0000
4.80	0.48	0.200	0.096		0.00		0.00	0.0000
4.60	0.46	0.200	0.092		0.02		0.02	0.0018
4.40	0.48	0.200	0.096		0.00		0.00	0.0000
4.20	0.38	0.200	0.076		0.01		0.01	0.0008
4.00	0.36	0.200	0.072		0.00		0.00	0.0000
3.80	0.12	0.200	0.024		0.00		0.00	0.0000
3.60	0.12	0.200	0.024		0.00		0.00	0.0000
3.40	0.10	0.200	0.020		0.00		0.00	0.0000
							Total Flow =	0.0026

Date: 13-Nov-13 Staff Gauge: 0.36
Time (CST):
Channel Width: 1.70

Station	Depth (m)	Width (m)	Area (m^2)	Velocity (m/s) 20%	60%	80%	Velocity/Ū (m/s) (average)	Q (m^3/s)
3.90	0.16	0.00	0.000		0.00		0.00	0.0000
3.95	0.16	0.050	0.008		0.01		0.01	0.0001
4.00	0.17	0.100	0.017		0.01		0.01	0.0002
4.10	0.18	0.100	0.018		0.00		0.00	0.0000
4.20	0.20	0.100	0.020		0.01		0.01	0.0002
4.30	0.26	0.100	0.026		0.00		0.00	0.0000
4.40	0.30	0.100	0.030		0.04		0.04	0.0012
4.50	0.26	0.100	0.026		0.03		0.03	0.0008
4.60	0.27	0.100	0.027		0.05		0.05	0.0014
4.70	0.30	0.100	0.030		0.04		0.04	0.0012
4.80	0.36	0.100	0.036		0.06		0.06	0.0022
4.90	0.42	0.100	0.042		0.07		0.07	0.0029
5.00	0.47	0.100	0.047		0.17		0.17	0.0080
5.10	0.44	0.100	0.044		0.19		0.19	0.0084
5.20	0.42	0.100	0.042		0.21		0.21	0.0088
5.30	0.34	0.100	0.034		0.06		0.06	0.0020
5.40	0.26	0.100	0.026		0.00		0.00	0.0000
5.50	0.20	0.100	0.020		0.00		0.00	0.0000
5.60	0.12	0.100	0.012		0.00		0.00	0.0000
							Total Flow =	0.0373

Date: 17-Jul-13 Staff Gauge: 0.22
Time (CST):
Channel Width: 2.40

Station	Depth (m)	Width (m)	Area (m^2)	Velocity (m/s) 20%	60%	80%	Velocity/Ū (m/s) (average)	Q (m^3/s)
0.40	0.02	0.00	0.000		0.00		0.00	0.0000
0.45	0.02	0.050	0.001		0.00		0.00	0.0000
0.50	0.02	0.100	0.002		0.03		0.03	0.0001
0.60	0.14	0.100	0.014		0.02		0.02	0.0003
0.70	0.21	0.100	0.021		0.01		0.01	0.0002
0.80	0.24	0.100	0.024		0.10		0.10	0.0024
0.90	0.26	0.100	0.026		0.04		0.04	0.0010
1.00	0.26	0.100	0.026		0.01		0.01	0.0003
1.10	0.26	0.100	0.026		0.05		0.05	0.0013
1.20	0.30	0.100	0.030		0.06		0.06	0.0018
1.30	0.28	0.100	0.028		0.03		0.03	0.0008
1.40	0.26	0.100	0.026		0.03		0.03	0.0008
1.50	0.26	0.100	0.026		0.00		0.00	0.0000
1.60	0.26	0.100	0.026		0.04		0.04	0.0010
1.70	0.26	0.100	0.026		0.07		0.07	0.0018
1.80	0.28	0.100	0.028		0.07		0.07	0.0020
1.90	0.28	0.100	0.028		0.03		0.03	0.0008
2.00	0.34	0.100	0.034		0.00		0.00	0.0000
2.10	0.30	0.100	0.030		0.02		0.02	0.0006
2.20	0.30	0.100	0.030		0.00		0.00	0.0000
2.30	0.22	0.100	0.022		0.00		0.00	0.0000
2.40	0.30	0.100	0.030		0.04		0.04	0.0012
2.50	0.16	0.100	0.016		0.09		0.09	0.0014
2.60	0.12	0.100	0.012		0.10		0.10	0.0012
2.70	0.04	0.100	0.004		0.07		0.07	0.0003
2.80	0.02	0.100	0.002		0.02		0.02	0.0000
							Total Flow =	0.0194

Date: 3-Oct-13 Staff Gauge:
Time (CST):
Channel Width: 1.90

Station	Depth (m)	Width (m)	Area (m^2)	Velocity (m/s) 20%	60%	80%	Velocity/Ū (m/s) (average)	Q (m^3/s)
0.40	0.14	0.00	0.000		0.00		0.00	0.0000
0.45	0.14	0.050	0.007		0.00		0.00	0.0000
0.50	0.18	0.100	0.018		0.01		0.01	0.0002
0.60	0.22	0.100	0.022		0.04		0.04	0.0009
0.70	0.28	0.100	0.028		0.01		0.01	0.0003
0.80	0.22	0.100	0.022		0.09		0.09	0.0020
0.90	0.20	0.100	0.020		0.03		0.03	0.0006
1.00	0.18	0.100	0.018		0.07		0.07	0.0013
1.10	0.20	0.100	0.020		0.15		0.15	0.0030
1.20	0.20	0.100	0.020		0.01		0.01	0.0002
1.30	0.20	0.100	0.020		0.02		0.02	0.0004
1.40	0.22	0.100	0.022		0.06		0.06	0.0013
1.50	0.22	0.100	0.022		0.06		0.06	0.0013
1.60	0.20	0.100	0.020		0.00		0.00	0.0000
1.70	0.20	0.100	0.020		0.02		0.02	0.0004
1.80	0.20	0.100	0.020		0.00		0.00	0.0000
1.90	0.28	0.100	0.028		0.26		0.26	0.0073
2.00	0.28	0.100	0.028		0.06		0.06	0.0017
2.10	0.18	0.100	0.018		0.08		0.08	0.0014
2.20	0.14	0.100	0.014		0.00		0.00	0.0000
2.30	0.08	0.100	0.008		0.00		0.00	0.0000
							Total Flow =	0.0222

Table 2A: JCTA Field Measurements

Date: 8-May-13 Staff Gauge:
Time (CST):
Channel Width: 1.500

Station	Depth (m)	Width (m)	Area (m^2)	Velocity (m/s) 0.200	0.600	####	Velocity/Ū (m/s) (average)	Q (m^3/s)
1.800	0.140	0.000	0.000		#####		-0.020	0.000
1.750	0.160	0.050	0.008		0.000		0.000	0.000
1.700	0.440	0.100	0.044		0.040		0.040	0.002
1.600	0.480	0.100	0.048		0.140		0.140	0.007
1.500	0.500	0.100	0.050		0.140		0.140	0.007
1.400	0.520	0.100	0.052		0.120		0.120	0.006
1.300	0.520	0.100	0.052		0.230		0.230	0.012
1.200	0.540	0.100	0.054		0.320		0.320	0.017
1.100	0.620	0.100	0.062		0.410		0.410	0.025
1.000	0.620	0.100	0.062		0.410		0.410	0.025
0.900	0.680	0.100	0.068		0.410		0.410	0.028
0.800	0.670	0.100	0.067		0.430		0.430	0.029
0.700	0.640	0.100	0.064		0.450		0.450	0.029
0.600	0.640	0.100	0.064		0.430		0.430	0.028
0.500	0.520	0.100	0.052		0.410		0.410	0.021
0.400	0.500	0.100	0.050		0.430		0.430	0.022
0.300	0.520	0.100	0.052		0.330		0.330	0.017
							Total Flow =	0.275

Date: 24-Jun-13 Staff Gauge: 0.4
Time (CST):
Channel Width: 1.30

Station	Depth (m)	Width (m)	Area (m^2)	Velocity (m/s) 20%	60%	80%	Velocity/Ū (m/s) (average)	Q (m^3/s)
0.30	0.36	0.00	0.000		0.08		0.08	0.0000
0.33	0.36	0.025	0.009		0.10		0.10	0.0009
0.35	0.38	0.050	0.019		0.13		0.13	0.0025
0.40	0.38	0.050	0.019		0.17		0.17	0.0032
0.45	0.40	0.050	0.020		0.18		0.18	0.0036
0.50	0.44	0.050	0.022		0.19		0.19	0.0042
0.55	0.46	0.050	0.023		0.20		0.20	0.0046
0.60	0.46	0.050	0.023		0.19		0.19	0.0044
0.65	0.46	0.050	0.023		0.20		0.20	0.0046
0.70	0.47	0.050	0.024		0.19		0.19	0.0045
0.75	0.47	0.050	0.024		0.18		0.18	0.0042
0.80	0.47	0.050	0.024		0.20		0.20	0.0047
0.85	0.44	0.050	0.022		0.21		0.21	0.0046
0.90	0.44	0.050	0.022		0.19		0.19	0.0042
0.95	0.46	0.050	0.023		0.17		0.17	0.0039
1.00	0.46	0.050	0.023		0.17		0.17	0.0039
1.05	0.42	0.050	0.021		0.16		0.16	0.0034
1.10	0.42	0.050	0.021		0.17		0.17	0.0036
1.15	0.40	0.050	0.020		0.14		0.14	0.0028
1.20	0.34	0.050	0.017		0.11		0.11	0.0019
1.25	0.32	0.050	0.016		0.12		0.12	0.0019
1.30	0.32	0.050	0.016		0.10		0.10	0.0016
1.35	0.32	0.050	0.016		0.10		0.10	0.0016
1.40	0.32	0.050	0.016		0.09		0.09	0.0014
1.45	0.30	0.050	0.015		0.09		0.09	0.0014
1.50	0.28	0.050	0.014		0.09		0.09	0.0013
1.55	0.28	0.050	0.014		0.01		0.01	0.0001
1.60	0.22	0.050	0.011		0.02		0.02	0.0002
							Total Flow =	0.0791

Date: 20-Aug-13 Staff Gauge: 0.28
Time (CST):
Channel Width: 1.20

Station	Depth (m)	Width (m)	Area (m^2)	Velocity (m/s) 20%	60%	80%	Velocity/Ū (m/s) (average)	Q (m^3/s)
4.00	0.26	0.00	0.000		0.02		0.02	0.0000
3.95	0.26	0.050	0.013		0.01		0.01	0.0001
3.90	0.28	0.100	0.028		0.01		0.01	0.0003
3.80	0.28	0.100	0.028		0.01		0.01	0.0003
3.70	0.30	0.100	0.030		0.02		0.02	0.0006
3.60	0.32	0.100	0.032		0.03		0.03	0.0010
3.50	0.38	0.100	0.038		0.02		0.02	0.0008
3.40	0.38	0.100	0.038		0.00		0.00	0.0000
3.30	0.38	0.100	0.038		0.00		0.00	0.0000
3.20	0.28	0.100	0.028		0.02		0.02	0.0006
3.10	0.17	0.100	0.017		0.01		0.01	0.0002
3.00	0.12	0.100	0.012		0.00		0.00	0.0000
2.90	0.10	0.100	0.010		0.00		0.00	0.0000
2.80	0.06	0.100	0.006		0.01		0.01	0.0001
							Total Flow =	0.0038

Date: 13-Nov-13 Staff Gauge: 0.3
Time (CST):
Channel Width: 1.50

Station	Depth (m)	Width (m)	Area (m^2)	Velocity (m/s) 20%	60%	80%	Velocity/Ū (m/s) (average)	Q (m^3/s)
2.60	0.34	0.00	0.000		0.01		0.01	0.0000
2.55	0.34	0.050	0.017		0.01		0.01	0.0002
2.50	0.34	0.100	0.034		0.02		0.02	0.0007
2.40	0.37	0.100	0.037		0.04		0.04	0.0015
2.30	0.44	0.100	0.044		0.10		0.10	0.0044
2.20	0.45	0.100	0.045		0.09		0.09	0.0041
2.10	0.44	0.100	0.044		0.15		0.15	0.0066
2.00	0.44	0.100	0.044		0.09		0.09	0.0040
1.90	0.43	0.100	0.043		0.04		0.04	0.0017
1.80	0.42	0.100	0.042		0.13		0.13	0.0055
1.70	0.38	0.100	0.038		0.02		0.02	0.0008
1.60	0.34	0.100	0.034		0.01		0.01	0.0003
1.50	0.30	0.100	0.030		0.07		0.07	0.0021
1.40	0.26	0.100	0.026		0.05		0.05	0.0013
1.30	0.25	0.100	0.025		0.02		0.02	0.0005
1.20	0.22	0.100	0.022		0.00		0.00	0.0000
1.10	0.20	0.100	0.020		0.00		0.00	0.0000
							Total Flow =	0.0335

Date: 7-Jun-13 Staff Gauge:
Time (CST):
Channel Width: 1.400

Station	Depth (m)	Width (m)	Area (m^2)	Velocity (m/s) 0.200	0.600	0.800	Velocity/Ū (m/s) (average)	Q (m^3/s)
1.000	0.340	0.000	0.000		0.000		0.000	0.000
1.050	0.360	0.050	0.018		0.010		0.010	0.000
1.100	0.360	0.100	0.036		0.030		0.030	0.001
1.200	0.360	0.100	0.036		0.040		0.040	0.001
1.300	0.370	0.100	0.037		0.070		0.070	0.003
1.400	0.380	0.100	0.038		0.060		0.060	0.002
1.500	0.450	0.100	0.045		0.160		0.160	0.007
1.600	0.460	0.100	0.046		0.190		0.190	0.009
1.700	0.540	0.100	0.054		0.180		0.180	0.010
1.800	0.540	0.100	0.054		0.180		0.180	0.010
1.900	0.520	0.100	0.052		0.210		0.210	0.011
2.000	0.490	0.100	0.049		0.240		0.240	0.012
2.100	0.420	0.100	0.042		0.270		0.270	0.011
2.200	0.420	0.100	0.042		0.220		0.220	0.009
2.300	0.380	0.100	0.038		0.200		0.200	0.008
2.400	0.360	0.100	0.036		0.150		0.150	0.005
							Total Flow =	0.099

Date: 17-Jul-13 Staff Gauge: 0.4
Time (CST):
Channel Width: 1.20

Station	Depth (m)	Width (m)	Area (m^2)	Velocity (m/s) 20%	60%	80%	Velocity/Ū (m/s) (average)	Q (m^3/s)
0.40	0.35	0.00	0.000		0.05		0.05	0.0000
0.43	0.35	0.025	0.009		0.05		0.05	0.0004
0.45	0.36	0.050	0.018		0.08		0.08	0.0014
0.50	0.36	0.050	0.018		0.10		0.10	0.0018
0.55	0.36	0.050	0.018		0.10		0.10	0.0018
0.60	0.38	0.050	0.019		0.10		0.10	0.0019
0.65	0.42	0.050	0.021		0.12		0.12	0.0025
0.70	0.43	0.050	0.022		0.10		0.10	0.0022
0.75	0.42	0.050	0.021		0.12		0.12	0.0025
0.80	0.44	0.050	0.022		0.11		0.11	0.0024
0.85	0.44	0.050	0.022		0.11		0.11	0.0024
0.90	0.42	0.050	0.021		0.09		0.09	0.0019
0.95	0.40	0.050	0.020		0.09		0.09	0.0018
1.00	0.38	0.050	0.019		0.09		0.09	0.0017
1.05	0.38	0.050	0.019		0.10		0.10	0.0019
1.10	0.36	0.050	0.018		0.09		0.09	0.0016
1.15	0.34	0.050	0.017		0.09		0.09	0.0015
1.20	0.32	0.050	0.016		0.07		0.07	0.0011
1.25	0.31	0.050	0.016		0.05		0.05	0.0008
1.30	0.32	0.050	0.016		0.06		0.06	0.0010
1.35	0.30	0.050	0.015		0.04		0.04	0.0006
1.40	0.32	0.050	0.016		0.04		0.04	0.0007
1.45	0.30	0.050	0.015		0.02		0.02	0.0003
1.50	0.30	0.050	0.015		0.02		0.02	0.0003
1.55	0.26	0.050	0.013		0.01		0.01	0.0001
1.60	0.26	0.050	0.013		0.00		0.00	0.0000
							Total Flow =	0.0347

Date: 3-Oct-13 Staff Gauge:
Time (CST):
Channel Width: 1.25

Station	Depth (m)	Width (m)	Area (m^2)	Velocity (m/s) 20%	60%	80%	Velocity/Ū (m/s) (average)	Q (m^3/s)
1.85	0.18	0.00	0.000		0.02		0.02	0.0000
1.80	0.18	0.050	0.009		0.01		0.01	0.0001
1.70	0.20	0.100	0.020		0.06		0.06	0.0012
1.60	0.22	0.100	0.022		0.10		0.10	0.0022
1.50	0.28	0.100	0.028		0.08		0.08	0.0022
1.40	0.32	0.100	0.032		0.09		0.09	0.0029
1.30	0.38	0.100	0.038		0.10		0.10	0.0038
1.20	0.50	0.100	0.050		0.09		0.09	0.0045
1.10	0.51	0.100	0.051		0.11		0.11	0.0056
1.00	0.52	0.100	0.052		0.10		0.10	0.0052
0.90	0.46	0.100	0.046		0.12		0.12	0.0055
0.80	0.46	0.100	0.046		0.13		0.13	0.0060
0.70	0.42	0.100	0.042		0.11		0.11	0.0046
0.60	0.39	0.100	0.039		0.11		0.11	0.0043
							Total Flow =	0.0481

Table 3A: TL3 Field Measurements

Date: 24-Jul-12 Staff Gauge:
Time (CST):
Channel Width: 2.600

Station	Depth (m)	Width (m)	Area (m^2)	Velocity (m/s) 0.200	0.600	0.800	Velocity/Ū (m/s) (average)	Q (m^3/s)
3.10	0.00	0.02	0.000		0.00		0.000	0.000
2.90	0.68	0.04	0.027	0.00		0.00	0.000	0.000
2.50	0.76	0.04	0.030	0.00		0.00	0.000	0.000
2.10	0.89	0.04	0.036	0.01		0.01	0.010	0.000
1.70	0.75	0.04	0.030	0.00		0.03	0.015	0.000
1.30	0.61	0.04	0.024	0.00		0.01	0.005	0.000
0.90	0.20	0.04	0.008		0.03		0.030	0.000
0.50	0.02	0.04	0.001		-0.01		-0.010	0.000
0	0.00	0.00	0.000		0.00		0.000	0.000
							Total Flow =	0.001

Date: 8-May-13 Staff Gauge:
Time (CST):
Channel Width: 3.600

Station	Depth (m)	Width (m)	Area (m^2)	Velocity (m/s) 0.200	0.600	0.800	Velocity/Ū (m/s) (average)	Q (m^3/s)
9.800	0.020	0.000	0.000		-0.040		-0.040	0.000
9.700	0.050	0.010	0.001		0.000		0.000	0.000
9.600	0.080	0.020	0.002		0.000		0.000	0.000
9.400	0.080	0.020	0.002		0.030		0.030	0.000
9.200	0.080	0.020	0.002		0.040		0.040	0.000
9.000	0.120	0.020	0.002		0.170		0.170	0.000
8.800	0.240	0.020	0.005		0.300		0.300	0.001
8.600	0.500	0.020	0.010		0.260		0.260	0.003
8.400	1.360	0.020	0.027	0.260		0.850	0.555	0.015
8.200	1.280	0.020	0.026	0.100		0.900	0.500	0.013
8.000	1.240	0.020	0.025	0.330		0.890	0.610	0.015
7.800	1.600	0.020	0.032	0.130		0.300	0.215	0.007
7.600	1.640	0.020	0.033	0.080		0.520	0.300	0.010
7.400	1.380	0.020	0.028	0.350		0.730	0.540	0.000
7.200	1.300	0.020	0.026	0.000		0.090	0.045	0.000
7.000	1.100	0.020	0.022	0.100		0.370	0.235	0.000
6.800	0.320	0.020	0.006		0.470		0.470	0.003
6.600	0.100	0.020	0.002		0.250		0.250	0.001
6.400	0.400	0.020	0.008		0.100		0.100	0.001
6.200	0.010	0.020	0.000		0.030		0.030	0.000
							Total Flow =	0.069

Date: 25-Jun-13 Staff Gauge: 1.2
Time (CST):
Channel Width: 3.20

Station	Depth (m)	Width (m)	Area (m^2)	Velocity (m/s) 20%	60%	80%	Velocity/Ū (m/s) (average)	Q (m^3/s)
0.60	0.080	0.00	0.000		0.00		0.00	0.0000
0.70	0.06	0.100	0.006		0.00		0.00	0.0000
0.80	0.06	0.200	0.012		0.00		0.00	0.0000
1.00	0.08	0.200	0.016		-0.01		-0.01	-0.0002
1.20	0.15	0.200	0.030		0.02		0.02	0.0006
1.40	0.21	0.200	0.042		0.00		0.00	0.0000
1.60	0.26	0.200	0.052		0.01		0.01	0.0005
1.80	0.52	0.200	0.104		-0.01		-0.01	-0.0010
2.00	1.32	0.200	0.264	0.09		0.08	0.00	0.0000
2.20	1.38	0.200	0.276	0.08		0.07	0.00	0.0000
2.40	1.36	0.200	0.272	0.07		0.08	0.00	0.0000
2.60	1.36	0.200	0.272	0.08		0.10	0.00	0.0000
2.80	1.36	0.200	0.272	0.08		0.12	0.00	0.0000
3.00	1.42	0.200	0.284	0.08		0.08	0.00	0.0000
3.20	1.28	0.200	0.256	0.01		0.05	0.00	0.0000
3.40	0.40	0.200	0.080		0.00		0.00	0.0000
3.60	0.22	0.200	0.044		0.00		0.00	0.0000
3.80	0.06	0.200	0.012		0.00		0.00	0.0000
							Total Flow =	-0.0001

Comments
Station was serverly distrubed by a beaver dam that was built around it. Station was downloaded and moved accordingly.

Date: 6-Nov-12 Staff Gauge:
Time (CST):
Channel Width: 2.100

Station	Depth (m)	Width (m)	Area (m^2)	Velocity (m/s) 0.200	0.600	0.800	Velocity/Ū (m/s) (average)	Q (m^3/s)
0.40	0.08	0.00	0.000	0.003			0.003	0.000
0.45	0.12	0.05	0.006	0.003			0.003	0.000
0.50	0.12	0.10	0.012	0.006			0.006	0.000
0.60	0.22	0.10	0.022	0.152			0.152	0.003
0.70	0.44	0.10	0.044	0.021			0.021	0.001
0.80	0.50	0.10	0.050	0.043			0.043	0.002
0.90	0.50	0.10	0.050	0.064			0.064	0.003
1.00	0.54	0.10	0.054	0.034		0.027	0.030	0.002
1.10	0.54	0.10	0.054	0.018		0.034	0.026	0.001
1.20	0.54	0.10	0.054	0.009		0.021	0.015	0.001
1.30	0.54	0.10	0.054	0.021		0.052	0.037	0.002
1.40	0.50	0.10	0.050	0.064			0.064	0.003
1.50	0.50	0.10	0.050	0.073			0.073	0.004
1.60	0.48	0.10	0.048	0.049			0.049	0.000
1.70	0.30	0.10	0.030	0.055			0.055	0.000
1.80	0.44	0.10	0.044	0.055			0.055	0.000
1.90	0.42	0.10	0.042	0.043			0.043	0.000
2.00	0.38	0.10	0.038	0.067			0.067	0.003
2.10	0.32	0.10	0.032	0.058			0.058	0.002
2.20	0.50	0.10	0.050	0.058			0.058	0.003
2.30	0.50	0.10	0.050	0.091			0.091	0.000
2.40	0.50	0.10	0.050	0.040			0.040	0.000
2.50	0.22	0.10	0.022	-0.006			-0.006	0.000
							Total Flow =	0.030

Date: 6-Jun-13 Staff Gauge: 1.200
Time (CST):
Channel Width: 2.100

Station	Depth (m)	Width (m)	Area (m^2)	Velocity (m/s) 0.200	0.600	0.800	Velocity/Ū (m/s) (average)	Q (m^3/s)
3.600	0.020	0.000	0.000		-0.020		-0.020	0.000
3.550	0.040	0.050	0.002		-0.010		-0.010	0.000
3.500	0.060	0.100	0.006		-0.010		-0.010	0.000
3.400	0.100	0.100	0.010		0.020		0.020	0.000
3.300	0.180	0.100	0.018		0.060		0.060	0.001
3.200	0.860	0.100	0.086	0.020		0.060	0.040	0.003
3.100	0.820	0.100	0.082	0.040		0.080	0.060	0.005
3.000	0.820	0.100	0.082	0.030		0.070	0.050	0.004
2.900	0.900	0.100	0.090	0.030		0.090	0.060	0.005
2.800	0.820	0.100	0.082	0.060		0.090	0.075	0.006
2.700	0.800	0.100	0.080	0.060		0.090	0.075	0.006
2.600	0.800	0.100	0.080	0.050		0.100	0.075	0.006
2.500	0.820	0.100	0.082	0.070		0.110	0.090	0.007
2.400	0.820	0.100	0.082	0.060		0.110	0.085	0.000
2.300	0.740	0.100	0.074	0.080		0.110	0.095	0.000
2.200	0.780	0.100	0.078	0.012		0.140	0.076	0.000
2.100	0.780	0.100	0.078	0.120		0.130	0.125	0.000
2.000	0.800	0.100	0.080	0.120		0.130	0.125	0.010
1.900	0.900	0.100	0.090	0.020		0.080	0.050	0.005
1.800	0.840	0.100	0.084	0.020		0.050	0.035	0.003
1.700	0.820	0.100	0.082	0.000		0.010	0.005	0.000
1.600	0.820	0.100	0.082	-0.010		0.030	0.010	0.000
1.500	0.060	0.100	0.006		-0.010		-0.010	0.000
							Total Flow =	0.062

Table 3A: TL3 Field Measurements Continued.

Date: 20-Aug-13 Staff Gauge:
Time (CST):
Channel Width: 2.80

Station	Depth (m)	Width (m)	Area (m^2)	Velocity (m/s) 20%	60%	80%	Velocity/Ū (m/s) (average)	Q (m^3/s)
1.00	0.32	0.00	0.000		0.00		0.00	0.0000
1.10	0.32	0.100	0.032		0.00		0.00	0.0000
1.20	0.32	0.200	0.064		0.00		0.00	0.0000
1.40	0.84	0.200	0.168	0.00		-0.01	-0.01	-0.0008
1.60	1.42	0.200	0.284	0.00		-0.01	-0.01	-0.0014
1.80	1.43	0.200	0.286	0.00		-0.02	-0.01	-0.0029
2.00	1.44	0.200	0.288	-0.01		0.00	-0.01	-0.0014
2.20	1.36	0.200	0.272	-0.01		0.00	-0.01	-0.0014
2.40	1.46	0.200	0.292	0.00		0.01	0.01	0.0015
2.60	1.46	0.200	0.292	0.00		0.01	0.01	0.0015
2.80	0.50	0.200	0.100		0.01		0.01	0.0010
3.00	0.26	0.200	0.052		-0.01		-0.01	-0.0005
3.20	0.26	0.200	0.052		0.00		0.00	0.0000
3.40	0.24	0.200	0.048		0.00		0.00	0.0000
3.60	0.20	0.200	0.040		0.00		0.00	0.0000
3.80	0.24	0.200	0.048		0.00		0.00	0.0000
							Total Flow =	-0.0045

Comments
Station flow is negative in nature except for deepest component of channel. This is probably due to the beaver dam blocking the area downstream and back drifting to site. Area is flooded approx. 8m across channel at about 20 cm of depth.

Date: 7-Nov-13 Staff Gauge: 1.5
Time (CST):
Channel Width: 1.80

Station	Depth (m)	Width (m)	Area (m^2)	Velocity (m/s) 20%	60%	80%	Velocity/Ū (m/s) (average)	Q (m^3/s)
2.60	1.38	0.20	0.276	0.00		0.00	0.00	0.0000
2.70	1.35	0.200	0.270	0.00		0.00	0.00	0.0000
2.40	1.40	0.200	0.280	0.00		0.00	0.00	0.0000
2.20	1.48	0.20	0.296	0.00		0.00	0.00	0.0000
2.00	1.50	0.200	0.300	0.00		0.00	0.00	0.0000
1.80	1.52	0.200	0.304	0.00		0.01	0.01	0.0015
1.60	1.50	0.20	0.300	0.00		0.01	0.01	0.0015
1.40	1.52	0.200	0.304	0.00		0.00	0.00	0.0000
1.20	1.50	0.200	0.300	0.00		0.00	0.00	0.0000
1.00	1.44	0.20	0.288	0.00		0.00	0.00	0.0000
0.80	1.40	0.200	0.280	0.00		0.00	0.00	0.0000
							Total Flow =	0.0030

Date: 17-Jul-13 Staff Gauge: 1.2
Time (CST):
Channel Width: 2.20

Station	Depth (m)	Width (m)	Area (m^2)	Velocity (m/s) 20%	60%	80%	Velocity/Ū (m/s) (average)	Q (m^3/s)
0.50	0.22	0.00	0.000		0.00		0.00	0.0000
0.55	0.22	0.050	0.011		0.00		0.00	0.0000
0.60	0.28	0.100	0.028		0.00		0.00	0.0000
0.70	0.46	0.100	0.046		0.00		0.00	0.0000
0.80	1.46	0.100	0.146	0.02		0.01	0.02	0.0022
0.90	1.50	0.100	0.150	0.00		0.00	0.00	0.0000
1.00	1.48	0.100	0.148	0.00		0.01	0.01	0.0007
1.10	1.42	0.100	0.142	0.01		0.01	0.01	0.0014
1.20	1.42	0.100	0.142	0.00		0.03	0.02	0.0021
1.30	1.30	0.100	0.130	0.01		0.06	0.04	0.0046
1.40	1.30	0.100	0.130	0.00		0.04	0.02	0.0026
1.50	1.30	0.100	0.130	0.00		0.03	0.02	0.0020
1.60	1.31	0.100	0.131	0.02		0.03	0.03	0.0000
1.70	1.38	0.100	0.138	0.00		0.01	0.01	0.0000
1.80	1.40	0.100	0.140	0.01		0.02	0.02	0.0000
1.90	1.38	0.100	0.138	0.01		0.03	0.02	0.0028
2.00	1.42	0.100	0.142	0.02		0.03	0.03	0.0036
2.10	1.46	0.100	0.146	0.00		0.04	0.02	0.0029
2.20	1.28	0.100	0.128	0.03		0.03	0.03	0.0000
2.30	1.36	0.100	0.136	0.03		0.02	0.03	0.0000
2.40	1.34	0.100	0.134	0.02		0.01	0.02	0.0000
2.50	0.38	0.100	0.038		0.01		0.01	0.0004
2.60	0.34	0.100	0.034		0.00		0.00	0.0000
2.70	0.30	0.100	0.030		0.01		0.01	0.0003
							Total Flow =	0.0255

Comments
Station was in good condition. Due to beaver dams shore is flooded, main channel remains.

Date: 3-Oct-13 Staff Gauge: 1.15
Time (CST):
Channel Width:

Station	Depth (m)	Width (m)	Area (m^2)	Velocity (m/s) 20%	60%	80%	Velocity/Ū (m/s) (average)	Q (m^3/s)
2.00	0.18	0.00	0.000		0.00		0.00	0.0000
2.10	0.18	0.100	0.018		0.00		0.00	0.0000
2.20	0.18	0.200	0.036		0.00		0.00	0.0000
2.40	0.24	0.200	0.048		0.02		0.02	0.0010
2.60	1.10	0.200	0.220	0.01		0.01	0.01	0.0022
2.80	1.33	0.200	0.266	0.01		0.01	0.01	0.0027
3.00	1.40	0.200	0.280	0.00		0.00	0.00	0.0000
3.20	1.42	0.200	0.284	0.00		0.01	0.01	0.0014
3.40	1.42	0.200	0.284	0.01		0.01	0.01	0.0028
3.60	1.42	0.200	0.284	0.02		0.01	0.02	0.0043
3.80	1.42	0.200	0.284	0.03		0.02	0.03	0.0071
4.00	0.38	0.200	0.076		0.00		0.00	0.0000
4.20	0.33	0.200	0.066		0.00		0.00	0.0000
							Total Flow =	0.0214

Comments

Table 4A: HS4 Field Measurements

Date: 7-Nov-12 | Staff Gauge:
Time (CST):
Channel Width: 1.400

Station	Depth (m)	Width (m)	Area (m^2)	Velocity (m/s) 0.200	0.600	0.800	Velocity/Ū (m/s) (average)	Q (m^3/s)
2.000	0.140	0.000	0.000		0.020		0.020	0.000
1.950	0.140	0.050	0.007		0.030		0.030	0.000
1.900	0.140	0.100	0.014		0.000		0.000	0.000
1.800	0.140	0.100	0.014		0.080		0.080	0.001
1.700	0.140	0.100	0.014		0.130		0.130	0.002
1.600	0.130	0.100	0.013		0.100		0.100	0.001
1.500	0.120	0.100	0.012		0.240		0.240	0.003
1.400	0.160	0.100	0.016		0.330		0.330	0.005
1.300	0.200	0.100	0.020		0.200		0.200	0.004
1.200	0.200	0.100	0.020		0.230		0.230	0.005
1.100	0.180	0.100	0.018		0.260		0.260	0.005
1.000	0.170	0.100	0.017		0.240		0.240	0.004
0.900	0.100	0.100	0.010		0.100		0.100	0.001
0.800	0.090	0.100	0.009		0.160		0.160	0.001
0.700	0.020	0.100	0.002		0.000		0.000	0.000
0.600	0.010	0.100	0.001		0.000		0.000	0.000
							Total Flow =	0.032

Date: 7-Jun-13 | Staff Gauge:
Time (CST):
Channel Width: 1.400

Station	Depth (m)	Width (m)	Area (m^2)	Velocity (m/s) 0.200	0.600	0.800	Velocity/Ū (m/s) (average)	Q (m^3/s)
0.700	0.340	0.000	0.000		-0.080		-0.080	0.000
0.750	0.300	0.050	0.015		-0.030		-0.030	0.000
0.800	0.320	0.100	0.032		-0.070		-0.070	-0.002
0.900	0.400	0.100	0.040		-0.060		-0.060	-0.002
1.000	0.360	0.100	0.036		-0.050		-0.050	-0.002
1.100	0.340	0.100	0.034		-0.040		-0.040	-0.001
1.200	0.340	0.100	0.034		0.080		0.080	0.003
1.300	0.200	0.100	0.020		0.250		0.250	0.005
1.400	0.380	0.100	0.038		0.060		0.060	0.002
1.500	0.460	0.100	0.046		0.070		0.070	0.003
1.600	0.460	0.100	0.046		0.100		0.100	0.005
1.700	0.350	0.100	0.035		0.000		0.000	0.000
1.800	0.300	0.100	0.030		0.040		0.040	0.001
1.900	0.300	0.100	0.030		0.030		0.030	0.001
2.000	0.260	0.100	0.026		0.160		0.160	0.004
2.100	0.190	0.100	0.019		0.230		0.230	0.004
							Total Flow =	0.020

Date: 24-Jun-13 | Staff Gauge:
Time (CST):
Channel Width: 0.95

Station	Depth (m)	Width (m)	Area (m^2)	Velocity (m/s) 20%	60%	80%	Velocity/Ū (m/s) (average)	Q (m^3/s)
2.90	0.46	0.00	0.000		-0.03		-0.03	0.0000
2.88	0.46	0.025	0.012		0.01		0.01	0.0001
2.85	0.46	0.050	0.023		-0.08		-0.08	-0.0018
2.80	0.46	0.050	0.023		-0.08		-0.08	-0.0018
2.75	0.46	0.050	0.023		-0.08		-0.08	-0.0018
2.70	0.44	0.050	0.022		0.13		0.13	0.0029
2.65	0.46	0.050	0.023		0.33		0.33	0.0076
2.60	0.46	0.050	0.023		0.31		0.31	0.0071
2.55	0.40	0.050	0.020		0.29		0.29	0.0058
2.50	0.38	0.050	0.019		0.19		0.19	0.0036
2.45	0.38	0.050	0.019		0.13		0.13	0.0025
2.40	0.32	0.050	0.016		0.06		0.06	0.0010
2.35	0.30	0.050	0.015		0.04		0.04	0.0006
2.30	0.30	0.050	0.015		0.04		0.04	0.0006
2.25	0.29	0.050	0.015		0.04		0.04	0.0006
2.20	0.29	0.050	0.015		0.07		0.07	0.0010
2.15	0.28	0.050	0.014		0.08		0.08	0.0011
2.10	0.26	0.050	0.013		0.10		0.10	0.0013
2.05	0.21	0.050	0.011		0.16		0.16	0.0017
2.00	0.14	0.050	0.007		0.11		0.11	0.0008
1.95	0.10	0.050	0.005		0.11		0.11	0.0006
							Total Flow =	0.0332

Date: 24-Jul-12 | Staff Gauge:
Time (CST):
Channel Width: 1.150

Station	Depth (m)	Width (m)	Area (m^2)	Velocity (m/s) 0.200	0.600	0.800	Velocity/Ū (m/s) (average)	Q (m^3/s)
0.40	0.00	0.00	0.000		0.00		0.000	0.000
0.43	0.02	0.03	0.001		0.00		0.000	0.000
0.45	0.04	0.05	0.002		-0.02		-0.020	0.000
0.50	0.17	0.05	0.009		0.04		0.040	0.000
0.55	0.08	0.05	0.004		-0.01		-0.010	0.000
0.60	0.10	0.05	0.005		0.01		0.010	0.000
0.65	0.13	0.05	0.007		0.00		0.000	0.000
0.70	0.14	0.05	0.007		0.00		0.000	0.000
0.75	0.20	0.05	0.010		0.02		0.020	0.000
0.80	0.24	0.05	0.012		0.03		0.030	0.000
0.85	0.26	0.05	0.013		0.03		0.030	0.000
0.90	0.25	0.05	0.013		0.03		0.030	0.000
0.95	0.31	0.05	0.016		0.01		0.010	0.000
1.00	0.19	0.05	0.010		0.08		0.080	0.001
1.05	0.18	0.05	0.009		0.07		0.070	0.001
1.10	0.29	0.05	0.015		0.06		0.060	0.001
1.15	0.19	0.05	0.010		0.00		0.000	0.000
1.20	0.26	0.05	0.013		0.00		0.000	0.000
1.25	0.22	0.05	0.011		0.00		0.000	0.000
1.30	0.22	0.05	0.011		0.05		0.050	0.001
1.35	0.18	0.05	0.009		0.02		0.020	0.000
1.40	0.28	0.05	0.014		0.01		0.010	0.000
1.45	0.28	0.05	0.014		0.00		0.000	0.000
1.50	0.26	0.05	0.013		-0.01		-0.010	0.000
1.55	0.26	0.05	0.013		0.00		0.000	0.000
							Total Flow =	0.005

Date: 8-May-13 | Staff Gauge:
Time (CST):
Channel Width: 1.550

Station	Depth (m)	Width (m)	Area (m^2)	Velocity (m/s) 0.200	0.600	0.800	Velocity/Ū (m/s) (average)	Q (m^3/s)
2.850	0.880	0.000	0.000	0.330		0.470	0.400	0.000
2.800	0.910	0.050	0.046	0.250		0.620	0.435	0.000
2.700	0.840	0.100	0.084	0.370		0.650	0.510	0.000
2.600	0.940	0.100	0.094	0.450		0.600	0.525	0.049
2.500	0.940	0.100	0.094	0.140		0.500	0.320	0.030
2.400	0.980	0.100	0.098	0.080		0.440	0.260	0.025
2.300	1.000	0.100	0.100	0.050		0.350	0.200	0.020
2.200	0.980	0.100	0.098	0.030		0.500	0.265	0.026
2.100	0.980	0.100	0.098	0.050		0.400	0.225	0.022
2.000	0.980	0.100	0.098	-0.040		0.320	0.140	0.014
1.900	0.940	0.100	0.094	-0.030		-0.030	-0.030	-0.003
1.800	0.880	0.100	0.088	0.040		0.050	0.045	0.004
1.700	0.800	0.100	0.080	-0.040		0.000	-0.020	-0.002
1.600	0.780	0.100	0.078	0.040		-0.020	0.010	0.000
1.500	0.760	0.100	0.076	0.000		-0.050	-0.025	0.000
1.400	0.760	0.100	0.076	0.020		0.010	0.015	0.000
1.300	0.240	0.100	0.024		0.150		0.150	0.004
1.200	0.200	0.100	0.020		0.140		0.140	0.003
1.100	0.100	0.100	0.010		0.000		0.000	0.000
							Total Flow =	0.193

Table 4A: HS4 Field Measurements Continued

Date: 20-Aug-13 Staff Gauge:
Time (CST):
Channel Width: 1.05

Station	Depth (m)	Width (m)	Area (m^2)	Velocity (m/s) 20%	60%	80%	Velocity/Ū (m/s) (average)	Q (m^3/s)
0.70	0.42	0.00	0.000		0.03		0.03	0.0000
0.73	0.42	0.025	0.011		0.03		0.03	0.0003
0.75	0.41	0.050	0.021		0.04		0.04	0.0008
0.80	0.41	0.050	0.021		0.04		0.04	0.0008
0.85	0.40	0.050	0.020		0.13		0.13	0.0026
0.90	0.41	0.050	0.021		0.13		0.13	0.0027
0.95	0.43	0.050	0.022		0.13		0.13	0.0028
1.00	0.42	0.050	0.021		0.17		0.17	0.0036
1.05	0.44	0.050	0.022		0.09		0.09	0.0020
1.10	0.42	0.050	0.021		0.14		0.14	0.0029
1.15	0.41	0.050	0.021		0.07		0.07	0.0014
1.20	0.40	0.050	0.020		0.09		0.09	0.0018
1.25	0.38	0.050	0.019		0.03		0.03	0.0006
1.30	0.36	0.050	0.018		0.04		0.04	0.0007
1.35	0.30	0.050	0.015		0.05		0.05	0.0008
1.40	0.29	0.050	0.015		0.03		0.03	0.0004
1.45	0.26	0.050	0.013		0.03		0.03	0.0004
1.50	0.24	0.050	0.012		0.04		0.04	0.0005
1.55	0.22	0.050	0.011		0.03		0.03	0.0003
1.60	0.14	0.050	0.007		0.04		0.04	0.0003
1.65	0.11	0.050	0.006		0.03		0.03	0.0002
1.70	0.12	0.050	0.006		0.01		0.01	0.0001
1.75	0.10	0.050	0.005		0.01		0.01	0.0001
							Total Flow =	0.0260

Date: 7-Nov-13 Staff Gauge: 0.45
Time (CST):
Channel Width: 1.80

Station	Depth (m)	Width (m)	Area (m^2)	Velocity (m/s) 20%	60%	80%	Velocity/Ū (m/s) (average)	Q (m^3/s)
0.80	0.14	0.00	0.000		0.01		0.01	0.0000
0.85	0.14	0.050	0.007		0.01		0.01	0.0001
0.90	0.14	0.100	0.014		0.04		0.04	0.0006
1.00	0.16	0.100	0.016		0.07		0.07	0.0011
1.10	0.15	0.100	0.015		0.17		0.17	0.0026
1.20	0.19	0.100	0.019		0.09		0.09	0.0017
1.30	0.24	0.100	0.024		0.13		0.13	0.0031
1.40	0.26	0.100	0.026		0.20		0.20	0.0052
1.50	0.22	0.100	0.022		0.19		0.19	0.0042
1.60	0.22	0.100	0.022		0.15		0.15	0.0033
1.70	0.18	0.100	0.018		0.12		0.12	0.0022
1.80	0.18	0.100	0.018		0.08		0.08	0.0014
1.90	0.15	0.100	0.015		0.04		0.04	0.0006
2.00	0.12	0.100	0.012		0.10		0.10	0.0012
2.10	0.08	0.100	0.008		0.03		0.03	0.0002
2.20	0.08	0.100	0.008		0.05		0.05	0.0004
2.30	0.10	0.100	0.010		0.02		0.02	0.0002
2.40	0.15	0.100	0.015		0.01		0.01	0.0002
2.50	0.08	0.100	0.008		0.01		0.01	0.0001
2.60	0.07	0.100	0.007		0.01		0.01	0.0001
							Total Flow =	0.0284

Date: 17-Jul-13 Staff Gauge: 0.42
Time (CST):
Channel Width: 1.10

Station	Depth (m)	Width (m)	Area (m^2)	Velocity (m/s) 20%	60%	80%	Velocity/Ū (m/s) (average)	Q (m^3/s)
0.55	0.44	0.00	0.000		0.01		0.01	0.0000
0.58	0.44	0.025	0.011		0.01		0.01	0.0001
0.60	0.44	0.050	0.022		0.02		0.02	0.0004
0.65	0.44	0.050	0.022		0.08		0.08	0.0018
0.70	0.46	0.050	0.023		0.18		0.18	0.0041
0.75	0.45	0.050	0.023		0.24		0.24	0.0054
0.80	0.46	0.050	0.023		0.20		0.20	0.0046
0.85	0.40	0.050	0.020		0.11		0.11	0.0022
0.90	0.41	0.050	0.021		0.13		0.13	0.0027
0.95	0.46	0.050	0.023		0.10		0.10	0.0023
1.00	0.44	0.050	0.022		0.10		0.10	0.0022
1.05	0.42	0.050	0.021		0.13		0.13	0.0027
1.10	0.42	0.050	0.021		0.10		0.10	0.0021
1.15	0.38	0.050	0.019		0.07		0.07	0.0013
1.20	0.34	0.050	0.017		0.05		0.05	0.0009
1.25	0.34	0.050	0.017		0.04		0.04	0.0007
1.30	0.34	0.050	0.017		0.01		0.01	0.0002
1.35	0.34	0.050	0.017		0.04		0.04	0.0007
1.40	0.30	0.050	0.015		0.06		0.06	0.0009
1.45	0.18	0.050	0.009		0.05		0.05	0.0005
1.50	0.18	0.050	0.009		0.10		0.10	0.0009
1.55	0.16	0.050	0.008		0.05		0.05	0.0004
1.60	0.14	0.050	0.007		0.03		0.03	0.0002
1.65	0.12	0.050	0.006		0.03		0.03	0.0002
							Total Flow =	0.0374

Date: 3-Oct-13 Staff Gauge:
Time (CST):
Channel Width: 1.40

Station	Depth (m)	Width (m)	Area (m^2)	Velocity (m/s) 20%	60%	80%	Velocity/Ū (m/s) (average)	Q (m^3/s)
0.50	0.26	0.00	0.000		0.03		0.03	0.0000
0.55	0.26	0.050	0.013		0.01		0.01	0.0001
0.60	0.26	0.100	0.026		0.05		0.05	0.0013
0.70	0.30	0.100	0.030		0.13		0.13	0.0039
0.80	0.30	0.100	0.030		0.19		0.19	0.0057
0.90	0.30	0.100	0.030		0.19		0.19	0.0057
1.00	0.28	0.100	0.028		0.19		0.19	0.0053
1.10	0.26	0.100	0.026		0.18		0.18	0.0047
1.20	0.32	0.100	0.032		0.15		0.15	0.0048
1.30	0.44	0.100	0.044		0.08		0.08	0.0035
1.40	0.44	0.100	0.044		0.08		0.08	0.0035
1.50	0.36	0.100	0.036		0.05		0.05	0.0018
1.60	0.30	0.100	0.030		0.04		0.04	0.0012
1.70	0.15	0.100	0.015		0.02		0.02	0.0003
1.80	0.12	0.100	0.012		0.00		0.00	0.0000
1.90	0.03	0.100	0.003		0.00		0.00	0.0000
							Total Flow =	0.0419

Table 5A: HS5 Field Measurements

Date: 11-Jul-12 Staff Gauge: 0.190
Time (CST):
Channel Width: 0.850

Station	Depth (m)	Width (m)	Area (m^2)	Velocity (m/s) 0.200	0.600	0.800	Velocity/Ū (m/s) (average)	Q (m^3/s)
2.250	0.030	0.000	0.000		0.000		0.000	0.000
2.230	0.060	0.030	0.002		0.030		0.030	0.000
2.200	0.120	0.050	0.006		0.000		0.000	0.000
2.150	0.160	0.050	0.008		0.010		0.010	0.000
2.100	0.140	0.050	0.007		0.030		0.030	0.000
2.050	0.180	0.050	0.009		0.020		0.020	0.000
2.000	0.200	0.050	0.010		0.020		0.020	0.000
1.950	0.200	0.050	0.010		0.050		0.050	0.001
1.900	0.200	0.050	0.010		0.040		0.040	0.000
1.850	0.200	0.050	0.010		0.050		0.050	0.001
1.800	0.200	0.050	0.010		0.040		0.040	0.000
1.750	0.200	0.050	0.010		0.030		0.030	0.000
1.700	0.200	0.050	0.010		0.020		0.020	0.000
1.650	0.200	0.050	0.010		0.030		0.030	0.000
1.600	0.180	0.050	0.009		0.030		0.030	0.000
1.550	0.160	0.050	0.008		0.010		0.010	0.000
1.500	0.140	0.050	0.007		0.040		0.040	0.000
1.450	0.120	0.050	0.006		-0.010		-0.010	0.000
1.400	0.040	0.050	0.002		-0.010		-0.010	0.000
							Total Flow =	0.004

Date: 15-Aug-12 Staff Gauge:
Time (CST):
Channel Width: 0.730

Station	Depth (m)	Width (m)	Area (m^2)	Velocity (m/s) 0.200	0.600	0.800	Velocity/Ū (m/s) (average)	Q (m^3/s)
1.28	0.00	0.00	0.000		0.000		0.000	0.000
1.25	0.80	0.03	0.024		-0.020		-0.020	0.000
1.20	0.10	0.05	0.005		-0.020		-0.020	0.000
1.15	0.60	0.05	0.030		-0.010		-0.010	0.000
1.10	0.20	0.05	0.010		0.000		0.000	0.000
1.05	0.10	0.05	0.005		0.000		0.000	0.000
1.00	0.10	0.05	0.005		0.010		0.010	0.000
0.95	0.10	0.05	0.005		0.020		0.020	0.000
0.90	0.10	0.05	0.005		0.010		0.010	0.000
0.85	0.11	0.05	0.006		0.000		0.000	0.000
0.80	0.10	0.05	0.005		0.000		0.000	0.000
0.75	0.10	0.05	0.005		0.000		0.000	0.000
0.70	0.10	0.05	0.005		-0.010		-0.010	0.000
0.65	0.90	0.05	0.045		-0.020		-0.020	-0.001
0.60	0.90	0.05	0.045		0.000		0.000	0.000
0.55	0.00	0.05	0.000		0.000		0.000	0.000
							Total Flow =	-0.002

Date: 8-May-13 Staff Gauge:
Time (CST):
Channel Width: 0.900

Station	Depth (m)	Width (m)	Area (m^2)	Velocity (m/s) 0.200	0.600	0.800	Velocity/Ū (m/s) (average)	Q (m^3/s)
2.500	0.100	0.000	0.000		0.010		0.010	0.000
2.480	0.500	0.030	0.015		0.040		0.040	0.001
2.450	0.020	0.050	0.001		0.090		0.090	0.000
2.400	0.050	0.050	0.003		0.030		0.030	0.000
2.350	0.080	0.050	0.004		0.040		0.040	0.000
2.300	0.080	0.050	0.004		0.030		0.030	0.000
2.250	0.080	0.050	0.004		0.070		0.070	0.000
2.200	0.080	0.050	0.004		0.060		0.060	0.000
2.150	0.060	0.050	0.003		0.080		0.080	0.000
2.100	0.080	0.050	0.004		0.140		0.140	0.001
2.050	0.100	0.050	0.005		0.150		0.150	0.001
2.000	0.014	0.050	0.001		0.090		0.090	0.000
1.950	0.140	0.050	0.007		0.070		0.070	0.000
1.900	0.140	0.050	0.007		0.070		0.070	0.000
1.850	0.140	0.050	0.007		0.110		0.110	0.001
1.800	0.120	0.050	0.006		0.080		0.080	0.000
1.750	0.100	0.050	0.005		0.020		0.020	0.000
1.700	0.080	0.050	0.004		0.100		0.100	0.000
1.650	0.080	0.050	0.004		0.050		0.050	0.000
1.600	0.020	0.050	0.001		0.140		0.140	0.000
							Total Flow =	0.006

Date: 7-Jun-13 Staff Gauge:
Time (CST):
Channel Width: 0.640

Station	Depth (m)	Width (m)	Area (m^2)	Velocity (m/s) 0.200	0.600	0.800	Velocity/Ū (m/s) (average)	Q (m^3/s)
0.480	0.200	0.000	0.000		0.020		0.020	0.000
0.490	0.200	0.010	0.002		0.020		0.020	0.000
0.500	0.200	0.020	0.004		0.020		0.020	0.000
0.520	0.200	0.020	0.004		0.010		0.010	0.000
0.540	0.200	0.020	0.004		0.010		0.010	0.000
0.560	0.190	0.020	0.004		0.000		0.000	0.000
0.580	0.190	0.020	0.004		0.000		0.000	0.000
0.600	0.180	0.020	0.004		-0.010		-0.010	0.000
0.620	0.170	0.020	0.003		0.010		0.010	0.000
0.640	0.180	0.020	0.004		0.000		0.000	0.000
0.660	0.160	0.020	0.003		0.000		0.000	0.000
0.680	0.140	0.020	0.003		0.000		0.000	0.000
0.700	0.140	0.020	0.003		0.000		0.000	0.000
0.720	0.140	0.020	0.003		0.010		0.010	0.000
0.740	0.140	0.020	0.003		0.010		0.010	0.000
0.760	0.130	0.020	0.003		0.000		0.000	0.000
0.780	0.120	0.020	0.002		0.000		0.000	0.000
0.800	0.160	0.020	0.003		0.000		0.000	0.000
0.820	0.160	0.020	0.003		0.020		0.020	0.000
0.840	0.160	0.020	0.003		0.020		0.020	0.000
0.860	0.170	0.020	0.003		0.040		0.040	0.000
0.880	0.170	0.020	0.003		0.030		0.030	0.000
0.900	0.160	0.020	0.003		0.060		0.060	0.000
0.920	0.100	0.020	0.002		0.070		0.070	0.000
0.940	0.100	0.020	0.002		0.070		0.070	0.000
0.960	0.100	0.020	0.002		0.060		0.060	0.000
0.980	0.110	0.020	0.002		0.070		0.070	0.000
1.000	0.080	0.020	0.002		0.080		0.080	0.000
1.020	0.100	0.020	0.002		0.070		0.070	0.000
1.040	0.100	0.020	0.002		0.080		0.080	0.000
1.060	0.020	0.020	0.000		0.000		0.000	0.000
1.080	0.020	0.020	0.000		0.040		0.040	0.000
1.100	0.010	0.020	0.000		0.070		0.070	0.000
1.120	0.010	0.020	0.000		0.010		0.010	0.000
							Total Flow =	0.002

Table 5A: HS5 Field Measurements Continued.

Date: 25-Jun-13 Staff Gauge: 0.15
Time (CST):
Channel Width: 0.60

Station	Depth (m)	Width (m)	Area (m^2)	Velocity (m/s) 20%	60%	80%	Velocity/Ū (m/s) (average)	Q (m^3/s)
0.30	0.16	0.00	0.000		0.02		0.02	0.0000
0.32	0.14	0.020	0.003		0.02		0.02	0.0001
0.34	0.14	0.040	0.006		0.01		0.01	0.0001
0.38	0.12	0.040	0.005		0.03		0.03	0.0001
0.42	0.10	0.040	0.004		0.01		0.01	0.0000
0.46	0.14	0.040	0.006		0.01		0.01	0.0001
0.50	0.14	0.040	0.006		0.01		0.01	0.0001
0.54	0.14	0.040	0.006		0.01		0.01	0.0001
0.58	0.12	0.040	0.005		0.01		0.01	0.0000
0.62	0.14	0.040	0.006		0.03		0.03	0.0002
0.66	0.14	0.040	0.006		0.04		0.04	0.0002
0.70	0.14	0.040	0.006		0.01		0.01	0.0001
0.74	0.12	0.040	0.005		0.01		0.01	0.0000
0.78	0.12	0.040	0.005		0.04		0.04	0.0002
0.82	0.12	0.040	0.005		0.15		0.15	0.0007
0.86	0.12	0.040	0.005		0.07		0.07	0.0003
0.90	0.12	0.040	0.005		0.07		0.07	0.0003
							Total Flow =	0.0026

Date: 20-Aug-13 Staff Gauge:
Time (CST):
Channel Width: 0.36

Station	Depth (m)	Width (m)	Area (m^2)	Velocity (m/s) 20%	60%	80%	Velocity/Ū (m/s) (average)	Q (m^3/s)
1.02	0.11	0.00	0.000		0.02		0.02	0.0000
1.03	0.11	0.010	0.001		0.01		0.01	0.0000
1.04	0.11	0.020	0.002		0.01		0.01	0.0000
1.06	0.12	0.020	0.002		0.01		0.01	0.0000
1.08	0.14	0.020	0.003		0.02		0.02	0.0001
1.10	0.14	0.020	0.003		0.00		0.00	0.0000
1.12	0.12	0.020	0.002		0.01		0.01	0.0000
1.14	0.11	0.020	0.002		0.01		0.01	0.0000
1.16	0.12	0.020	0.002		0.04		0.04	0.0001
1.18	0.11	0.020	0.002		0.03		0.03	0.0001
1.20	0.11	0.020	0.002		0.03		0.03	0.0001
1.22	0.11	0.020	0.002		0.01		0.01	0.0000
1.24	0.11	0.020	0.002		0.02		0.02	0.0000
1.26	0.10	0.020	0.002		0.01		0.01	0.0000
1.28	0.09	0.020	0.002		0.01		0.01	0.0000
1.30	0.09	0.020	0.002		0.01		0.01	0.0000
1.32	0.11	0.020	0.002		0.00		0.00	0.0000
1.34	0.10	0.020	0.002		0.04		0.04	0.0001
1.36	0.10	0.020	0.002		0.03		0.03	0.0001
1.38	0.10	0.020	0.002		0.04		0.04	0.0001
							Total Flow =	0.0007

Date: 13-Nov-13 Staff Gauge: 0.18
Time (CST):
Channel Width:

Station	Depth (m)	Width (m)	Area (m^2)	Velocity (m/s) 20%	60%	80%	Velocity/Ū (m/s) (average)	Q (m^3/s)
2.50	0.09	0.00	0.000		0.02		0.02	0.0000
2.53	0.09	0.025	0.002		0.02		0.02	0.0000
2.55	0.16	0.050	0.008		0.03		0.03	0.0002
2.60	0.16	0.050	0.008		0.05		0.05	0.0004
2.65	0.16	0.050	0.008		0.06		0.06	0.0005
2.70	0.16	0.050	0.008		0.04		0.04	0.0003
2.75	0.16	0.050	0.008		0.02		0.02	0.0002
2.80	0.17	0.050	0.009		0.01		0.01	0.0001
2.85	0.16	0.050	0.008		0.02		0.02	0.0002
2.90	0.16	0.050	0.008		0.00		0.00	0.0000
2.95	0.16	0.050	0.008		0.00		0.00	0.0000
3.00	0.15	0.050	0.008		0.00		0.00	0.0000
3.05	0.14	0.050	0.007		0.00		0.00	0.0000
3.10	0.12	0.050	0.006		0.00		0.00	0.0000
3.15	0.11	0.050	0.006		0.00		0.00	0.0000
3.20	0.10	0.050	0.005		0.00		0.00	0.0000
							Total Flow =	0.0019

Date: 17-Jul-13 Staff Gauge: 0.15
Time (CST):
Channel Width: 0.36

Station	Depth (m)	Width (m)	Area (m^2)	Velocity (m/s) 20%	60%	80%	Velocity/Ū (m/s) (average)	Q (m^3/s)
0.94	0.12	0.00	0.000		0.02		0.02	0.0000
0.95	0.12	0.010	0.001		0.01		0.01	0.0000
0.96	0.12	0.020	0.002		0.01		0.01	0.0000
0.98	0.13	0.020	0.003		0.01		0.01	0.0000
1.00	0.14	0.020	0.003		0.02		0.02	0.0001
1.02	0.14	0.020	0.003		0.01		0.01	0.0000
1.04	0.12	0.020	0.002		0.01		0.01	0.0000
1.06	0.12	0.020	0.002		0.01		0.01	0.0000
1.08	0.12	0.020	0.002		0.03		0.03	0.0001
1.10	0.10	0.020	0.002		0.04		0.04	0.0001
1.12	0.10	0.020	0.002		0.02		0.02	0.0000
1.14	0.11	0.020	0.002		0.02		0.02	0.0000
1.16	0.11	0.020	0.002		0.02		0.02	0.0000
1.18	0.11	0.020	0.002		0.01		0.01	0.0000
1.20	0.10	0.020	0.002		0.01		0.01	0.0000
1.22	0.10	0.020	0.002		0.01		0.01	0.0000
1.24	0.11	0.020	0.002		0.01		0.01	0.0000
1.26	0.11	0.020	0.002		0.03		0.03	0.0001
1.28	0.11	0.020	0.002		0.03		0.03	0.0001
1.30	0.10	0.020	0.002		0.04		0.04	0.0001
							Total Flow =	0.0008

Date: 3-Oct-13 Staff Gauge: 0.22
Time (CST):
Channel Width: 0.95

Station	Depth (m)	Width (m)	Area (m^2)	Velocity (m/s) 20%	60%	80%	Velocity/Ū (m/s) (average)	Q (m^3/s)
0.60	0.12	0.00	0.000		0.00		0.00	0.0000
0.63	0.12	0.025	0.003		0.00		0.00	0.0000
0.65	0.16	0.050	0.008		0.00		0.00	0.0000
0.70	0.17	0.050	0.009		0.00		0.00	0.0000
0.75	0.17	0.050	0.009		0.00		0.00	0.0000
0.80	0.18	0.050	0.009		0.01		0.01	0.0001
0.85	0.20	0.050	0.010		0.03		0.03	0.0003
0.90	0.22	0.050	0.011		0.03		0.03	0.0003
0.95	0.22	0.050	0.011		0.01		0.01	0.0001
1.00	0.24	0.050	0.012		0.04		0.04	0.0005
1.05	0.24	0.050	0.012		0.06		0.06	0.0007
1.10	0.24	0.050	0.012		0.05		0.05	0.0006
1.15	0.22	0.050	0.011		0.01		0.01	0.0001
1.20	0.22	0.050	0.011		0.03		0.03	0.0003
1.25	0.20	0.050	0.010		0.00		0.00	0.0000
1.30	0.12	0.050	0.006		0.00		0.00	0.0000
1.35	0.12	0.050	0.006		0.00		0.00	0.0000
1.40	0.12	0.050	0.006		0.00		0.00	0.0000
1.45	0.12	0.050	0.006		0.00		0.00	0.0000
1.50	0.12	0.050	0.006		0.00		0.00	0.0000
1.55	0.08	0.050	0.004		0.00		0.00	0.0000
							Total Flow =	0.0031

Table 6A: HS6 Field Measurements

Date: 6-Nov-12 Staff Gauge: 0.530
Time (CST):
Channel Width: 0.570

Station	Depth (m)	Width (m)	Area (m^2)	Velocity (m/s) 0.200	0.600	0.800	Velocity/Ū (m/s) (average)	Q (m^3/s)
0.84	0.06	0.00	0.000		0.061		0.061	0.000
0.86	0.06	0.02	0.001		0.06096		0.061	0.000
0.87	0.06	0.03	0.002		0.057912		0.058	0.000
0.90	0.05	0.03	0.002		0.118872		0.119	0.000
0.93	0.05	0.03	0.002		0.088392		0.088	0.000
0.96	0.05	0.03	0.002		0.079248		0.079	0.000
0.99	0.05	0.03	0.002		0.039624		0.040	0.000
1.02	0.05	0.03	0.002		0.036576		0.037	0.000
1.05	0.05	0.03	0.002		0.009144		0.009	0.000
1.08	0.05	0.03	0.002		0.009144		0.009	0.000
1.11	0.05	0.03	0.002		0.009144		0.009	0.000
1.14	0.05	0.03	0.002		0.003048		0.003	0.000
1.17	0.05	0.03	0.002		0.009144		0.009	0.000
1.20	0.05	0.03	0.002		0.009144		0.009	0.000
1.23	0.05	0.03	0.002		0.051816		0.052	0.000
1.26	0.05	0.03	0.002		0.042672		0.043	0.000
1.29	0.05	0.03	0.002		0.079248		0.079	0.000
1.32	0.05	0.03	0.002		0.097536		0.098	0.000
1.35	0.05	0.03	0.002		0.070104		0.070	0.000
1.38	0.05	0.03	0.002		0.021336		0.021	0.000
1.41	0.05	0.03	0.002		-0.010		-0.010	0.000
							Total Flow =	0.001

Date: 24-Jul-12 Staff Gauge:
Time (CST):
Channel Width: 3.500

Station	Depth (m)	Width (m)	Area (m^2)	Velocity (m/s) 0.200	0.600	0.800	Velocity/Ū (m/s) (average)	Q (m^3/s)
4.100	0.000	0.000	0.000		0.00		0.000	0.000
4.000	0.260	0.200	0.052		0.02		0.020	0.001
3.800	0.300	0.200	0.060		0.01		0.010	0.001
3.600	0.400	0.200	0.080		0.00		0.000	0.000
3.400	0.440	0.200	0.088		0.02		0.020	0.002
3.200	0.490	0.200	0.098		0.01		0.010	0.001
3.000	0.520	0.200	0.104	0.02	0.02	0.01	0.02	0.002
2.800	0.580	0.200	0.116	0.01	0.01	0.01	0.01	0.001
2.600	0.630	0.200	0.126	0.00	0.01	0.02	0.01	0.001
2.400	0.640	0.200	0.128	-0.01	0.01	0.01	0.01	0.001
2.200	0.660	0.200	0.132	0.01	0.01	0.02	0.01	0.002
2.000	0.630	0.200	0.126	0.01	0.02	0.01	0.02	0.002
1.800	0.580	0.200	0.116	0.05	0.03	0.04	0.04	0.004
1.600	0.500	0.200	0.100		0.02		0.020	0.002
1.400	0.340	0.200	0.068		0.03		0.030	0.002
1.200	0.240	0.200	0.048		0.02		0.020	0.001
1.000	0.040	0.200	0.008		0.00		0.000	0.000
0.800	0.120	0.200	0.024		0.01		0.010	0.000
0.700	0.060	0.200	0.012		0.00		0.000	0.000
0.600	0.000	0.200	0.000		0.00		0.000	0.000
							Total Flow =	0.022

Date: 7-May-13 Staff Gauge: 0.770
Time (CST):
Channel Width: 1.350

Station	Depth (m)	Width (m)	Area (m^2)	Velocity (m/s) 0.200	0.600	0.800	Velocity/Ū (m/s) (average)	Q (m^3/s)
1.100	0.120	0.000	0.000		0.260		0.260	0.000
1.125	0.140	0.025	0.004		0.220		0.220	0.001
1.150	0.180	0.050	0.009		0.240		0.240	0.002
1.200	0.180	0.050	0.009		0.270		0.270	0.002
1.250	0.190	0.050	0.010		0.280		0.280	0.003
1.300	0.200	0.050	0.010		0.270		0.270	0.003
1.350	0.220	0.050	0.011		0.280		0.280	0.003
1.400	0.200	0.050	0.010		0.310		0.310	0.003
1.450	0.200	0.050	0.010		0.290		0.290	0.003
1.500	0.200	0.050	0.010		0.260		0.260	0.003
1.550	0.180	0.050	0.009		0.130		0.130	0.001
1.600	0.160	0.050	0.008		0.060		0.060	0.000
1.650	0.160	0.050	0.008		0.010		0.010	0.000
1.700	0.160	0.050	0.008		0.050		0.050	0.000
1.750	0.160	0.050	0.008		0.080		0.080	0.001
1.800	0.140	0.050	0.007		0.090		0.090	0.001
1.850	0.140	0.050	0.007		0.070		0.070	0.000
1.900	0.120	0.050	0.006		0.050		0.050	0.000
1.950	0.130	0.050	0.007		0.060		0.060	0.000
2.000	0.240	0.050	0.012		0.070		0.070	0.001
2.050	0.120	0.050	0.006		0.040		0.040	0.000
2.100	0.140	0.050	0.007		0.050		0.050	0.000
1.150	0.160	0.050	0.008		0.070		0.070	0.001
2.200	0.160	0.050	0.008		0.010		0.010	0.000
2.250	0.180	0.050	0.009		0.040		0.040	0.000
2.300	0.160	0.050	0.008		0.040		0.040	0.000
2.350	0.150	0.050	0.008		0.050		0.050	0.000
2.400	0.120	0.050	0.006		0.040		0.040	0.000
2.450	0.120	0.050	0.006		-0.010		-0.010	0.000
							Total Flow =	0.030

Date: 6-Jun-13 Staff Gauge:
Time (CST):
Channel Width: 0.440

Station	Depth (m)	Width (m)	Area (m^2)	Velocity (m/s) 0.200	0.600	0.800	Velocity/Ū (m/s) (average)	Q (m^3/s)
1.100	0.010	0.000	0.000		0.000		0.000	0.000
1.090	0.010	0.010	0.000		0.000		0.000	0.000
1.080	0.010	0.020	0.000		0.000		0.000	0.000
1.060	0.010	0.020	0.000		0.000		0.000	0.000
1.040	0.010	0.020	0.000		0.000		0.000	0.000
1.020	0.010	0.020	0.000		0.000		0.000	0.000
1.000	0.020	0.020	0.000		0.100		0.100	0.000
0.980	0.020	0.020	0.000		0.150		0.150	0.000
0.960	0.020	0.020	0.000		0.120		0.120	0.000
0.940	0.020	0.020	0.000		0.150		0.150	0.000
0.920	0.020	0.020	0.000		0.160		0.160	0.000
0.900	0.020	0.020	0.000		0.190		0.190	0.000
0.880	0.010	0.020	0.000		0.210		0.210	0.000
0.860	0.020	0.020	0.000		0.190		0.190	0.000
0.840	0.010	0.020	0.000		0.190		0.190	0.000
0.820	0.020	0.020	0.000		0.200		0.200	0.000
0.800	0.030	0.020	0.001		0.220		0.220	0.000
0.780	0.030	0.020	0.001		0.230		0.230	0.000
0.760	0.040	0.020	0.001		0.210		0.210	0.000
0.740	0.040	0.020	0.001		0.210		0.210	0.000
0.720	0.040	0.020	0.001		0.210		0.210	0.000
0.700	0.030	0.020	0.001		0.210		0.210	0.000
0.680	0.040	0.020	0.001		0.080		0.080	0.000
0.660	0.020	0.020	0.000		0.050		0.050	0.000
							Total Flow =	0.002

Table 6A: HS6 Field Measurements Continued.

Date: 24-Jun-13 Staff Gauge: 0.5
Time (CST):
Channel Width: 0.46

Station	Depth (m)	Width (m)	Area (m^2)	Velocity (m/s) 20%	60%	80%	Velocity/Ū (m/s) (average)	Q (m^3/s)
1.22	0.02	0.00	0.000		-0.01		-0.01	0.0000
1.23	0.02	0.010	0.000		0.00		0.00	0.0000
1.24	0.02	0.020	0.000		0.04		0.04	0.0000
1.26	0.02	0.020	0.000		0.04		0.04	0.0000
1.28	0.06	0.020	0.001		0.07		0.07	0.0001
1.30	0.06	0.020	0.001		0.01		0.01	0.0000
1.32	0.05	0.020	0.001		0.05		0.05	0.0001
1.34	0.06	0.020	0.001		0.09		0.09	0.0001
1.36	0.06	0.020	0.001		0.06		0.06	0.0001
1.38	0.06	0.020	0.001		0.11		0.11	0.0001
1.40	0.07	0.020	0.001		0.24		0.24	0.0003
1.42	0.07	0.020	0.001		0.21		0.21	0.0003
1.44	0.09	0.020	0.002		0.30		0.30	0.0005
1.46	0.09	0.020	0.002		0.25		0.25	0.0005
1.48	0.10	0.020	0.002		0.22		0.22	0.0004
1.50	0.08	0.020	0.002		0.15		0.15	0.0002
1.52	0.05	0.020	0.001		0.10		0.10	0.0001
1.54	0.05	0.020	0.001		0.07		0.07	0.0001
1.56	0.05	0.020	0.001		0.04		0.04	0.0000
1.58	0.04	0.020	0.001		0.04		0.04	0.0000
1.60	0.04	0.020	0.001		0.04		0.04	0.0000
1.62	0.04	0.020	0.001		0.01		0.01	0.0000
1.64	0.02	0.020	0.000		0.02		0.02	0.0000
1.66	0.02	0.020	0.000		0.02		0.02	0.0000
1.68	0.02	0.020	0.000		0.02		0.02	0.0000
							Total Flow =	0.0031

Date: 17-Jul-13 Staff Gauge: 0.36
Time (CST):
Channel Width: 0.40

Station	Depth (m)	Width (m)	Area (m^2)	Velocity (m/s) 20%	60%	80%	Velocity/Ū (m/s) (average)	Q (m^3/s)
0.60	0.02	0.00	0.000		0.00		0.00	0.0000
0.61	0.02	0.010	0.000		0.01		0.01	0.0000
0.62	0.03	0.020	0.001		0.01		0.01	0.0000
0.64	0.04	0.020	0.001		0.01		0.01	0.0000
0.66	0.05	0.020	0.001		0.01		0.01	0.0000
0.68	0.04	0.020	0.001		0.02		0.02	0.0000
0.70	0.06	0.020	0.001		0.07		0.07	0.0001
0.72	0.05	0.020	0.001		0.11		0.11	0.0001
0.74	0.05	0.020	0.001		0.19		0.19	0.0002
0.76	0.06	0.020	0.001		0.24		0.24	0.0003
0.78	0.06	0.020	0.001		0.21		0.21	0.0003
0.80	0.06	0.020	0.001		0.20		0.20	0.0002
0.82	0.06	0.020	0.001		0.17		0.17	0.0002
0.84	0.04	0.020	0.001		0.10		0.10	0.0001
0.86	0.03	0.020	0.001		0.10		0.10	0.0001
0.88	0.02	0.020	0.000		0.07		0.07	0.0000
0.90	0.02	0.020	0.000		0.09		0.09	0.0000
0.92	0.02	0.020	0.000		0.05		0.05	0.0000
0.94	0.02	0.020	0.000		0.05		0.05	0.0000
0.96	0.02	0.020	0.000		0.04		0.04	0.0000
0.98	0.01	0.020	0.000		0.01		0.01	0.0000
1.00	0.01	0.020	0.000		0.00		0.00	0.0000
							Total Flow =	0.0017

Date: 20-Aug-13 Staff Gauge: 0.48
Time (CST):
Channel Width: 0.34

Station	Depth (m)	Width (m)	Area (m^2)	Velocity (m/s) 20%	60%	80%	Velocity/Ū (m/s) (average)	Q (m^3/s)
1.30	0.02	0.00	0.000		0.02		0.02	0.0000
1.31	0.02	0.010	0.000		0.02		0.02	0.0000
1.32	0.04	0.020	0.001		0.01		0.01	0.0000
1.34	0.06	0.020	0.001		0.06		0.06	0.0001
1.36	0.06	0.020	0.001		0.14		0.14	0.0002
1.38	0.06	0.020	0.001		0.13		0.13	0.0002
1.40	0.06	0.020	0.001		0.13		0.13	0.0002
1.42	0.06	0.020	0.001		0.15		0.15	0.0002
1.44	0.06	0.020	0.001		0.12		0.12	0.0001
1.46	0.05	0.020	0.001		0.09		0.09	0.0001
1.48	0.04	0.020	0.001		0.10		0.10	0.0001
1.50	0.05	0.020	0.001		0.14		0.14	0.0001
1.52	0.05	0.020	0.001		0.10		0.10	0.0001
1.54	0.04	0.020	0.001		0.06		0.06	0.0000
1.56	0.04	0.020	0.001		0.09		0.09	0.0001
1.58	0.02	0.020	0.000		-0.01		-0.01	0.0000
1.60	0.02	0.020	0.000		0.04		0.04	0.0000
1.62	0.02	0.020	0.000		-0.01		-0.01	0.0000
1.64	0.01	0.020	0.000		0.00		0.00	0.0000
							Total Flow =	0.0014

Date: 3-Oct-13 Staff Gauge: 0.4
Time (CST):
Channel Width: 0.50

Station	Depth (m)	Width (m)	Area (m^2)	Velocity (m/s) 20%	60%	80%	Velocity/Ū (m/s) (average)	Q (m^3/s)
0.65	0.01	0.00	0.000		0.00		0.00	0.0000
0.68	0.01	0.025	0.000		0.00		0.00	0.0000
0.70	0.01	0.050	0.001		0.04		0.04	0.0000
0.75	0.02	0.050	0.001		0.02		0.02	0.0000
0.80	0.03	0.050	0.002		0.12		0.12	0.0002
0.85	0.04	0.050	0.002		0.10		0.10	0.0002
0.90	0.05	0.050	0.003		0.10		0.10	0.0003
0.95	0.06	0.050	0.003		0.07		0.07	0.0002
1.00	0.04	0.050	0.002		0.08		0.08	0.0002
1.05	0.03	0.050	0.002		0.04		0.04	0.0001
1.10	0.02	0.050	0.001		0.06		0.06	0.0001
1.15	0.01	0.050	0.001		0.00		0.00	0.0000
							Total Flow =	0.0012

Date: 7-Nov-13 Staff Gauge: 0.45
Time (CST):
Channel Width: 0.40

Station	Depth (m)	Width (m)	Area (m^2)	Velocity (m/s) 20%	60%	80%	Velocity/Ū (m/s) (average)	Q (m^3/s)
0.90	0.04	0.00	0.000		0.05		0.05	0.0000
0.88	0.04	0.025	0.001		0.08		0.08	0.0001
0.85	0.04	0.050	0.002		0.14		0.14	0.0003
0.80	0.06	0.050	0.003		0.25		0.25	0.0008
0.75	0.06	0.050	0.003		0.32		0.32	0.0010
0.70	0.08	0.050	0.004		0.30		0.30	0.0012
0.65	0.08	0.050	0.004		0.18		0.18	0.0007
0.60	0.08	0.050	0.004		0.00		0.00	0.0000
0.55	0.06	0.050	0.003		-0.02		-0.02	-0.0001
0.50	0.02	0.050	0.001				0.00	0.0000
							Total Flow =	0.0039

Table 7A: HS7 Field Measurements

Date: 7-Nov-12 Staff Gauge:
Time (CST):
Channel Width: 1.800
HS7

Station	Depth (m)	Width (m)	Area (m²)	Velocity (m/s) 0.200	0.600	0.800	Velocity/Ū (m/s) (average)	Q (m³/s)
2.450	0.050	0.000	0.000		0.027		0.027	0.000
2.400	0.100	0.050	0.005		-0.021		-0.021	0.000
2.350	0.120	0.100	0.012		0.006		0.006	0.000
2.250	0.160	0.100	0.016		0.043		0.043	0.001
2.150	0.180	0.100	0.018		0.104		0.104	0.002
2.050	0.200	0.100	0.020		0.104		0.104	0.002
1.950	0.230	0.100	0.023		0.210		0.210	0.005
1.850	0.240	0.100	0.024		0.192		0.192	0.005
1.750	0.220	0.100	0.022		0.207		0.207	0.005
1.650	0.180	0.100	0.018		0.238		0.238	0.004
1.550	0.180	0.100	0.018		0.247		0.247	0.004
1.450	0.180	0.100	0.018		0.265		0.265	0.005
1.350	0.180	0.100	0.018		0.198		0.198	0.004
1.250	0.180	0.100	0.018		0.152		0.152	0.003
1.150	0.160	0.100	0.016		0.210		0.210	0.003
1.050	0.140	0.100	0.014		0.125		0.125	0.002
0.950	0.100	0.100	0.010		0.183		0.183	0.002
0.850	0.040	0.100	0.004		0.155		0.155	0.001
0.750	0.020	0.100	0.002		0.070		0.070	0.000
0.650	0.000	0.100	0.000		0.000		0.000	0.000
							Total Flow =	0.046

Date: 7-Jun-13 Staff Gauge:
Time (CST):
Channel Width: 2.000

Station	Depth (m)	Width (m)	Area (m²)	Velocity (m/s) 0.200	0.600	0.800	Velocity/Ū (m/s) (average)	Q (m³/s)
1.400	0.020	0.000	0.000		-0.010		-0.010	0.000
1.450	0.020	0.050	0.001		0.000		0.000	0.000
1.500	0.040	0.100	0.004		0.010		0.010	0.000
1.600	0.060	0.100	0.006		0.000		0.000	0.000
1.700	0.080	0.100	0.008		-0.020		-0.020	0.000
1.800	0.100	0.100	0.010		-0.010		-0.010	0.000
1.900	0.140	0.100	0.014		0.060		0.060	0.001
2.000	0.200	0.100	0.020		0.160		0.160	0.003
2.100	0.220	0.100	0.022		0.220		0.220	0.005
2.200	0.280	0.100	0.028		0.250		0.250	0.007
2.300	0.280	0.100	0.028		0.270		0.270	0.008
2.400	0.320	0.100	0.032		0.270		0.270	0.009
2.500	0.380	0.100	0.038		0.280		0.280	0.011
2.600	0.380	0.100	0.038		0.280		0.280	0.011
2.700	0.390	0.100	0.039		0.260		0.260	0.010
2.800	0.400	0.100	0.040		0.280		0.280	0.011
2.900	0.360	0.100	0.036		0.270		0.270	0.010
3.000	0.380	0.100	0.038		0.220		0.220	0.008
3.100	0.400	0.100	0.040		0.160		0.160	0.006
3.200	0.280	0.100	0.028		0.230		0.230	0.006
3.300	0.200	0.100	0.020		0.260		0.260	0.005
3.400	0.100	0.100	0.010		0.030		0.030	0.000
							Total Flow =	0.111

Date: 24-Jun-13 Staff Gauge: 0.24
Time (CST):
Channel Width: 1.85

Station	Depth (m)	Width (m)	Area (m²)	Velocity (m/s) 20%	60%	80%	Velocity/Ū (m/s) (average)	Q (m³/s)
0.65	0.02	0.00	0.000		-0.02		-0.02	0.0000
0.70	0.03	0.050	0.002		0.00		0.00	0.0000
0.80	0.04	0.100	0.004		0.01		0.01	0.0000
0.90	0.10	0.100	0.010		0.07		0.07	0.0007
1.00	0.13	0.100	0.013		0.05		0.05	0.0007
1.10	0.14	0.100	0.014		0.14		0.14	0.0020
1.20	0.14	0.100	0.014		0.17		0.17	0.0024
1.30	0.15	0.100	0.015		0.21		0.21	0.0032
1.40	0.18	0.100	0.018		0.20		0.20	0.0036
1.50	0.21	0.100	0.021		0.21		0.21	0.0044
1.60	0.21	0.100	0.021		0.24		0.24	0.0050
1.70	0.21	0.100	0.021		0.27		0.27	0.0057
1.80	0.22	0.100	0.022		0.27		0.27	0.0059
1.90	0.22	0.100	0.022		0.23		0.23	0.0051
2.00	0.20	0.100	0.020		0.21		0.21	0.0042
2.10	0.18	0.100	0.018		0.19		0.19	0.0034
2.20	0.18	0.100	0.018		0.19		0.19	0.0034
2.30	0.16	0.100	0.016		0.18		0.18	0.0029
2.40	0.14	0.100	0.014		0.06		0.06	0.0008
2.50	0.08	0.100	0.008		0.01		0.01	0.0001
							Total Flow =	0.0534

Date: 20-Aug-13 Staff Gauge:
Time (CST):
Channel Width: 1.35

Station	Depth (m)	Width (m)	Area (m²)	Velocity (m/s) 20%	60%	80%	Velocity/Ū (m/s) (average)	Q (m³/s)
2.25	0.02	0.00	0.000		0.00		0.00	0.0000
2.23	0.02	0.025	0.001		0.00		0.00	0.0000
2.20	0.04	0.050	0.002		0.01		0.01	0.0000
2.15	0.06	0.050	0.003		0.01		0.01	0.0000
2.10	0.08	0.050	0.004		0.04		0.04	0.0002
2.05	0.08	0.050	0.004		0.11		0.11	0.0004
2.00	0.08	0.050	0.004		0.05		0.05	0.0002
1.95	0.09	0.050	0.005		0.13		0.13	0.0006
1.90	0.10	0.050	0.005		0.09		0.09	0.0005
1.85	0.11	0.050	0.006		0.10		0.10	0.0006
1.80	0.14	0.050	0.007		0.09		0.09	0.0006
1.75	0.14	0.050	0.007		0.10		0.10	0.0007
1.70	0.15	0.050	0.008		0.13		0.13	0.0010
1.65	0.15	0.050	0.008		0.11		0.11	0.0008
1.60	0.16	0.050	0.008		0.09		0.09	0.0007
1.55	0.16	0.050	0.008		0.10		0.10	0.0008
1.50	0.16	0.050	0.008		0.11		0.11	0.0009
1.45	0.17	0.050	0.009		0.12		0.12	0.0010
1.40	0.18	0.050	0.009		0.13		0.13	0.0012
1.35	0.18	0.050	0.009		0.09		0.09	0.0008
1.30	0.16	0.050	0.008		0.13		0.13	0.0010
1.25	0.13	0.050	0.007		0.15		0.15	0.0010
1.20	0.13	0.050	0.007		0.13		0.13	0.0008
1.15	0.12	0.050	0.006		0.10		0.10	0.0006
1.10	0.11	0.050	0.006		0.14		0.14	0.0008
1.05	0.10	0.050	0.005		0.09		0.09	0.0005
1.00	0.10	0.050	0.005		0.07		0.07	0.0004
0.95	0.06	0.050	0.003		0.07		0.07	0.0002
0.90	0.04	0.050	0.002		0.01		0.01	0.0000
							Total Flow =	0.0162

Date: 13-Nov-13 Staff Gauge: 0.25
Time (CST):
Channel Width: 1.80

Station	Depth (m)	Width (m)	Area (m²)	Velocity (m/s) 20%	60%	80%	Velocity/Ū (m/s) (average)	Q (m³/s)
2.40	0.02	0.00	0.000		0.00		0.00	0.0000
2.35	0.04	0.050	0.002		0.00		0.00	0.0000
2.30	0.10	0.100	0.010		0.10		0.10	0.0010
2.20	0.12	0.100	0.012		0.10		0.10	0.0012
2.10	0.12	0.100	0.012		0.12		0.12	0.0014
2.00	0.15	0.100	0.015		0.16		0.16	0.0024
1.90	0.15	0.100	0.015		0.18		0.18	0.0027
1.80	0.16	0.100	0.016		0.17		0.17	0.0027
1.70	0.18	0.100	0.018		0.24		0.24	0.0043
1.60	0.19	0.100	0.019		0.26		0.26	0.0049
1.50	0.20	0.100	0.020		0.24		0.24	0.0048
1.40	0.20	0.100	0.020		0.24		0.24	0.0048
1.30	0.18	0.100	0.018		0.23		0.23	0.0041
1.20	0.20	0.100	0.020		27.00		27.00	0.5400
1.10	0.20	0.100	0.020		21.00		21.00	0.4200
1.00	0.20	0.100	0.020		0.06		0.06	0.0012
0.90	0.16	0.100	0.016		0.07		0.07	0.0011
0.80	0.14	0.100	0.014		0.06		0.06	0.0008
0.70	0.14	0.100	0.014		0.08		0.08	0.0011
0.60	0.10	0.100	0.010		0.00		0.00	0.0000
							Total Flow =	0.9987

Date: 24-Jul-12 Staff Gauge:
Time (CST):
Channel Width: 1.650

Station	Depth (m)	Width (m)	Area (m²)	Velocity (m/s) 0.200	0.600	0.800	Velocity/Ū (m/s) (average)	Q (m³/s)
0.85	0.00	0.05	0.000		0.000		0.000	0.000
0.90	0.02	0.10	0.002		0.000		0.000	0.000
1.00	0.01	0.10	0.001		0.030		0.030	0.000
1.10	0.08	0.10	0.008		0.190		0.190	0.002
1.20	0.12	0.10	0.012		0.170		0.170	0.002
1.30	0.13	0.10	0.013		0.230		0.230	0.003
1.40	0.14	0.10	0.014		0.270		0.270	0.004
1.50	0.15	0.10	0.015		0.260		0.260	0.004
1.60	0.14	0.10	0.014		0.250		0.250	0.004
1.70	0.14	0.10	0.014		0.240		0.240	0.003
1.80	0.13	0.10	0.013		0.210		0.210	0.003
1.90	0.12	0.10	0.012		0.220		0.220	0.003
2.00	0.16	0.10	0.016		0.220		0.220	0.004
2.10	0.17	0.10	0.017		0.120		0.120	0.002
2.20	0.18	0.10	0.018		0.120		0.120	0.002
2.30	0.17	0.10	0.017		0.130		0.130	0.002
2.40	2.00	0.10	0.200		-0.010		-0.010	-0.002
2.50	0.00	0.10	0.000		0.000		0.000	0.000
							Total Flow =	0.034

Date: 8-May-13 Staff Gauge:
Time (CST):
Channel Width: 2.700

Station	Depth (m)	Width (m)	Area (m²)	Velocity (m/s) 0.200	0.600	0.800	Velocity/Ū (m/s) (average)	Q (m³/s)
5.300	1.400	0.000	0.000	0.160		0.010	0.085	0.000
5.200	0.880	0.100	0.088	0.120		0.080	0.100	0.000
5.000	0.880	0.200	0.176	0.350		0.030	0.190	0.000
4.800	0.880	0.200	0.176	0.220		0.420	0.320	0.056
4.600	0.880	0.200	0.176	0.130		0.320	0.225	0.040
4.400	0.900	0.200	0.180	0.290		0.450	0.370	0.067
4.200	0.960	0.200	0.192	0.310		0.340	0.325	0.062
4.000	1.200	0.200	0.240	0.300		0.460	0.380	0.091
3.800	1.080	0.200	0.216	0.190		0.430	0.310	0.067
3.600	1.080	0.200	0.216	0.100		0.360	0.230	0.050
3.400	0.580	0.200	0.116		0.190		0.190	0.022
3.200	0.520	0.200	0.104		0.040		0.040	0.004
3.000	0.260	0.200	0.052		0.010		0.010	0.001
2.800	0.100	0.200	0.020		0.030		0.030	0.001
2.600	0.030	0.200	0.006		0.040		0.040	0.000
							Total Flow =	0.460

Date: 17-Jul-13 Staff Gauge: 0.22
Time (CST):
Channel Width: 1.60

Station	Depth (m)	Width (m)	Area (m²)	Velocity (m/s) 20%	60%	80%	Velocity/Ū (m/s) (average)	Q (m³/s)
1.30	0.02	0.00	0.000		0.00		0.00	0.0000
1.35	0.05	0.050	0.003		0.01		0.01	0.0000
1.40	0.06	0.100	0.006		0.01		0.01	0.0001
1.50	0.08	0.100	0.008		0.04		0.04	0.0003
1.60	0.09	0.100	0.009		0.17		0.17	0.0015
1.70	0.10	0.100	0.010		0.21		0.21	0.0021
1.80	0.10	0.100	0.010		0.27		0.27	0.0027
1.90	0.10	0.100	0.010		0.19		0.19	0.0019
2.00	0.11	0.100	0.011		0.19		0.19	0.0021
2.10	0.12	0.100	0.012		0.12		0.12	0.0014
2.20	0.14	0.100	0.014		0.21		0.21	0.0029
2.30	0.17	0.100	0.017		0.21		0.21	0.0036
2.40	0.17	0.100	0.017		0.20		0.20	0.0034
2.50	0.12	0.100	0.012		0.01		0.01	0.0001
2.60	0.13	0.100	0.013		0.12		0.12	0.0016
2.70	0.15	0.100	0.015		0.09		0.09	0.0014
2.80	0.10	0.100	0.010		0.05		0.05	0.0005
2.90	0.08	0.100	0.008		0.09		0.09	0.0007
							Total Flow =	0.0263

Date: 3-Oct-13 Staff Gauge: 0.3
Time (CST):
Channel Width: 1.80

Station	Depth (m)	Width (m)	Area (m²)	Velocity (m/s) 20%	60%	80%	Velocity/Ū (m/s) (average)	Q (m³/s)
1.40	0.01	0.00	0.000		0.02		0.00	0.0000
1.45	0.03	0.050	0.002		0.02		0.00	0.0000
1.50	0.10	0.100	0.010		0.03		0.01	0.0001
1.60	0.12	0.100	0.012		0.08		0.01	0.0001
1.70	0.16	0.100	0.016		0.07		0.02	0.0003
1.80	0.19	0.100	0.019		0.11		0.02	0.0004
1.90	0.20	0.100	0.020		0.10		0.02	0.0004
2.00	0.22	0.100	0.022		0.13		0.02	0.0005
2.10	0.26	0.100	0.026		0.19		0.03	0.0007
2.20	0.26	0.100	0.026		0.17		0.03	0.0007
2.30	0.26	0.100	0.026		0.21		0.03	0.0007
2.40	0.30	0.100	0.030		0.22		0.03	0.0009
2.50	0.28	0.100	0.028		0.22		0.03	0.0062
2.60	0.28	0.100	0.028		0.20		0.03	0.0056
2.70	0.28	0.100	0.028		0.20		0.03	0.0056
2.80	0.26	0.100	0.026		0.19		0.03	0.0007
2.90	0.22	0.100	0.022		0.17		0.02	0.0005
3.00	0.20	0.100	0.020		0.11		0.02	0.0004
3.10	0.16	0.100	0.016		0.10		0.02	0.0016
3.20	0.06	0.100	0.006		0.00		0.01	0.0000
							Total Flow =	0.0252

APPENDIX B

Summary of TMA Average Daily Flows

Table B1: TL1A Discharge (L/s)

Date	Discharge (L/s)	Date	Discharge (L/s)	Date	Discharge (L/s)	Date	Discharge (L/s)	Date	Discharge (L/s)	Date	Discharge (L/s)	Date	Discharge (L/s)	Date	Discharge (L/s)	Date	Discharge (L/s)
3/5/2012	7.64	4/24/2012	2.72	6/13/2012	47.82	8/2/2012	55.12	9/21/2012	26.45	9-Jun-13	22.37	29-Jul-13	54.67	17-Sep-13	42.20	6-Nov-13	27.98
3/6/2012	39.55	4/25/2012	2.66	6/14/2012	25.01	8/3/2012	49.02	9/22/2012	29.70	10-Jun-13	39.40	30-Jul-13	40.39	18-Sep-13	37.18	7-Nov-13	27.20
3/7/2012	31.56	4/26/2012	2.47	6/15/2012	14.49	8/4/2012	49.22	9/23/2012	26.02	11-Jun-13	78.88	31-Jul-13	36.27	19-Sep-13	43.16		
3/8/2012	7.99	4/27/2012	1.98	6/16/2012	9.43	8/5/2012	45.05	9/24/2012	24.84	12-Jun-13	54.59	1-Aug-13	31.62	20-Sep-13	40.45		
3/9/2012	0.59	4/28/2012	1.63	6/17/2012	7.69	8/6/2012	40.84	9/25/2012	23.29	13-Jun-13	40.87	2-Aug-13	27.75	21-Sep-13	41.52		
3/10/2012	22.69	4/29/2012	1.42	6/18/2012	19.68	8/7/2012	39.82	9/26/2012	23.39	14-Jun-13	29.85	3-Aug-13	26.02	22-Sep-13	32.89		
3/11/2012	19.26	4/30/2012	1.40	6/19/2012	50.92	8/8/2012	37.97	9/27/2012	22.73	15-Jun-13	29.27	4-Aug-13	24.17	23-Sep-13	31.44		
3/12/2012	173.26	5/1/2012	1.10	6/20/2012	36.58	8/9/2012	34.94	9/28/2012	22.69	16-Jun-13	36.03	5-Aug-13	22.82	24-Sep-13	30.50		
3/13/2012	148.00	5/2/2012	0.98	6/21/2012	30.39	8/10/2012	33.50	9/29/2012	22.00	17-Jun-13	30.06	6-Aug-13	23.09	25-Sep-13	29.15		
3/14/2012	105.80	5/3/2012	0.83	6/22/2012	17.87	8/11/2012	32.28	9/30/2012	21.95	18-Jun-13	22.11	7-Aug-13	20.66	26-Sep-13	28.11		
3/15/2012	41.89	5/4/2012	0.70	6/23/2012	10.80	8/12/2012	33.09	10/1/2012	22.22	19-Jun-13	18.04	8-Aug-13	21.10	27-Sep-13	27.59		
3/16/2012	78.91	5/5/2012	0.66	6/24/2012	8.15	8/13/2012	32.44	10/2/2012	21.44	20-Jun-13	15.52	9-Aug-13	20.94	28-Sep-13	35.20		
3/17/2012	112.64	5/6/2012	0.65	6/25/2012	3.79	8/14/2012	30.13	10/3/2012	21.77	21-Jun-13	14.34	10-Aug-13	19.03	29-Sep-13	44.51		
3/18/2012	117.25	5/7/2012	1.42	6/26/2012	2.69	8/15/2012	34.30	10/4/2012	27.18	22-Jun-13	13.45	11-Aug-13	18.47	30-Sep-13	42.22		
3/19/2012	147.89	5/8/2012	1.40	6/27/2012	1.78	8/16/2012	40.61	10/5/2012	43.26	23-Jun-13	14.61	12-Aug-13	20.37	1-Oct-13	40.34		
3/20/2012	138.63	5/9/2012	1.32	6/28/2012	1.43	8/17/2012	35.96	10/6/2012	44.30	24-Jun-13	15.91	13-Aug-13	18.89	2-Oct-13	35.52		
3/21/2012	90.05	5/10/2012	1.02	6/29/2012	1.01	8/18/2012	36.32	10/7/2012	51.23	25-Jun-13	13.51	14-Aug-13	18.14	3-Oct-13	32.42		
3/22/2012	29.02	5/11/2012	0.95	6/30/2012	0.91	8/19/2012	34.68	10/8/2012	39.37	26-Jun-13	13.15	15-Aug-13	17.13	4-Oct-13	30.67		
3/23/2012	35.61	5/12/2012	0.74	7/1/2012	1.35	8/20/2012	33.54	8-May-13	356.25	27-Jun-13	13.45	16-Aug-13	16.97	5-Oct-13	28.76		
3/24/2012	42.81	5/13/2012	0.55	7/2/2012	1.64	8/21/2012	32.54	9-May-13	305.18	28-Jun-13	15.64	17-Aug-13	18.18	6-Oct-13	28.76		
3/25/2012	25.22	5/14/2012	0.40	7/3/2012	1.88	8/22/2012	25.32	10-May-13	246.36	29-Jun-13	14.94	18-Aug-13	19.03	7-Oct-13	27.39		
3/26/2012	22.77	5/15/2012	0.26	7/4/2012	1.87	8/23/2012	23.46	11-May-13	207.39	30-Jun-13	14.10	19-Aug-13	18.74	8-Oct-13	26.61		
3/27/2012	91.07	5/16/2012	0.14	7/5/2012	1.25	8/24/2012	29.63	12-May-13	162.99	1-Jul-13	12.75	20-Aug-13	17.79	9-Oct-13	25.98		
3/28/2012	117.25	5/17/2012	0.13	7/6/2012	1.13	8/25/2012	26.89	13-May-13	129.44	2-Jul-13	11.49	21-Aug-13	18.25	10-Oct-13	26.90		
3/29/2012	70.69	5/18/2012	0.10	7/7/2012	0.94	8/26/2012	26.30	14-May-13	104.11	3-Jul-13	10.48	22-Aug-13	16.24	11-Oct-13	27.08		
3/30/2012	41.55	5/19/2012	0.21	7/8/2012	1.07	8/27/2012	25.89	15-May-13	108.06	4-Jul-13	9.58	23-Aug-13	15.37	12-Oct-13	27.01		
3/31/2012	37.70	5/20/2012	0.42	7/9/2012	0.84	8/28/2012	25.27	16-May-13	89.64	5-Jul-13	9.69	24-Aug-13	31.17	13-Oct-13	26.09		
4/1/2012	47.50	5/21/2012	0.18	7/10/2012	0.62	8/29/2012	24.84	17-May-13	71.66	6-Jul-13	11.40	25-Aug-13	44.55	14-Oct-13	24.34		
4/2/2012	53.57	5/22/2012	0.58	7/11/2012	0.43	8/30/2012	24.22	18-May-13	61.16	7-Jul-13	12.19	26-Aug-13	44.55	15-Oct-13	24.86		
4/3/2012	122.20	5/23/2012	1.15	7/12/2012	0.28	8/31/2012	24.23	19-May-13	125.12	8-Jul-13	11.78	27-Aug-13	34.95	16-Oct-13	24.13		
4/4/2012	73.89	5/24/2012	1.43	7/13/2012	0.27	9/1/2012	23.74	20-May-13	241.96	9-Jul-13	15.49	28-Aug-13	36.24	17-Oct-13	26.49		
4/5/2012	39.59	5/25/2012	14.39	7/14/2012	0.23	9/2/2012	23.13	21-May-13	302.94	10-Jul-13	15.43	29-Aug-13	89.70	18-Oct-13	23.77		
4/6/2012	24.89	5/26/2012	11.26	7/15/2012	0.18	9/3/2012	20.78	22-May-13	214.68	11-Jul-13	14.18	30-Aug-13	239.48	19-Oct-13	19.28		
4/7/2012	17.93	5/27/2012	15.25	7/16/2012	3.54	9/4/2012	21.27	23-May-13	146.14	12-Jul-13	14.42	31-Aug-13	217.88	20-Oct-13	20.48		
4/8/2012	14.42	5/28/2012	59.34	7/17/2012	5.60	9/5/2012	21.17	24-May-13	100.44	13-Jul-13	21.67	1-Sep-13	312.31	21-Oct-13	23.36		
4/9/2012	10.91	5/29/2012	146.74	7/18/2012	5.65	9/6/2012	21.34	25-May-13	72.23	14-Jul-13	23.49	2-Sep-13	201.02	22-Oct-13	23.76		
4/10/2012	8.76	5/30/2012	105.94	7/19/2012	3.55	9/7/2012	21.25	26-May-13	59.87	15-Jul-13	24.47	3-Sep-13	126.60	23-Oct-13	26.53		
4/11/2012	7.40	5/31/2012	55.61	7/20/2012	2.68	9/8/2012	23.09	27-May-13	46.65	16-Jul-13	28.15	4-Sep-13	85.43	24-Oct-13	26.14		
4/12/2012	6.31	6/1/2012	28.79	7/21/2012	2.22	9/9/2012	24.03	28-May-13	35.42	17-Jul-13	29.42	5-Sep-13	63.85	25-Oct-13	26.99		
4/13/2012	5.86	6/2/2012	15.30	7/22/2012	1.92	9/10/2012	22.33	29-May-13	27.05	18-Jul-13	23.07	6-Sep-13	72.07	26-Oct-13	28.58		
4/14/2012	8.02	6/3/2012	9.06	7/23/2012	1.64	9/11/2012	21.23	30-May-13	34.30	19-Jul-13	31.25	7-Sep-13	74.45	27-Oct-13	28.50		
4/15/2012	7.20	6/4/2012	5.91	7/24/2012	11.01	9/12/2012	20.64	31-May-13	139.38	20-Jul-13	27.48	8-Sep-13	57.24	28-Oct-13	25.78		
4/16/2012	6.20	6/5/2012	3.41	7/25/2012	23.87	9/13/2012	20.47	1-Jun-13	189.62	21-Jul-13	25.20	9-Sep-13	54.56	29-Oct-13	23.89		
4/17/2012	4.49	6/6/2012	2.04	7/26/2012	23.66	9/14/2012	21.51	2-Jun-13	143.25	22-Jul-13	29.74	10-Sep-13	83.91	30-Oct-13	24.35		
4/18/2012	5.59	6/7/2012	1.24	7/27/2012	20.51	9/15/2012	20.91	3-Jun-13	92.16	23-Jul-13	24.61	11-Sep-13	94.52	31-Oct-13	27.19		
4/19/2012	6.87	6/8/2012	1.19	7/28/2012	18.35	9/16/2012	20.55	4-Jun-13	64.12	24-Jul-13	25.03	12-Sep-13	83.34	1-Nov-13	26.21		
4/20/2012	5.70	6/9/2012	0.99	7/29/2012	36.53	9/17/2012	20.01	5-Jun-13	44.16	25-Jul-13	32.55	13-Sep-13	66.36	2-Nov-13	26.00		
4/21/2012	4.96	6/10/2012	3.83	7/30/2012	75.86	9/18/2012	19.03	6-Jun-13	35.50	26-Jul-13	95.03	14-Sep-13	64.56	3-Nov-13	25.74		
4/22/2012	4.03	6/11/2012	152.32	7/31/2012	70.21	9/19/2012	23.05	7-Jun-13	33.16	27-Jul-13	100.29	15-Sep-13	57.78	4-Nov-13	26.50		
4/23/2012	3.26	6/12/2012	95.77	8/1/2012	55.80	9/20/2012	25.24	8-Jun-13	26.39	28-Jul-13	77.16	16-Sep-13	46.35	5-Nov-13	28.12		

Table B2: TL3 Discharge (L/s)

Date	Discharge (L/s)	Date	Discharge (L/s)	Date	Discharge (L/s)	Date	Discharge (L/s)	Date	Discharge (L/s)	Date	Discharge (L/s)	Date	Discharge (L/s)	Date	Discharge (L/s)	Date	Discharge (L/s)
3/5/2012	4.24	4/24/2012	25.64	6/13/2012	45.65	8/2/2012	13.85	9/21/2012	13.95	17-May-13	20.65	24-Jul-13	71.68	12-Sep-13	79.38	1-Nov-13	78.72
3/6/2012	3.79	4/25/2012	25.67	6/14/2012	40.40	8/3/2012	12.88	9/22/2012	15.39	18-May-13	19.85	25-Jul-13	72.99	13-Sep-13	76.56	2-Nov-13	78.25
3/7/2012	3.05	4/26/2012	25.05	6/15/2012	36.14	8/4/2012	12.55	9/23/2012	15.73	19-May-13	28.68	26-Jul-13	77.70	14-Sep-13	76.58	3-Nov-13	77.76
3/8/2012	2.97	4/27/2012	23.36	6/16/2012	31.19	8/5/2012	11.97	9/24/2012	15.57	20-May-13	52.11	27-Jul-13	77.31	15-Sep-13	76.43	4-Nov-13	77.99
3/9/2012	2.95	4/28/2012	22.48	6/17/2012	29.22	8/6/2012	11.18	9/25/2012	15.33	21-May-13	60.98	28-Jul-13	76.27	16-Sep-13	73.45	5-Nov-13	78.49
3/10/2012	3.11	4/29/2012	21.89	6/18/2012	33.77	8/7/2012	10.84	9/26/2012	15.36	22-May-13	39.54	29-Jul-13	74.63	17-Sep-13	72.36	6-Nov-13	77.93
3/11/2012	3.18	4/30/2012	22.04	6/19/2012	44.68	8/8/2012	10.59	9/27/2012	15.24	23-May-13	30.06	30-Jul-13	73.45	18-Sep-13	72.14	7-Nov-13	78.06
3/12/2012	4.16	5/1/2012	21.45	6/20/2012	40.55	8/9/2012	10.36	9/28/2012	15.31	24-May-13	24.34	31-Jul-13	73.26	19-Sep-13	73.73		
3/13/2012	12.96	5/2/2012	21.24	6/21/2012	40.02	8/10/2012	9.88	9/29/2012	15.31	25-May-13	20.94	1-Aug-13	73.15	20-Sep-13	74.06		
3/14/2012	15.99	5/3/2012	20.47	6/22/2012	34.70	8/11/2012	9.54	9/30/2012	15.21	26-May-13	19.88	2-Aug-13	73.42	21-Sep-13	72.42		
3/15/2012	16.99	5/4/2012	19.96	6/23/2012	30.49	8/12/2012	9.32	10/1/2012	15.14	27-May-13	19.95	3-Aug-13	72.81	22-Sep-13	72.92		
3/16/2012	25.37	5/5/2012	19.70	6/24/2012	28.72	8/13/2012	9.64	10/2/2012	14.81	28-May-13	22.54	4-Aug-13	72.15	23-Sep-13	75.59		
3/17/2012	67.52	5/6/2012	19.57	6/25/2012	26.19	8/14/2012	8.79	10/3/2012	14.77	29-May-13	22.79	5-Aug-13	73.92	24-Sep-13	75.78		
3/18/2012	81.36	5/7/2012	23.72	6/26/2012	26.90	8/15/2012	8.59	10/4/2012	15.49	30-May-13	23.66	6-Aug-13	75.61	25-Sep-13	75.86		
3/19/2012	72.71	5/8/2012	23.30	6/27/2012	25.95	8/16/2012	10.90	10/5/2012	12.97	31-May-13	40.84	7-Aug-13	76.36	26-Sep-13	75.45		
3/20/2012	68.90	5/9/2012	22.51	6/28/2012	25.30	8/17/2012	10.29	10/6/2012	12.38	1-Jun-13	45.19	8-Aug-13	75.73	27-Sep-13	75.64		
3/21/2012	58.77	5/10/2012	21.44	6/29/2012	24.49	8/18/2012	9.82	10/7/2012	13.97	2-Jun-13	37.52	9-Aug-13	75.96	28-Sep-13	77.70		
3/22/2012	48.90	5/11/2012	21.10	6/30/2012	24.37	8/19/2012	9.57	10/8/2012	15.00	3-Jun-13	31.52	10-Aug-13	74.79	29-Sep-13	79.23		
3/23/2012	49.59	5/12/2012	19.94	7/1/2012	25.95	8/20/2012	9.62	10/9/2012	15.88	4-Jun-13	27.85	11-Aug-13	74.30	30-Sep-13	78.37		
3/24/2012	49.30	5/13/2012	18.64	7/2/2012	26.52	8/21/2012	9.60	10/10/2012	15.54	5-Jun-13	27.27	12-Aug-13	75.58	1-Oct-13	78.89		
3/25/2012	44.48	5/14/2012	17.32	7/3/2012	27.90	8/22/2012	9.26	10/11/2012	12.18	6-Jun-13	29.09	13-Aug-13	75.75	2-Oct-13	78.62		
3/26/2012	40.52	5/15/2012	16.58	7/4/2012	28.31	8/23/2012	8.88	10/12/2012	10.43	25-Jun-13	58.05	14-Aug-13	75.08	3-Oct-13	74.83		
3/27/2012	60.62	5/16/2012	15.12	7/5/2012	27.81	8/24/2012	10.93	10/13/2012	9.87	26-Jun-13	56.60	15-Aug-13	75.05	4-Oct-13	73.36		
3/28/2012	64.54	5/17/2012	14.56	7/6/2012	27.61	8/25/2012	10.39	10/14/2012	7.85	27-Jun-13	55.75	16-Aug-13	74.67	5-Oct-13	73.22		
3/29/2012	54.72	5/18/2012	14.01	7/7/2012	27.53	8/26/2012	10.34	10/15/2012	6.80	28-Jun-13	57.56	17-Aug-13	73.96	6-Oct-13	74.14		
3/30/2012	47.11	5/19/2012	14.94	7/8/2012	27.96	8/27/2012	10.27	10/16/2012	6.10	29-Jun-13	56.99	18-Aug-13	72.80	7-Oct-13	74.65		
3/31/2012	43.48	5/20/2012	17.68	7/9/2012	26.64	8/28/2012	10.34	10/17/2012	5.59	30-Jun-13	57.24	19-Aug-13	72.56	8-Oct-13	74.05		
4/1/2012	45.11	5/21/2012	15.45	7/10/2012	25.04	8/29/2012	10.19	10/18/2012	6.94	1-Jul-13	56.97	20-Aug-13	71.59	9-Oct-13	74.92		
4/2/2012	46.24	5/22/2012	18.32	7/11/2012	23.83	8/30/2012	10.28	10/19/2012	10.03	2-Jul-13	58.28	21-Aug-13	72.25	10-Oct-13	75.42		
4/3/2012	66.96	5/23/2012	21.98	7/12/2012	22.73	8/31/2012	10.33	10/20/2012	10.70	3-Jul-13	58.33	22-Aug-13	71.22	11-Oct-13	75.92		
4/4/2012	52.64	5/24/2012	22.49	7/13/2012	21.38	9/1/2012	10.74	10/21/2012	9.81	4-Jul-13	58.44	23-Aug-13	70.45	12-Oct-13	77.62		
4/5/2012	44.88	5/25/2012	37.40	7/14/2012	19.94	9/2/2012	11.00	10/22/2012	8.71	5-Jul-13	58.51	24-Aug-13	75.51	13-Oct-13	77.53		
4/6/2012	40.33	5/26/2012	34.05	7/15/2012	19.54	9/3/2012	11.07	10/23/2012	7.88	6-Jul-13	60.93	25-Aug-13	77.11	14-Oct-13	75.67		
4/7/2012	37.43	5/27/2012	35.21	7/16/2012	28.00	9/4/2012	11.28	10/24/2012	19.01	7-Jul-13	62.02	26-Aug-13	76.95	15-Oct-13	75.84		
4/8/2012	35.36	5/28/2012	51.73	7/17/2012	30.69	9/5/2012	11.60	10/25/2012	17.68	8-Jul-13	61.17	27-Aug-13	77.93	16-Oct-13	75.70		
4/9/2012	32.60	5/29/2012	77.84	7/18/2012	31.79	9/6/2012	11.69	10/26/2012	15.86	9-Jul-13	63.01	28-Aug-13	73.39	17-Oct-13	77.11		
4/10/2012	30.55	5/30/2012	62.84	7/19/2012	31.00	9/7/2012	11.83	10/27/2012	13.59	10-Jul-13	65.44	29-Aug-13	80.64	18-Oct-13	77.86		
4/11/2012	29.32	5/31/2012	49.08	7/20/2012	29.90	9/8/2012	12.20	10/28/2012	11.40	11-Jul-13	64.15	30-Aug-13	89.27	19-Oct-13	76.61		
4/12/2012	28.33	6/1/2012	40.27	7/21/2012	28.80	9/9/2012	12.61	10/29/2012	9.13	12-Jul-13	64.40	31-Aug-13	87.09	20-Oct-13	76.32		
4/13/2012	27.62	6/2/2012	33.79	7/22/2012	27.51	9/10/2012	12.85	10/30/2012	8.74	13-Jul-13	68.53	1-Sep-13	100.60	21-Oct-13	77.60		
4/14/2012	30.54	6/3/2012	29.79	7/23/2012	27.59	9/11/2012	12.83	10/31/2012	7.90	14-Jul-13	69.59	2-Sep-13	86.61	22-Oct-13	77.36		
4/15/2012	29.64	6/4/2012	27.25	7/24/2012	20.05	9/12/2012	13.15	8-May-13	64.85	15-Jul-13	69.06	3-Sep-13	81.51	23-Oct-13	77.54		
4/16/2012	28.08	6/5/2012	24.53	7/25/2012	9.10	9/13/2012	13.33	9-May-13	47.48	16-Jul-13	70.53	4-Sep-13	78.73	24-Oct-13	77.60		
4/17/2012	26.40	6/6/2012	23.64	7/26/2012	9.38	9/14/2012	13.38	10-May-13	39.52	17-Jul-13	69.52	5-Sep-13	75.54	25-Oct-13	76.59		
4/18/2012	27.87	6/7/2012	21.52	7/27/2012	9.35	9/15/2012	13.19	11-May-13	34.91	18-Jul-13	68.33	6-Sep-13	77.13	26-Oct-13	78.30		
4/19/2012	29.79	6/8/2012	21.01	7/28/2012	9.07	9/16/2012	12.97	12-May-13	30.83	19-Jul-13	73.30	7-Sep-13	78.59	27-Oct-13	78.79		
4/20/2012	28.35	6/9/2012	21.22	7/29/2012	12.05	9/17/2012	12.64	13-May-13	27.15	20-Jul-13	71.72	8-Sep-13	75.31	28-Oct-13	77.30		
4/21/2012	27.68	6/10/2012	26.28	7/30/2012	18.65	9/18/2012	12.40	14-May-13	24.34	21-Jul-13	69.99	9-Sep-13	75.14	29-Oct-13	76.08		
4/22/2012	26.42	6/11/2012	80.50	7/31/2012	16.37	9/19/2012	12.79	15-May-13	24.80	22-Jul-13	72.32	10-Sep-13	79.09	30-Oct-13	76.13		
4/23/2012	25.34	6/12/2012	59.44	8/1/2012	14.27	9/20/2012	13.37	16-May-13	22.85	23-Jul-13	71.56	11-Sep-13	80.39	31-Oct-13	77.29		

Table B3: HS4 Discharge (L/s)

Date	Discharge (L/s)	Date	Discharge (L/s)	Date	Discharge (L/s)	Date	Discharge (L/s)	Date	Discharge (L/s)	Date	Discharge (L/s)
7/24/2012	14.31	9/12/2012	14.66	7-Jun-13	53.14	27-Jul-13	125.06	15-Sep-13	521.46	4-Nov-13	56.17
7/25/2012	13.74	9/13/2012	14.41	8-Jun-13	48.93	28-Jul-13	85.51	16-Sep-13	538.83	5-Nov-13	59.66
7/26/2012	14.28	9/14/2012	14.80	9-Jun-13	44.54	29-Jul-13	62.14	17-Sep-13	536.96	6-Nov-13	56.71
7/27/2012	13.63	9/15/2012	14.27	10-Jun-13	58.27	30-Jul-13	49.90	18-Sep-13	532.91	7-Nov-13	54.27
7/28/2012	13.11	9/16/2012	14.41	11-Jun-13	78.71	31-Jul-13	44.53	19-Sep-13	549.80		
7/29/2012	25.74	9/17/2012	14.33	12-Jun-13	73.57	1-Aug-13	42.18	20-Sep-13	569.16		
7/30/2012	56.23	9/18/2012	14.50	13-Jun-13	57.63	2-Aug-13	40.01	21-Sep-13	562.09		
7/31/2012	37.93	9/19/2012	17.59	14-Jun-13	47.56	3-Aug-13	37.30	22-Sep-13	555.11		
8/1/2012	28.12	9/20/2012	20.32	15-Jun-13	47.40	4-Aug-13	34.38	23-Sep-13	544.48		
8/2/2012	28.51	9/21/2012	22.00	16-Jun-13	46.46	5-Aug-13	33.12	24-Sep-13	552.72		
8/3/2012	25.60	9/22/2012	28.55	17-Jun-13	45.47	6-Aug-13	35.56	25-Sep-13	511.82		
8/4/2012	25.35	9/23/2012	23.94	18-Jun-13	41.86	7-Aug-13	36.13	26-Sep-13	299.37		
8/5/2012	23.31	9/24/2012	20.48	19-Jun-13	38.38	8-Aug-13	34.83	27-Sep-13	280.51		
8/6/2012	20.07	9/25/2012	19.38	20-Jun-13	34.50	9-Aug-13	37.99	28-Sep-13	332.96		
8/7/2012	18.27	9/26/2012	19.26	21-Jun-13	32.96	10-Aug-13	35.98	29-Sep-13	163.75		
8/8/2012	17.15	9/27/2012	18.21	22-Jun-13	33.05	11-Aug-13	34.81	30-Sep-13	141.84		
8/9/2012	17.66	9/28/2012	17.59	23-Jun-13	35.19	12-Aug-13	41.65	1-Oct-13	111.43		
8/10/2012	15.86	9/29/2012	17.31	24-Jun-13	40.18	13-Aug-13	37.42	2-Oct-13	97.74		
8/11/2012	14.67	9/30/2012	16.40	25-Jun-13	35.33	14-Aug-13	33.73	3-Oct-13	87.14		
8/12/2012	14.90	10/1/2012	16.04	26-Jun-13	34.00	15-Aug-13	32.77	4-Oct-13	80.62		
8/13/2012	20.11	10/2/2012	15.77	27-Jun-13	35.82	16-Aug-13	31.17	5-Oct-13	76.29		
8/14/2012	17.40	10/3/2012	15.98	28-Jun-13	46.62	17-Aug-13	30.11	6-Oct-13	73.60		
8/15/2012	17.66	10/4/2012	23.25	29-Jun-13	43.36	18-Aug-13	29.49	7-Oct-13	70.74		
8/16/2012	27.37	10/5/2012	66.67	30-Jun-13	36.74	19-Aug-13	29.81	8-Oct-13	65.79		
8/17/2012	23.02	10/6/2012	72.26	1-Jul-13	32.50	20-Aug-13	28.61	9-Oct-13	64.52		
8/18/2012	20.39	10/7/2012	57.33	2-Jul-13	29.80	21-Aug-13	30.78	10-Oct-13	61.66		
8/19/2012	17.99	10/8/2012	53.38	3-Jul-13	28.22	22-Aug-13	29.28	11-Oct-13	59.37		
8/20/2012	17.07	10/9/2012	59.02	4-Jul-13	26.74	23-Aug-13	28.01	12-Oct-13	57.64		
8/21/2012	15.76	10/10/2012	57.06	5-Jul-13	26.55	24-Aug-13	67.42	13-Oct-13	53.70		
8/22/2012	15.13	10/11/2012	52.11	6-Jul-13	30.39	25-Aug-13	87.34	14-Oct-13	50.76		
8/23/2012	15.08	10/12/2012	44.19	7-Jul-13	35.28	26-Aug-13	64.23	15-Oct-13	51.11		
8/24/2012	25.72	10/13/2012	39.91	8-Jul-13	31.18	27-Aug-13	47.31	16-Oct-13	49.19		
8/25/2012	23.38	10/14/2012	36.06	9-Jul-13	35.64	28-Aug-13	43.84	17-Oct-13	49.42		
8/26/2012	20.57	10/15/2012	32.89	10-Jul-13	45.81	29-Aug-13	70.90	18-Oct-13	47.55		
8/27/2012	18.64	10/16/2012	31.68	11-Jul-13	39.14	30-Aug-13	185.35	19-Oct-13	47.33		
8/28/2012	16.98	10/17/2012	31.29	12-Jul-13	35.89	31-Aug-13	171.35	20-Oct-13	53.19		
8/29/2012	15.50	10/18/2012	37.42	13-Jul-13	61.97	1-Sep-13	298.95	21-Oct-13	66.43		
8/30/2012	15.55	10/19/2012	50.97	14-Jul-13	55.50	2-Sep-13	240.34	22-Oct-13	68.99		
8/31/2012	14.65	10/20/2012	55.52	15-Jul-13	44.93	3-Sep-13	160.84	23-Oct-13	65.30		
9/1/2012	13.67	10/21/2012	48.68	16-Jul-13	39.11	4-Sep-13	119.59	24-Oct-13	61.12		
9/2/2012	13.71	10/22/2012	42.16	17-Jul-13	35.18	5-Sep-13	92.66	25-Oct-13	57.57		
9/3/2012	13.89	10/23/2012	39.90	18-Jul-13	31.73	6-Sep-13	98.16	26-Oct-13	59.71		
9/4/2012	13.41	10/24/2012	63.76	19-Jul-13	42.80	7-Sep-13	143.06	27-Oct-13	60.13		
9/5/2012	15.19	10/25/2012	77.25	20-Jul-13	38.12	8-Sep-13	129.50	28-Oct-13	57.28		
9/6/2012	15.59	10/26/2012	60.79	21-Jul-13	33.69	9-Sep-13	236.70	29-Oct-13	52.43		
9/7/2012	15.46	10/27/2012	51.79	22-Jul-13	35.99	10-Sep-13	345.81	30-Oct-13	48.77		
9/8/2012	17.96	10/28/2012	47.02	23-Jul-13	34.37	11-Sep-13	393.22	31-Oct-13	51.19		
9/9/2012	19.07	10/29/2012	41.43	24-Jul-13	33.11	12-Sep-13	428.13	1-Nov-13	53.40		
9/10/2012	16.06	10/30/2012	38.28	25-Jul-13	53.72	13-Sep-13	425.64	2-Nov-13	54.10		
9/11/2012	15.10	10/31/2012	34.87	26-Jul-13	128.79	14-Sep-13	493.63	3-Nov-13	54.09		

Table B4: HS5 Discharge (L/s)

Date	Discharge (L/s)	Date	Discharge (L/s)	Date	Discharge (L/s)	Date	Discharge (L/s)	Date	Discharge (L/s)	Date	Discharge (L/s)
8/22/2012	1.35	10/10/2012	3.95	22-May-13	6.55	10-Jul-13	0.82	28-Aug-13	1.34	17-Oct-13	1.46
8/23/2012	1.41	10/11/2012	3.71	23-May-13	4.54	11-Jul-13	0.66	29-Aug-13	3.76	18-Oct-13	1.34
8/24/2012	1.56	10/12/2012	3.10	24-May-13	3.31	12-Jul-13	0.67	30-Aug-13	6.27	19-Oct-13	1.25
8/25/2012	1.53	10/13/2012	3.03	25-May-13	2.83	13-Jul-13	1.19	31-Aug-13	5.66	20-Oct-13	1.69
8/26/2012	1.53	10/14/2012	2.73	26-May-13	2.40	14-Jul-13	1.00	1-Sep-13	12.73	21-Oct-13	3.03
8/27/2012	1.52	10/15/2012	2.53	27-May-13	2.06	15-Jul-13	0.80	2-Sep-13	6.16	22-Oct-13	2.98
8/28/2012	1.40	10/16/2012	2.56	28-May-13	1.82	16-Jul-13	0.76	3-Sep-13	4.01	23-Oct-13	2.65
8/29/2012	1.31	10/17/2012	2.60	29-May-13	1.69	17-Jul-13	0.77	4-Sep-13	3.22	24-Oct-13	2.37
8/30/2012	1.44	10/18/2012	3.57	30-May-13	2.20	18-Jul-13	0.66	5-Sep-13	2.51	25-Oct-13	2.17
8/31/2012	1.46	10/19/2012	4.83	31-May-13	7.85	19-Jul-13	0.02	6-Sep-13	3.00	26-Oct-13	2.28
9/1/2012	1.38	10/20/2012	4.03	1-Jun-13	7.85	20-Jul-13	0.00	7-Sep-13	3.71	27-Oct-13	2.16
9/2/2012	1.38	10/21/2012	3.58	2-Jun-13	5.08	21-Jul-13	0.01	8-Sep-13	2.70	28-Oct-13	1.71
9/3/2012	1.44	10/22/2012	3.26	3-Jun-13	3.34	22-Jul-13	0.03	9-Sep-13	2.68	29-Oct-13	1.28
9/4/2012	1.44	10/23/2012	3.30	4-Jun-13	2.26	23-Jul-13	0.03	10-Sep-13	4.70	30-Oct-13	1.23
9/5/2012	1.52	10/24/2012	6.21	5-Jun-13	1.88	24-Jul-13	0.54	11-Sep-13	4.52	31-Oct-13	1.36
9/6/2012	1.56	10/25/2012	4.68	6-Jun-13	1.55	25-Jul-13	1.80	12-Sep-13	3.90	1-Nov-13	1.38
9/7/2012	1.55	10/26/2012	3.97	7-Jun-13	1.34	26-Jul-13	3.37	13-Sep-13	3.06	2-Nov-13	1.35
9/8/2012	1.59	10/27/2012	3.42	8-Jun-13	1.17	27-Jul-13	2.22	14-Sep-13	2.97	3-Nov-13	1.32
9/9/2012	1.56	10/28/2012	3.07	9-Jun-13	1.09	28-Jul-13	1.65	15-Sep-13	3.19	4-Nov-13	1.38
9/10/2012	1.42	10/29/2012	2.70	10-Jun-13	1.91	29-Jul-13	1.31	16-Sep-13	2.44	5-Nov-13	1.45
9/11/2012	1.50	10/30/2012	2.62	11-Jun-13	3.89	30-Jul-13	1.19	17-Sep-13	2.12	6-Nov-13	1.24
9/12/2012	1.59	10/31/2012	2.40	12-Jun-13	2.41	31-Jul-13	1.14	18-Sep-13	1.85	7-Nov-13	1.13
9/13/2012	1.64	25-Apr-13	0.44	13-Jun-13	1.72	1-Aug-13	1.11	19-Sep-13	2.76		
9/14/2012	1.52	26-Apr-13	0.64	14-Jun-13	1.27	2-Aug-13	1.12	20-Sep-13	3.02		
9/15/2012	1.42	27-Apr-13	5.13	15-Jun-13	1.34	3-Aug-13	1.08	21-Sep-13	2.36		
9/16/2012	1.58	28-Apr-13	46.61	16-Jun-13	1.57	4-Aug-13	0.94	22-Sep-13	1.83		
9/17/2012	1.52	29-Apr-13	35.71	17-Jun-13	1.53	5-Aug-13	0.94	23-Sep-13	1.72		
9/18/2012	1.38	30-Apr-13	27.95	18-Jun-13	1.16	6-Aug-13	1.10	24-Sep-13	1.52		
9/19/2012	1.60	1-May-13	17.58	19-Jun-13	1.01	7-Aug-13	1.05	25-Sep-13	1.33		
9/20/2012	1.69	2-May-13	7.91	20-Jun-13	0.93	8-Aug-13	1.01	26-Sep-13	1.21		
9/21/2012	1.82	3-May-13	6.37	21-Jun-13	0.88	9-Aug-13	1.07	27-Sep-13	1.37		
9/22/2012	2.20	4-May-13	6.74	22-Jun-13	0.83	10-Aug-13	0.96	28-Sep-13	2.42		
9/23/2012	1.84	5-May-13	10.13	23-Jun-13	0.94	11-Aug-13	0.96	29-Sep-13	3.99		
9/24/2012	1.84	6-May-13	10.59	24-Jun-13	1.09	12-Aug-13	1.13	30-Sep-13	3.17		
9/25/2012	1.70	7-May-13	9.16	25-Jun-13	0.83	13-Aug-13	1.02	1-Oct-13	2.87		
9/26/2012	1.75	8-May-13	7.44	26-Jun-13	0.82	14-Aug-13	0.92	2-Oct-13	2.56		
9/27/2012	1.63	9-May-13	5.42	27-Jun-13	0.88	15-Aug-13	0.92	4-Oct-13	1.95		
9/28/2012	1.68	10-May-13	4.15	28-Jun-13	1.12	16-Aug-13	0.89	5-Oct-13	1.81		
9/29/2012	1.65	11-May-13	3.62	29-Jun-13	0.95	17-Aug-13	0.91	6-Oct-13	1.82		
9/30/2012	1.63	12-May-13	2.80	30-Jun-13	0.79	18-Aug-13	0.89	7-Oct-13	1.73		
10/1/2012	1.79	13-May-13	2.33	1-Jul-13	0.70	19-Aug-13	0.89	8-Oct-13	1.65		
10/2/2012	1.64	14-May-13	2.27	2-Jul-13	0.62	20-Aug-13	0.86	9-Oct-13	1.56		
10/3/2012	1.86	15-May-13	2.36	3-Jul-13	0.59	21-Aug-13	1.05	10-Oct-13	1.47		
10/4/2012	2.32	16-May-13	2.05	4-Jul-13	0.57	22-Aug-13	1.01	11-Oct-13	1.47		
10/5/2012	5.37	17-May-13	1.64	5-Jul-13	0.60	23-Aug-13	0.94	12-Oct-13	1.64		
10/6/2012	4.95	18-May-13	1.90	6-Jul-13	0.74	24-Aug-13	1.63	13-Oct-13	1.58		
10/7/2012	4.22	19-May-13	4.60	7-Jul-13	0.76	25-Aug-13	1.84	14-Oct-13	1.44		
10/8/2012	3.84	20-May-13	12.61	8-Jul-13	0.64	26-Aug-13	1.46	15-Oct-13	1.52		
10/9/2012	4.52	21-May-13	12.31	9-Jul-13	0.83	27-Aug-13	1.20	16-Oct-13	1.44		

Table B5: HS6 Discharge (L/s)

Date	Discharge (L/s)	Date	Discharge (L/s)	Date	Discharge (L/s)	Date	Discharge (L/s)	Date	Discharge (L/s)	Date	Discharge (L/s)
7/24/2012	9.25	9/12/2012	10.21	7-May-13	21.96	26-Jun-13	2.48	15-Aug-13	3.43	14-Oct-13	4.17
7/25/2012	9.90	9/13/2012	10.40	8-May-13	19.05	27-Jun-13	2.53	16-Aug-13	3.38	15-Oct-13	4.20
7/26/2012	10.23	9/14/2012	10.15	9-May-13	6.58	28-Jun-13	2.58	17-Aug-13	3.37	16-Oct-13	4.14
7/27/2012	9.75	9/15/2012	9.90	10-May-13	0.32	29-Jun-13	2.47	18-Aug-13	3.33	17-Oct-13	4.28
7/28/2012	9.57	9/16/2012	10.11	11-May-13	0.21	30-Jun-13	2.41	19-Aug-13	3.32	18-Oct-13	4.10
7/29/2012	11.86	9/17/2012	10.01	12-May-13	0.15	1-Jul-13	2.39	20-Aug-13	3.23	19-Oct-13	4.11
7/30/2012	11.97	9/18/2012	9.76	13-May-13	0.08	2-Jul-13	2.34	21-Aug-13	3.51	20-Oct-13	4.33
7/31/2012	10.73	9/19/2012	10.24	14-May-13	0.15	3-Jul-13	2.30	22-Aug-13	3.50	21-Oct-13	4.45
8/1/2012	10.48	9/20/2012	10.40	15-May-13	0.31	4-Jul-13	2.25	23-Aug-13	3.41	22-Oct-13	4.37
8/2/2012	10.75	9/21/2012	10.61	16-May-13	0.30	5-Jul-13	2.29	24-Aug-13	3.67	23-Oct-13	4.36
8/3/2012	10.29	9/22/2012	10.57	17-May-13	0.65	6-Jul-13	2.44	25-Aug-13	3.48	24-Oct-13	4.41
8/4/2012	10.51	9/23/2012	10.22	18-May-13	1.93	7-Jul-13	2.40	26-Aug-13	3.42	25-Oct-13	4.30
8/5/2012	10.33	9/24/2012	10.33	19-May-13	2.49	8-Jul-13	2.30	27-Aug-13	3.44	26-Oct-13	4.50
8/6/2012	9.97	9/25/2012	10.09	20-May-13	4.76	9-Jul-13	2.49	28-Aug-13	3.53	27-Oct-13	4.53
8/7/2012	10.07	9/26/2012	10.10	21-May-13	5.53	10-Jul-13	2.40	29-Aug-13	4.26	28-Oct-13	4.52
8/8/2012	10.01	9/27/2012	9.94	22-May-13	4.36	11-Jul-13	2.33	30-Aug-13	3.90	29-Oct-13	4.70
8/9/2012	10.37	9/28/2012	9.72	23-May-13	3.93	12-Jul-13	2.35	31-Aug-13	4.36	30-Oct-13	4.53
8/10/2012	10.07	9/29/2012	9.72	24-May-13	3.37	13-Jul-13	2.43	1-Sep-13	5.55	31-Oct-13	4.70
8/11/2012	9.87	9/30/2012	9.39	25-May-13	2.87	14-Jul-13	2.41	2-Sep-13	4.42	1-Nov-13	4.82
8/12/2012	10.07	10/1/2012	9.71	26-May-13	2.48	15-Jul-13	2.33	3-Sep-13	4.08	2-Nov-13	4.78
8/13/2012	10.26	10/2/2012	9.45	27-May-13	2.64	16-Jul-13	2.36	4-Sep-13	4.06	3-Nov-13	4.65
8/14/2012	10.07	10/3/2012	9.82	28-May-13	2.58	17-Jul-13	2.63	5-Sep-13	3.86	4-Nov-13	4.69
8/15/2012	10.20	10/4/2012	10.38	29-May-13	2.55	18-Jul-13	2.94	6-Sep-13	4.11	5-Nov-13	4.68
8/16/2012	10.65	10/5/2012	11.56	30-May-13	2.82	19-Jul-13	3.38	7-Sep-13	4.19	6-Nov-13	4.67
8/17/2012	10.15	10/6/2012	10.76	31-May-13	4.68	20-Jul-13	3.37	8-Sep-13	4.01	7-Nov-13	4.70
8/18/2012	10.14	10/7/2012	10.57	1-Jun-13	5.16	21-Jul-13	3.32	9-Sep-13	4.23		
8/19/2012	9.88	10/8/2012	10.57	2-Jun-13	4.07	22-Jul-13	3.51	10-Sep-13	4.47		
8/20/2012	9.87	10/9/2012	10.88	3-Jun-13	3.26	23-Jul-13	3.55	11-Sep-13	4.52		
8/21/2012	9.73	10/10/2012	10.70	4-Jun-13	2.82	24-Jul-13	3.60	12-Sep-13	4.34		
8/22/2012	9.83	10/11/2012	10.81	5-Jun-13	2.60	25-Jul-13	3.83	13-Sep-13	4.12		
8/23/2012	9.78	10/12/2012	10.47	6-Jun-13	2.46	26-Jul-13	3.92	14-Sep-13	4.26		
8/24/2012	10.25	10/13/2012	10.70	7-Jun-13	2.41	27-Jul-13	3.71	15-Sep-13	4.28		
8/25/2012	10.38	10/14/2012	10.69	8-Jun-13	2.35	28-Jul-13	3.60	16-Sep-13	4.06		
8/26/2012	10.39	10/15/2012	10.57	9-Jun-13	2.35	29-Jul-13	3.57	17-Sep-13	4.06		
8/27/2012	10.35	10/16/2012	10.71	10-Jun-13	2.58	30-Jul-13	3.59	18-Sep-13	4.05		
8/28/2012	10.13	10/17/2012	10.86	11-Jun-13	3.17	31-Jul-13	3.61	19-Sep-13	4.20		
8/29/2012	9.89	10/18/2012	11.58	12-Jun-13	2.68	1-Aug-13	3.62	20-Sep-13	4.30		
8/30/2012	10.09	10/19/2012	11.94	13-Jun-13	2.50	2-Aug-13	3.68	21-Sep-13	4.26		
8/31/2012	10.17	10/20/2012	11.61	14-Jun-13	2.37	3-Aug-13	3.69	22-Sep-13	4.11		
9/1/2012	10.07	10/21/2012	11.72	15-Jun-13	2.42	4-Aug-13	3.55	3-Oct-13	4.31		
9/2/2012	9.94	10/22/2012	11.57	16-Jun-13	2.58	5-Aug-13	3.53	4-Oct-13	4.37		
9/3/2012	9.90	10/23/2012	11.56	17-Jun-13	2.51	6-Aug-13	3.69	5-Oct-13	4.28		
9/4/2012	9.97	10/24/2012	12.51	18-Jun-13	2.44	7-Aug-13	3.62	6-Oct-13	4.30		
9/5/2012	10.22	10/25/2012	11.69	19-Jun-13	2.46	8-Aug-13	3.59	7-Oct-13	4.35		
9/6/2012	10.26	10/26/2012	11.78	20-Jun-13	2.47	9-Aug-13	3.62	8-Oct-13	4.24		
9/7/2012	10.24	10/27/2012	11.57	21-Jun-13	2.50	10-Aug-13	3.50	9-Oct-13	4.36		
9/8/2012	10.44	10/28/2012	11.35	22-Jun-13	2.49	11-Aug-13	3.50	10-Oct-13	4.30		
9/9/2012	10.34	10/29/2012	11.10	23-Jun-13	2.53	12-Aug-13	3.66	11-Oct-13	4.24		
9/10/2012	9.99	10/30/2012	11.18	24-Jun-13	2.47	13-Aug-13	3.55	12-Oct-13	4.45		
9/11/2012	10.07	10/31/2012	11.03	25-Jun-13	2.41	14-Aug-13	3.43	13-Oct-13	4.39		

Table B6: HS7 Discharge (L/s)

Date	Discharge (L/s)	Date	Discharge (L/s)	Date	Discharge (L/s)	Date	Discharge (L/s)	Date	Discharge (L/s)	Date	Discharge (L/s)
7/24/2012	24.71	9/12/2012	22.21	7-May-13	549.13	26-Jun-13	28.77	15-Aug-13	19.22	13-Oct-13	36.24
7/25/2012	22.91	9/13/2012	22.81	8-May-13	603.93	27-Jun-13	30.36	16-Aug-13	17.79	14-Oct-13	32.19
7/26/2012	23.94	9/14/2012	24.66	9-May-13	462.04	28-Jun-13	43.25	17-Aug-13	17.08	15-Oct-13	34.04
7/27/2012	23.24	9/15/2012	23.13	10-May-13	337.05	29-Jun-13	38.16	18-Aug-13	16.55	16-Oct-13	33.43
7/28/2012	20.90	9/16/2012	23.67	11-May-13	272.53	30-Jun-13	31.45	19-Aug-13	16.30	17-Oct-13	33.54
7/29/2012	47.73	9/17/2012	23.12	12-May-13	228.49	1-Jul-13	25.71	20-Aug-13	15.19	18-Oct-13	32.30
7/30/2012	78.35	9/18/2012	22.62	13-May-13	195.83	2-Jul-13	22.11	21-Aug-13	19.22	19-Oct-13	33.04
7/31/2012	52.79	9/19/2012	29.13	14-May-13	176.84	3-Jul-13	18.66	22-Aug-13	17.21	20-Oct-13	37.46
8/1/2012	38.73	9/20/2012	31.55	15-May-13	178.30	4-Jul-13	16.37	23-Aug-13	15.72	21-Oct-13	44.55
8/2/2012	42.44	9/21/2012	32.43	16-May-13	172.86	5-Jul-13	16.30	24-Aug-13	47.32	22-Oct-13	42.87
8/3/2012	38.13	9/22/2012	43.46	17-May-13	155.97	6-Jul-13	21.47	25-Aug-13	59.66	23-Oct-13	40.68
8/4/2012	38.18	9/23/2012	32.61	18-May-13	149.26	7-Jul-13	28.65	26-Aug-13	37.88	24-Oct-13	41.02
8/5/2012	34.70	9/24/2012	30.00	19-May-13	187.22	8-Jul-13	22.87	27-Aug-13	31.13	25-Oct-13	41.32
8/6/2012	28.63	9/25/2012	29.39	20-May-13	367.35	9-Jul-13	25.56	28-Aug-13	30.48	26-Oct-13	44.25
8/7/2012	27.26	9/26/2012	30.71	21-May-13	791.60	10-Jul-13	33.14	29-Aug-13	58.89	27-Oct-13	44.04
8/8/2012	26.04	9/27/2012	27.93	22-May-13	409.85	11-Jul-13	26.05	30-Aug-13	214.37	28-Oct-13	38.76
8/9/2012	26.15	9/28/2012	27.33	23-May-13	252.89	12-Jul-13	21.50	31-Aug-13	237.86	29-Oct-13	42.02
8/10/2012	24.17	9/29/2012	26.00	24-May-13	193.41	13-Jul-13	42.83	1-Sep-13	575.82	30-Oct-13	32.18
8/11/2012	23.60	9/30/2012	26.94	25-May-13	162.61	14-Jul-13	34.55	2-Sep-13	356.68	31-Oct-13	33.53
8/12/2012	23.96	10/1/2012	26.89	26-May-13	138.58	15-Jul-13	28.44	3-Sep-13	205.71	1-Nov-13	35.21
8/13/2012	29.69	10/2/2012	26.06	27-May-13	116.25	16-Jul-13	23.93	4-Sep-13	134.14	2-Nov-13	34.08
8/14/2012	24.53	10/3/2012	28.60	28-May-13	103.49	17-Jul-13	22.17	5-Sep-13	96.09	3-Nov-13	33.42
8/15/2012	25.14	10/4/2012	40.48	29-May-13	93.04	18-Jul-13	18.49	6-Sep-13	92.43	4-Nov-13	35.59
8/16/2012	40.02	10/5/2012	103.69	30-May-13	97.62	19-Jul-13	33.89	7-Sep-13	98.88	5-Nov-13	37.26
8/17/2012	31.07	10/6/2012	97.39	31-May-13	247.04	20-Jul-13	33.35	8-Sep-13	79.29	6-Nov-13	35.10
8/18/2012	27.65	10/7/2012	100.47	1-Jun-13	409.47	21-Jul-13	27.15	9-Sep-13	69.90	7-Nov-13	34.67
8/19/2012	24.69	10/8/2012	106.81	2-Jun-13	325.78	22-Jul-13	26.99	10-Sep-13	117.39		
8/20/2012	23.96	10/9/2012	126.98	3-Jun-13	224.78	23-Jul-13	26.88	11-Sep-13	135.89		
8/21/2012	21.92	10/10/2012	127.67	4-Jun-13	165.29	24-Jul-13	23.53	12-Sep-13	142.10		
8/22/2012	20.89	10/11/2012	118.85	5-Jun-13	129.30	25-Jul-13	39.31	13-Sep-13	109.99		
8/23/2012	20.29	10/12/2012	103.55	6-Jun-13	105.91	26-Jul-13	144.10	14-Sep-13	91.06		
8/24/2012	38.88	10/13/2012	91.83	7-Jun-13	79.11	27-Jul-13	148.53	15-Sep-13	84.62		
8/25/2012	32.62	10/14/2012	79.84	8-Jun-13	60.84	28-Jul-13	111.01	16-Sep-13	68.94		
8/26/2012	29.66	10/15/2012	69.29	9-Jun-13	53.15	29-Jul-13	73.61	17-Sep-13	60.17		
8/27/2012	27.08	10/16/2012	64.31	10-Jun-13	75.91	30-Jul-13	52.97	18-Sep-13	52.28		
8/28/2012	24.73	10/17/2012	60.30	11-Jun-13	130.70	31-Jul-13	45.58	19-Sep-13	70.47		
8/29/2012	22.26	10/18/2012	72.06	12-Jun-13	123.71	1-Aug-13	38.96	20-Sep-13	71.10		
8/30/2012	21.95	10/19/2012	95.03	13-Jun-13	93.42	2-Aug-13	35.55	21-Sep-13	62.16		
8/31/2012	23.57	10/20/2012	103.02	14-Jun-13	67.88	3-Aug-13	30.67	22-Sep-13	52.86		
9/1/2012	19.73	10/21/2012	95.77	15-Jun-13	59.94	4-Aug-13	25.24	23-Sep-13	49.95		
9/2/2012	21.86	10/22/2012	84.04	16-Jun-13	55.27	5-Aug-13	23.21	3-Oct-13	50.37		
9/3/2012	20.94	10/23/2012	77.19	17-Jun-13	50.91	6-Aug-13	24.37	4-Oct-13	44.89		
9/4/2012	20.71	10/24/2012	111.11	18-Jun-13	44.07	7-Aug-13	25.90	5-Oct-13	43.60		
9/5/2012	23.72	10/25/2012	115.41	19-Jun-13	37.82	8-Aug-13	24.34	6-Oct-13	43.38		
9/6/2012	23.92	10/26/2012	104.11	20-Jun-13	35.28	9-Aug-13	26.17	7-Oct-13	40.95		
9/7/2012	23.94	10/27/2012	90.91	21-Jun-13	33.12	10-Aug-13	23.54	8-Oct-13	37.24		
9/8/2012	28.83	10/28/2012	78.94	22-Jun-13	30.48	11-Aug-13	22.86	9-Oct-13	37.89		
9/9/2012	29.92	10/29/2012	67.40	23-Jun-13	29.67	12-Aug-13	27.42	10-Oct-13	34.01		
9/10/2012	24.53	10/30/2012	61.44	24-Jun-13	35.82	13-Aug-13	23.00	11-Oct-13	33.64		
9/11/2012	23.18	10/31/2012	54.76	25-Jun-13	30.63	14-Aug-13	19.83	12-Oct-13	35.84		

Table B7: JCTA Discharge (L/s)

Date	Discharge (L/s)	Date	Discharge (L/s)	Date	Discharge (L/s)	Date	Discharge (L/s)
15-May-13	214.52	4-Jul-13	17.08	23-Aug-13	18.77	12-Oct-13	25.82
16-May-13	190.87	5-Jul-13	17.00	24-Aug-13	47.66	13-Oct-13	24.08
17-May-13	162.17	6-Jul-13	20.38	25-Aug-13	57.01	14-Oct-13	21.07
18-May-13	147.01	7-Jul-13	20.70	26-Aug-13	58.95	15-Oct-13	21.91
19-May-13	252.67	8-Jul-13	17.23	27-Aug-13	71.01	16-Oct-13	20.28
20-May-13	675.16	9-Jul-13	25.42	28-Aug-13	16.07	17-Oct-13	29.43
21-May-13	930.92	10-Jul-13	29.40	29-Aug-13	109.29	18-Oct-13	34.96
22-May-13	460.22	11-Jul-13	22.48	30-Aug-13	478.60	19-Oct-13	21.31
23-May-13	274.08	12-Jul-13	21.39	31-Aug-13	414.53	20-Oct-13	19.97
24-May-13	187.79	13-Jul-13	36.07	1-Sep-13	770.22	21-Oct-13	25.08
25-May-13	145.46	14-Jul-13	34.01	2-Sep-13	356.75	22-Oct-13	24.20
26-May-13	126.97	15-Jul-13	32.50	3-Sep-13	197.98	23-Oct-13	25.23
27-May-13	112.86	16-Jul-13	40.92	4-Sep-13	125.16	24-Oct-13	26.13
28-May-13	99.00	17-Jul-13	48.02	5-Sep-13	84.88	25-Oct-13	25.23
29-May-13	86.30	18-Jul-13	34.06	6-Sep-13	106.97	26-Oct-13	28.55
30-May-13	87.51	19-Jul-13	51.23	7-Sep-13	114.21	27-Oct-13	27.65
31-May-13	314.72	20-Jul-13	37.90	8-Sep-13	79.31	28-Oct-13	24.46
1-Jun-13	468.38	21-Jul-13	32.02	9-Sep-13	71.71	29-Oct-13	21.29
2-Jun-13	325.42	22-Jul-13	42.46	10-Sep-13	127.87	30-Oct-13	21.31
3-Jun-13	203.25	23-Jul-13	36.48	11-Sep-13	139.94	31-Oct-13	24.54
4-Jun-13	145.92	24-Jul-13	40.12	12-Sep-13	122.98	1-Nov-13	24.42
5-Jun-13	111.05	25-Jul-13	50.85	13-Sep-13	92.23	2-Nov-13	23.52
6-Jun-13	91.95	26-Jul-13	163.95	14-Sep-13	86.15	3-Nov-13	22.99
7-Jun-13	90.65	27-Jul-13	166.22	15-Sep-13	76.34	4-Nov-13	23.70
8-Jun-13	72.63	28-Jul-13	129.83	16-Sep-13	57.37	5-Nov-13	25.69
9-Jun-13	60.80	29-Jul-13	89.08	17-Sep-13	50.61	6-Nov-13	25.69
10-Jun-13	104.52	30-Jul-13	67.06	18-Sep-13	44.25	7-Nov-13	24.92
11-Jun-13	201.64	31-Jul-13	59.11	19-Sep-13	55.87		
12-Jun-13	145.61	1-Aug-13	50.53	20-Sep-13	50.14		
13-Jun-13	109.67	2-Aug-13	43.25	21-Sep-13	48.23		
14-Jun-13	83.75	3-Aug-13	37.19	22-Sep-13	38.41		
15-Jun-13	79.91	4-Aug-13	32.25	23-Sep-13	34.08		
16-Jun-13	93.85	5-Aug-13	29.04	24-Sep-13	31.96		
17-Jun-13	82.13	6-Aug-13	29.93	25-Sep-13	30.03		
18-Jun-13	57.26	7-Aug-13	27.03	26-Sep-13	27.99		
19-Jun-13	44.14	8-Aug-13	25.31	27-Sep-13	28.26		
20-Jun-13	37.66	9-Aug-13	26.49	28-Sep-13	39.36		
21-Jun-13	35.39	10-Aug-13	22.56	29-Sep-13	57.30		
22-Jun-13	33.85	11-Aug-13	21.48	30-Sep-13	49.87		
23-Jun-13	39.61	12-Aug-13	26.89	1-Oct-13	46.21		
24-Jun-13	75.66	13-Aug-13	22.61	2-Oct-13	40.07		
25-Jun-13	104.59	14-Aug-13	21.30	3-Oct-13	36.73		
26-Jun-13	52.37	15-Aug-13	20.06	4-Oct-13	33.29		
27-Jun-13	38.51	16-Aug-13	18.99	5-Oct-13	30.96		
28-Jun-13	39.04	17-Aug-13	18.30	6-Oct-13	31.33		
29-Jun-13	30.25	18-Aug-13	18.68	7-Oct-13	29.22		
30-Jun-13	26.74	19-Aug-13	19.13	8-Oct-13	27.94		
1-Jul-13	23.90	20-Aug-13	17.97	9-Oct-13	26.33		
2-Jul-13	22.74	21-Aug-13	19.67	10-Oct-13	25.81		
3-Jul-13	17.99	22-Aug-13	19.81	11-Oct-13	26.35		

Table B8:05QD006 Discharge (L/s)

Date	Discharge (L/s)	Date	Discharge (L/s)	Date	Discharge (L/s)	Date	Discharge (L/s)
25-Apr-13	24,963.08	14-Jun-13	94,530.00	3-Aug-13	47,178.38	22-Sep-13	43,349.58
26-Apr-13	27,639.27	15-Jun-13	89,559.31	4-Aug-13	46,284.81	23-Sep-13	42,738.17
27-Apr-13	37,641.77	16-Jun-13	85,052.67	5-Aug-13	45,630.29	24-Sep-13	42,015.46
28-Apr-13	58,823.04	17-Jun-13	81,366.00	6-Aug-13	45,248.33	25-Sep-13	40,795.06
29-Apr-13	88,022.25	18-Jun-13	79,314.42	7-Aug-13	44,875.81	26-Sep-13	39,790.33
30-Apr-13	110,838.02	19-Jun-13	78,753.25	8-Aug-13	44,517.07	27-Sep-13	40,439.85
1-May-13	133,971.98	20-Jun-13	77,772.78	9-Aug-13	44,166.04	28-Sep-13	42,792.96
2-May-13	138,425.04	21-Jun-13	77,865.71	10-Aug-13	43,661.77	29-Sep-13	48,162.67
3-May-13	129,676.10	22-Jun-13	79,425.63	11-Aug-13	43,226.63	30-Sep-13	51,186.94
4-May-13	120,692.15	23-Jun-13	80,080.19	12-Aug-13	42,897.33	1-Oct-13	50,494.58
5-May-13	113,094.17	24-Jun-13	79,705.58	13-Aug-13	42,287.35	2-Oct-13	48,508.94
6-May-13	111,454.48	25-Jun-13	76,780.65	14-Aug-13	40,890.63	3-Oct-13	46,825.31
7-May-13	116,111.54	26-Jun-13	70,757.90	15-Aug-13	40,903.83	4-Oct-13	45,193.33
8-May-13	121,191.15	27-Jun-13	64,863.08	16-Aug-13	40,854.02	5-Oct-13	43,615.23
9-May-13	125,060.96	28-Jun-13	61,318.52	17-Aug-13	40,564.38	6-Oct-13	41,482.00
10-May-13	128,305.10	29-Jun-13	59,136.69	18-Aug-13	40,340.29	7-Oct-13	39,883.73
11-May-13	127,538.85	30-Jun-13	57,273.35	19-Aug-13	40,069.17	8-Oct-13	38,596.73
12-May-13	125,691.40	1-Jul-13	53,868.44	20-Aug-13	39,979.48	9-Oct-13	36,677.02
13-May-13	123,158.44	2-Jul-13	50,354.06	21-Aug-13	39,859.17	10-Oct-13	35,004.17
14-May-13	120,266.69	3-Jul-13	47,787.75	22-Aug-13	39,816.02	11-Oct-13	33,636.69
15-May-13	117,741.27	4-Jul-13	46,065.94	23-Aug-13	39,588.79	12-Oct-13	32,585.29
16-May-13	115,614.42	5-Jul-13	45,038.13	24-Aug-13	40,001.75	13-Oct-13	31,750.46
17-May-13	113,645.29	6-Jul-13	44,677.08	25-Aug-13	40,604.52	14-Oct-13	31,562.40
18-May-13	111,720.83	7-Jul-13	46,911.63	26-Aug-13	40,670.52	15-Oct-13	31,177.81
19-May-13	111,274.17	8-Jul-13	47,332.48	27-Aug-13	40,333.73	16-Oct-13	30,869.04
20-May-13	116,557.38	9-Jul-13	48,293.67	28-Aug-13	39,858.06	17-Oct-13	30,397.92
21-May-13	137,960.24	10-Jul-13	51,293.02	29-Aug-13	41,125.85	18-Oct-13	30,079.90
22-May-13	156,700.90	11-Jul-13	52,361.30	30-Aug-13	45,367.15	19-Oct-13	29,471.56
23-May-13	165,115.15	12-Jul-13	50,740.94	31-Aug-13	47,243.29	20-Oct-13	28,779.52
24-May-13	165,009.65	13-Jul-13	50,796.27	1-Sep-13	49,709.44	21-Oct-13	28,624.50
25-May-13	161,034.65	14-Jul-13	51,418.74	2-Sep-13	50,705.72	22-Oct-13	28,618.56
26-May-13	156,708.92	15-Jul-13	51,199.06	3-Sep-13	49,786.04	23-Oct-13	28,396.59
27-May-13	152,181.21	16-Jul-13	50,321.85	4-Sep-13	48,112.29	24-Oct-13	27,858.33
28-May-13	147,542.52	17-Jul-13	49,306.08	5-Sep-13	46,513.85	25-Oct-13	26,872.79
29-May-13	142,967.46	18-Jul-13	48,188.88	6-Sep-13	45,613.48	26-Oct-13	25,708.00
30-May-13	139,103.61	19-Jul-13	47,536.63	7-Sep-13	47,016.98	27-Oct-13	24,219.83
31-May-13	141,941.57	20-Jul-13	47,380.40	8-Sep-13	47,976.48	28-Oct-13	23,487.50
1-Jun-13	158,433.29	21-Jul-13	46,893.83	9-Sep-13	47,594.93	29-Oct-13	24,559.08
2-Jun-13	176,373.90	22-Jul-13	49,040.33	10-Sep-13	48,065.73	30-Oct-13	25,150.67
3-Jun-13	185,673.06	23-Jul-13	53,171.00	11-Sep-13	49,413.76	31-Oct-13	25,299.30
4-Jun-13	187,949.15	24-Jul-13	54,084.71	12-Sep-13	50,456.57	1-Nov-13	25,550.00
5-Jun-13	185,120.79	25-Jul-13	53,801.80	13-Sep-13	50,024.96	2-Nov-13	25,310.67
6-Jun-13	178,289.04	26-Jul-13	54,798.02	14-Sep-13	49,135.23	3-Nov-13	23,803.13
7-Jun-13	169,423.83	27-Jul-13	56,195.44	15-Sep-13	48,360.40	4-Nov-13	23,106.00
8-Jun-13	153,769.27	28-Jul-13	55,592.52	16-Sep-13	47,264.17	5-Nov-13	24,128.00
9-Jun-13	130,805.65	29-Jul-13	53,822.75	17-Sep-13	46,195.73	6-Nov-13	25,363.33
10-Jun-13	112,572.85	30-Jul-13	51,933.04	18-Sep-13	45,208.52	7-Nov-13	25,612.67
11-Jun-13	102,766.46	31-Jul-13	50,294.71	19-Sep-13	44,525.21		
12-Jun-13	99,315.26	1-Aug-13	49,230.44	20-Sep-13	44,190.79		
13-Jun-13	98,018.43	2-Aug-13	48,198.90	21-Sep-13	43,811.54		

APPENDIX C

Limitations of Report

LIMITATIONS OF REPORT

NATURAL SCIENCE INVESTIGATIONS

The scope of work, conclusions and recommendations given herein are specifically for this project and this client only, and for the scope of work described herein, and may not be sufficient for other uses.

Natural sciences are the sciences used in the study of the natural physical world, including physics, chemistry, geology, biology and botany.

The conclusions and recommendations regarding natural conditions which are presented in this report, and the quality thereof, are based on a scope of work authorized by the client. Note, however, that virtually no scope of work, no matter how exhaustive, can identify all habitat types or all natural features on land and in the water. For example, natural features between transects or fish net sets may differ from those encountered at sampling locations during the time of the field investigation; and may change with time. This report therefore cannot warranty that all conditions on or off the site are represented by those identified at specific locations.

Note that identification of natural features are limited by seasonal conditions which may preclude the identification of some natural features during the field investigation. Habitats are not static, but change with time, and the presence or absence of certain flora and fauna identified in the field are limited to the time of the investigation and may not always be representative of future conditions.

Any topographic benchmark and elevations used in this report are primarily to establish relative elevation differences for water or stratigraphy and are site specific.

Any comments given in this report on the presence of features including significant wetlands, significant portions of habitat for endangered or threatened species, fish habitat, significant woodlands, significant valley lands, wildlife habitat and significant areas of natural and scientific interests (ANSI's) are intended only for the guidance of the client. The scope of work may not be sufficient to determine all of the features which may affect site operation plans and potential development proposals. Clients should, therefore, make their own interpretations of the factual information presented and draw their own conclusions as to how the conditions may affect their work on the project.

Any results prepared by an analytical laboratory reported herein have been carried out by others, and DST Consulting Engineers Inc. does not warranty their accuracy. Similarly, DST cannot warranty the accuracy of information supplied by the client.