MORRISON HERSHFIELD

Resort Municipality of Whistler Landfill Annual Monitoring Report – 2016

Whistler, BC

Presented to:

Andrew Tucker

Resort Municipality of Whistler
4325 Blackcomb Way
Whistler, BC V0N 1B4

Report No. **5104016.07**

June 2017

TABLE OF CONTENTS

Page

List of Tables

TABLE OF CONTENTS

Page

List of Figures

Appendices

1. INTRODUCTION

This annual report incorporates landfill monitoring data collected in 2016. The Resort Municipality of Whistler (RMOW) former landfill site is located approximately 8 km west of Whistler Village and is accessed off Highway 99 on Cheakamus Lake Road. The location of the site is illustrated in Figure 1.

The Whistler landfill opened in 1977 and initially accepted residential, industrial, commercial and institutional waste. This continued until the landfill's operating permit was amended in 1988 to also accept construction and demolition waste. The landfill site was closed in October, 2005, to accommodate plans to use the area east of the site as the location of the Athletes' Village for the 2010 Winter Olympic Games. Between 1977 and 2005 approximately 350,000 tonnes of waste was disposed of at the Whistler Landfill (CH2M Hill, 2008a).

Construction of residential and commercial buildings in the area commenced in 2007 following the installation of a cover system and landfill gas (LFG) collection system in 2006.

Morrison Hershfield was retained by RMOW to complete the annual environmental monitoring and fulfill reporting requirements as set out in Section 3.31 of the 2005 Whistler Landfill Operational Certificate (MR-04693) and the Whistler Landfill Closure Plan (CH2M Hill, 2006a).

This current report documents the 2016 monitoring program and presents a summary of its findings.

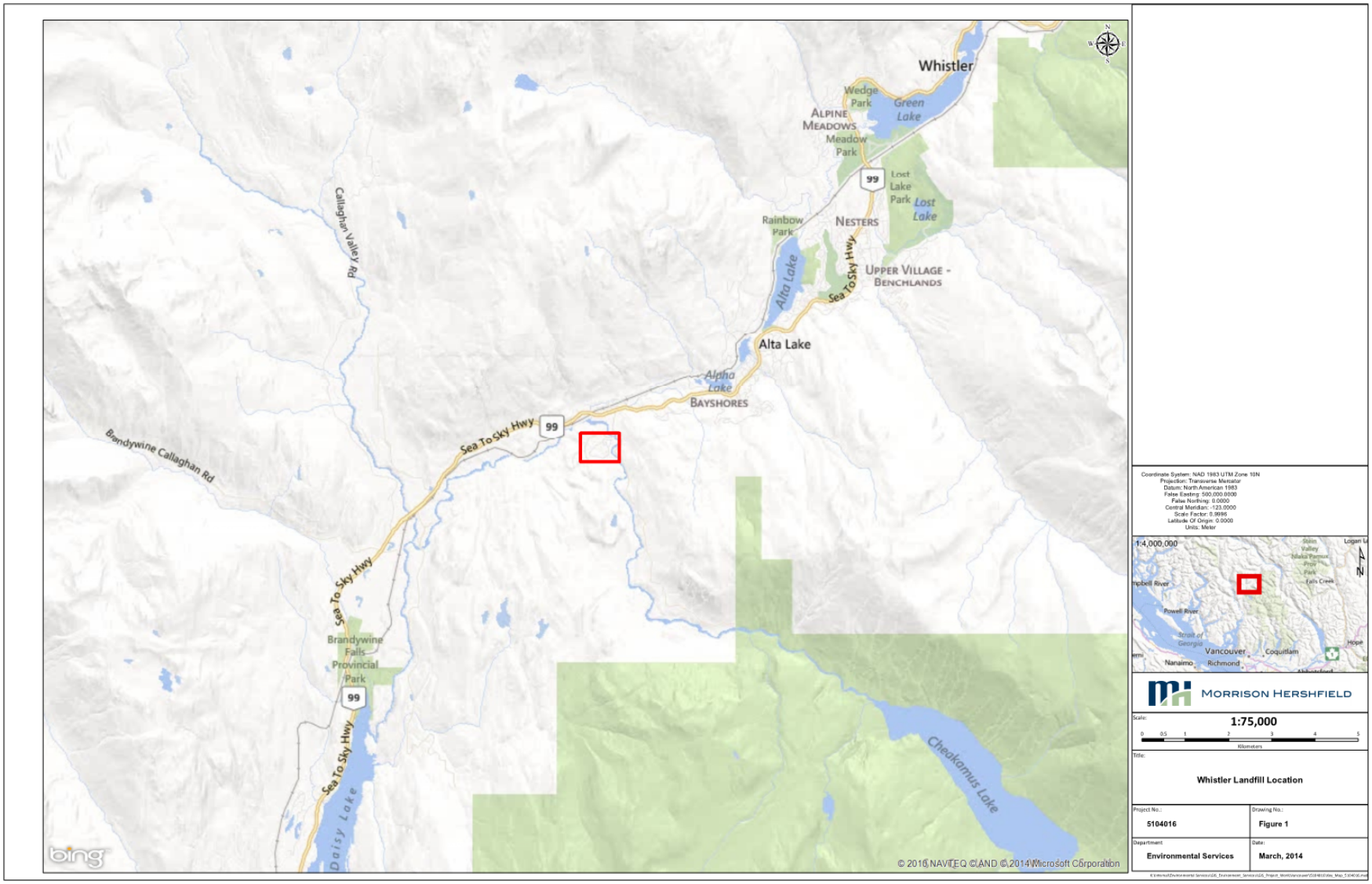


Figure 1: Former Whistler Landfill Location

1.1 Program Objectives

The overall objective of the Whistler landfill monitoring program is to help ensure and confirm that the closed landfill is not causing impacts to the surrounding environment. Three distinct facets of the former landfill site were assessed: on-site surface water, groundwater and migration of landfill gas (LFG).

The objectives of the Surface Water and Groundwater Monitoring Program are as follows:

- Determine if the landfill is negatively affecting local groundwater and surface water quality; and
- Apply corrective measures as necessary to minimize landfill effects on groundwater and surface water.

The objectives of the LFG monitoring program are as follows:

- Monitor levels of LFG generation;
- Assess the overall collection performance of the Landfill Gas Collection System (LFGCS)
- Identify the composition of LFG within the soil at monitoring probe locations; and
- Adjust LFGCS as necessary based on monitoring data results to prevent off-site gas migration.

As outlined in the Closure Plan (CH2M Hill, 2006a), the monitoring program was to be re-evaluated following the completion of monitoring over a 2-year period. This evaluation occurred in 2011. Subsequent monitoring reports, including this one, incorporate the MOE recommendations that were made in 2012. Specific monitoring requirements are outlines in Section 3.

1.2 Report Purpose

The purpose of this report is to address the reporting requirements of the facility's Landfill Operational Certificate (MR-04692) and the following requirements included in the Whistler Landfill Closure Plan:

- Annual reporting of monitoring data collected (2016); and
- Summary of maintenance activities that were competed on site in 2016, as well as any planned activities in 2017.

2. SITE DESCRIPTION

2.1 Landfill

The former landfill contains three distinct cells that were developed at different times over its lifespan.

- The northeast cell commenced in 1977 and contains residential waste in addition to industrial, commercial and institutional (ICI) waste. This material is not contained in a lined cell and relies on natural attenuation, coupled with a perimeter collection system, to manage leachate.
- Operations within the southwest cell began in 1988. Only construction and demolition (C & D) waste was accepted within this cell, which also relies on natural attenuation and a perimeter collection system to manage leachate.
- A central cell was developed in 1988 between the northeast and southwest cells for further residential and ICI waste. This area was developed with a high-density polyethylene (HDPE) liner and a leachate collection system.

In addition to the three cells, a biosolids storage area was installed at the south end of the landfill, covering a portion of the old southwest cell. Based on CH2M Hill (2006a) preliminary survey information from 2005, there was an estimated 6,000 m^3 of biosolids stockpiled there.

2.2 Hydrological Conditions

The former landfill site is located within the Cheakamus River watershed. The Cheakamus River itself is located approximately 300 metres north of the waste mass and flows along the eastern boundary of the Athletes' Village (CH2M Hill, 2006a). The surface water features are concentrated mainly to the perimeter of the site, which is due to a combination of the natural and constructed topography of the area.

2.3 Geological Conditions

The following description of geological conditions associated with the site is described by CH2M Hill (2008a).

> *In general, the site topography slopes from south to north. As described in the Whistler Landfill Closure Plan, within areas on the site and within adjacent lands, aggregate extraction activities have removed much of the natural overburden materials for use as industrial aggregates and replaced them with imported fill materials. As a result, the present ground surface associated with the landfill has likely been altered by industrial activities. As part of historical aggregate extraction activities conducted at the site, much of the natural overburden materials had been removed from the area and replaced with imported fill, resulting in a disturbance of the natural topography of the site. Exposed bedrock surface, characterized by glaciated surfaces and steep inclines, are present throughout the site. Areas between the exposed bedrock are infilled by coarse and medium grain sediments.*

Based on the results of the borehole investigation conducted by CH2M Hill in January 2006, the top layer of the site stratigraphy is composed of sand, gravel, cobbles, and boulders (fill material), followed by a gravel-sand layer. The subsurface includes a poorly graded fine sand layer with some silt, followed by still sandy silt located above the bedrock (green basalt) (CH2M Hill, 2006a).

Overburden at the site was generally found to be consistent across the advanced boreholes and is characterized by progressively finer particle size of the sediments with increasing depth. Overburden thickness is highly variable, ranging from 0 to greater than 21 m. The overburden is consistent with fluvial or near-shore lacustrine deposition environments.

2.4 Hydrogeological Conditions

The following description of hydrogeological conditions associated with the site is described by CH2M Hill (2006a) as follows:

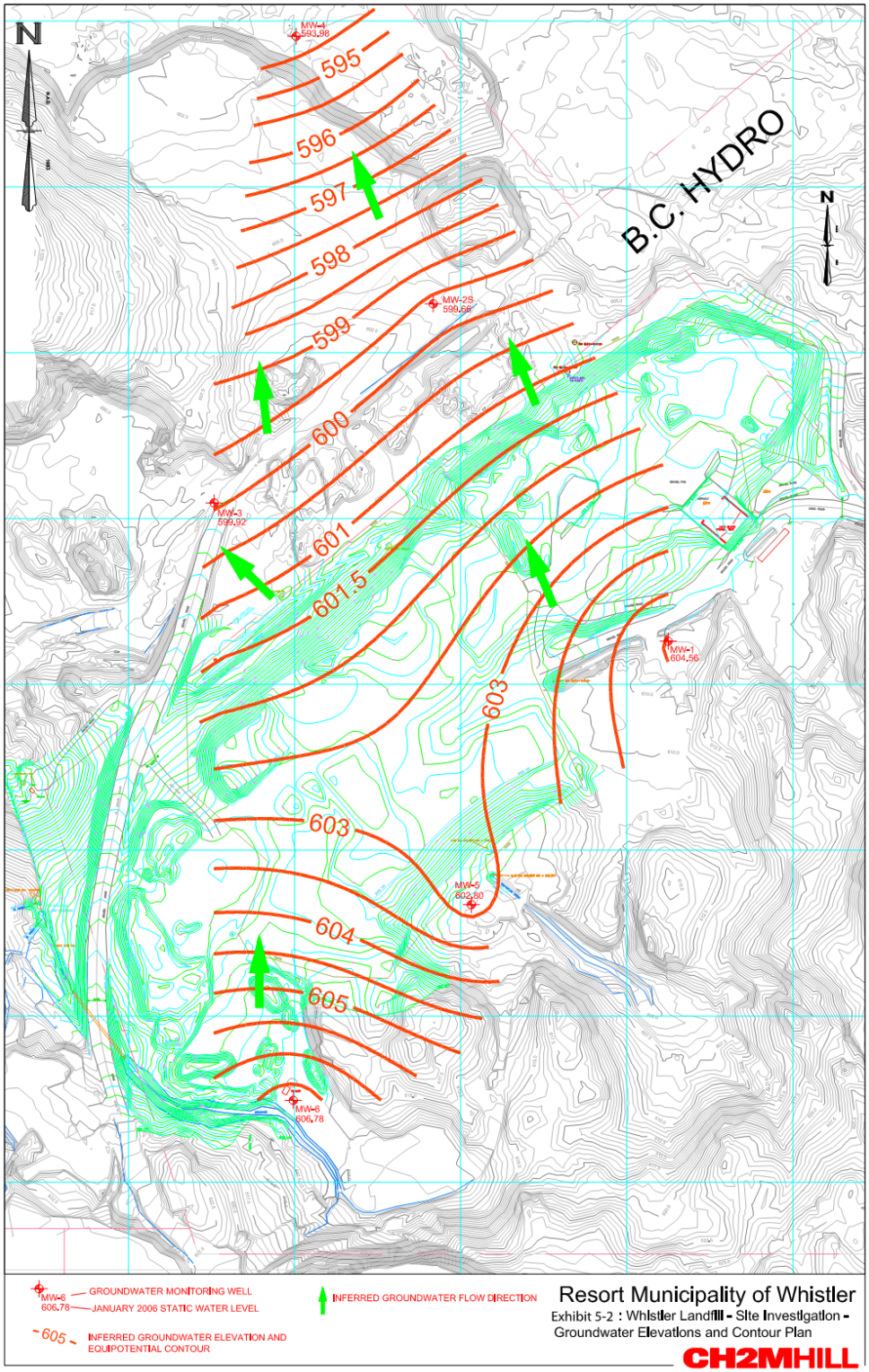
A single unconfined aquifer is within the overburden on the site. The saturated zone in most locations extends from the bedrock surface at depth to within less than one metre of the ground surface. Bedrock in the area was found to be relatively dry and presented no visual indication of water bearing fractures. Groundwater flow is generally in a south to north direction, consistent with the surface topography.

Interpreted groundwater flow at the site is illustrated in Figure 2 (from CH2M Hill, 2006a).

2.5 Climate

The long-term average climatic conditions (1971 – 2000) recorded at the Whistler meteorological station (approximately 8 km from the site) indicate the daily average annual temperature in the area is 6.3^{o}C, and the mean annual precipitation is 1229.1 mm. The precipitation can be further divided into an average of 850.1 mm of rainfall, and 411.2 cm of snowfall.

Figure 2: Groundwater Elevations and Flow Pattern at the Former Whistler Landfill Site (from CH2M Hill. 2006a)



3. MONITORING REQUIREMENTS

The following documents form the basis of the post-closure monitoring program and associated requirements, including parameters to be monitored. They are frequently referenced throughout this report.

- *Whistler Landfill Closure Plan, Final Report (CH2M HILL, 2006a)*
- *Whistler Landfill Gas Pre-Design Memorandum (CH2M HILL, 2006b)*
- *Landfill Operational Certificate MR-04692 (B.C. Ministry of Environment, 2005)*
- *Mitigation and Safety Measures for Reduction of Landfill Gas Migration Risks (CH2M HILL, 2008a)*
- *Landfill Gas Collection System Operation and Maintenance Manual (CH2M HILL, 2008b)*
- *Monitoring and Reporting Requirements (CH2M HILL, 2008c)*
- *Resort Municipality of Whistler Landfill Annual Monitoring Report – 2011 & Revised Monitoring Program Recommendations (Morrison Hershfield, June 2012).*

Monitoring and reporting requirements established in the Closure Plan (CH2MHill 2008c) were amended in 2012 (Morrison Hershfield, 2012) based on a review of monitoring data.

4. METHODOLOGY

4.1 Overview of Sampling Locations and Schedule

The various leachate, groundwater, surface water and landfill gas (LFG) monitoring locations are shown in Figure 3. Groundwater monitoring locations are identified as MW (monitoring well) followed by a number or number / letter combination (e.g. MW-3, MW-2S), a letter is added when both a shallow (S) and a deep (D) well were installed within a single borehole. Surface water sample locations are identified as SFC (surface), followed by a number or number / letter combination (e.g. SFC-2, SFC-2B), where the letter is used to indicate a second surface water sample on the same watercourse. L1 is the single leachate collection point.

The LFG collection system consists of the following components:

- Thirteen vertical LFG extraction wells connected to horizontal LFG collection trenches covering the landfill cell footprint;
- A 200mm diameter header approximately 800m in length that carries the LFG from the vertical well and horizontal trench network to a flare station;
- A LFG abstraction plant on the north side of the property that burns the collected LFG in a candle-stick flare;
- Twenty-one monitoring probes (MP) located around the perimeter of the landfill cell; and
- Approximately 91 test ports within selected buildings and residences in close proximity to the landfill.

The landfill gas monitoring probes around the circumference of the landfill mass are identified as MP followed by a number (e.g. MP 14). Also identified in Figure 3 are several components of the LFG collection system, including: thirteen LFG extraction wells (labeled as “W” followed by a number [e.g. W11]), the flare station, and header valves. A new monitoring probe was installed in November 2012 to the west of MP17 (identified as MP17A). As of December 2012, sampling commenced at MP17A and was omitted at MP17.

As per the requirements outlined in CH2M Hill (2008c) and confirmed by the MOE in 2012, groundwater and surface water monitoring have been conducted quarterly. Quarterly monitoring is tracked and reported based on a calendar year.

Figure 3: Post-Closure Monitoring Sites at the Former Whistler Landfill

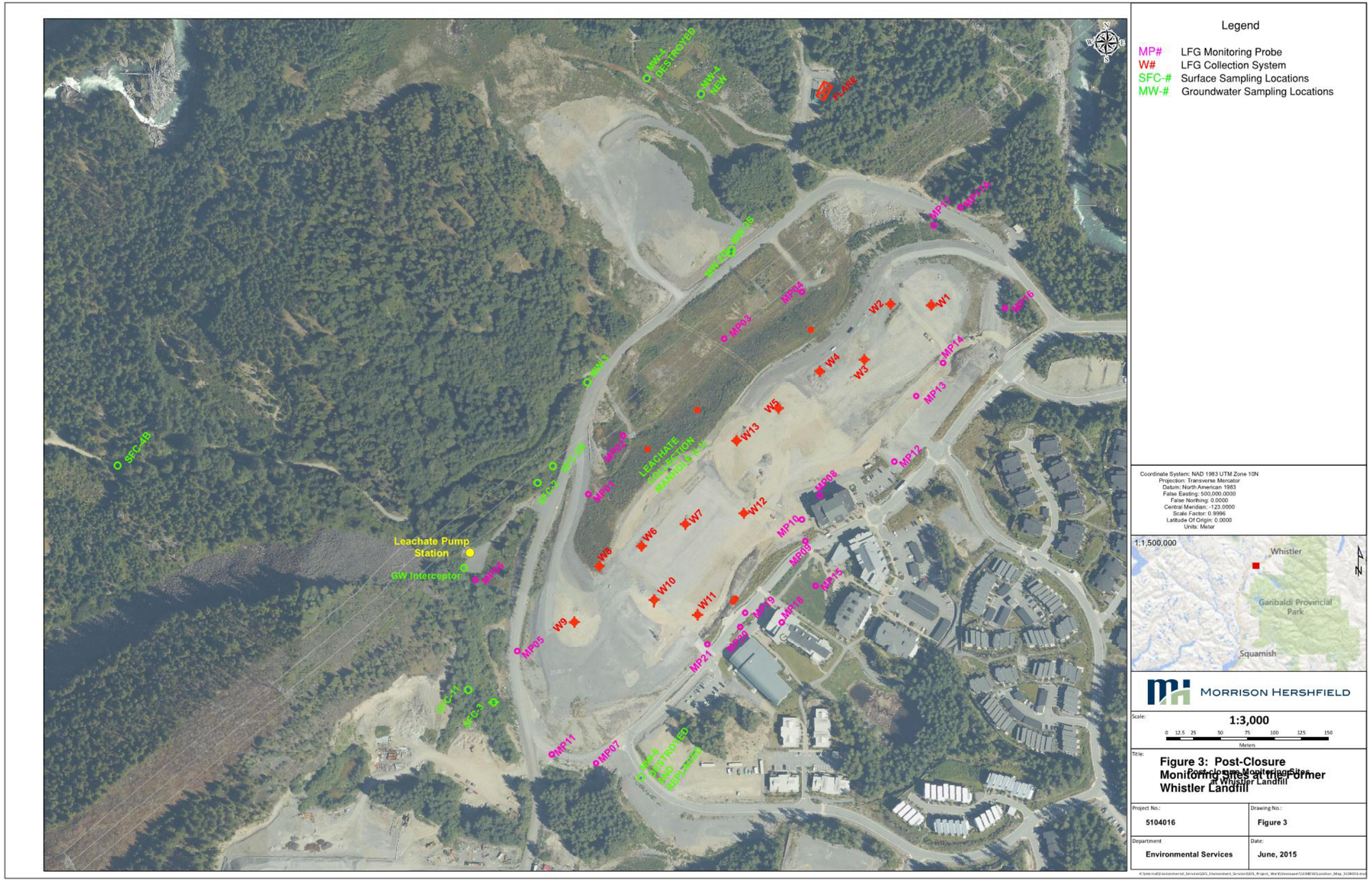


Table 1: 2016 Quarterly Monitoring Dates

Monitoring Dates 2016	
Quarter 1 (Q1 2016)	March 23, 2016
Quarter 2 (Q2 2016)	June 29, 2016
Quarter 3 (Q3 2016)	September 21, 2016
Quarter 4 (Q4 2016)	December 22, 2016

The 2016 leachate, groundwater and surface water monitoring program was completed by Morrison Hershfield. The LFG monitoring program that has been in effect since 2009 has been conducted by Norseman Engineering Ltd. on a minimum monthly basis. During the winter months monitoring occurs on a weekly basis (November through April) when there is snow cover on the landfill or frozen ground (i.e. conditions that could facilitate subsurface LFG migration).

4.1.1 Leachate Monitoring

A leachate collection point (Leachate Manhole) located on the down gradient side of the landfill mass (Figure 3) was sampled to provide an indicator of the elevated concentration of target parameters within the landfill cell. Leachate samples were obtained using a plastic pail rinsed three times with the leachate water.

A leachate sample was collected during first quarter sampling event. In addition to the sample for laboratory analysis, standard leachate quality parameters were collected and measured during the sampling event. The parameters measured include: pH, temperature (ºC), dissolved oxygen (mg/L), and conductivity (µS/cm). Field parameters were measured using an YSI model 556 multi-probe meter. Although scheduled to collect a sample during the third quarter as well, there was so little leachate in the manhole that a sample could not be collected.

Sampling is also conducted at the Groundwater (GW) Interceptor, adjacent to the Leachate Pump Station to the west and north of the landfill mass (Figure 3). The GW Interceptor is located adjacent to the existing leachate pump station in the southwest area of the closed landfill. The interceptor consists of 24 metres of perforated HDPE pipe (60 cm diameter). A new leachate collection wet well and pump station were constructed in 2009 in close proximity to the GW Interceptor. Intercepted groundwater is piped to the new leachate pump station wet well where it is pumped, along with landfill leachate, to the RMOW Wastewater Treatment Plant (WWTP) for treatment.

The interceptor is located downgradient from the unlined Construction and Demolition (C&D) waste cell and was (presumably) installed to minimize the potential for off-site impacts associated with groundwater influenced by the C&D waste cell.

Samples were obtained using a plastic pail rinsed three times with the water in the manhole. One sample was collected during all quarterly samples in 2016.

4.1.2 Groundwater Monitoring

CH2M Hill originally installed six monitoring wells (MW-1 to MW-6), one of which (MW-2) was constructed with a shallow and a deep screen, for a total of seven initial monitoring points. Monitoring wells were constructed with 50 mm (2") diameter new PVC pipe. Screen intervals were constructed with 50 mm (2") diameter #10 slot PVC screen. The depth and screen length of each well was selected in the field based on observations made during drilling. Bentonite seals were installed (as required) to prevent infiltration of surface water into the well (CH2M Hill, 2006a).

The groundwater monitoring locations are situated both up- and down-gradient of the landfill to monitor the potential migration of any leachate, and to be able to separate groundwater impacts of residential and commercial development from impacts of the landfill. MW-6 is up gradient of the landfill mass and is used to represent the local background conditions for the area, while all of the other wells are down gradient.

The installation of these wells by CH2M Hill was conducted prior to the extensive grading that occurred during construction of the Athlete's Village. During grading and construction operations four of the existing wells were destroyed: MW-1, MW-4, MW-5 and MW-6. The four destroyed wells are indicated in Figure 3 with the monitoring well name followed by "destroyed" (i.e. MW-1 DESTROYED).

Three of the four destroyed monitoring wells (MW-4, MW-5, and MW-6) were replaced prior to 2010 sampling to prevent data gaps in the monitoring program. However, due to insufficient groundwater levels since 2010, the replacement for MW-5 has since been omitted from the sampling program. Table 2 provides a summary of groundwater wells monitored in 2016.

Table 2: 2016 Groundwater Monitoring Events and Locations

Site	Site Description	Q1	Q2	Q3	Q4
MW-2S and 2D	Immediately down gradient of the landfill footprint	✔	✔	✔	✔
MW-3	Down gradient of the landfill mass	✔	✔	✔	✔
MW-4	Down gradient of the landfill mass	✔	✔	✔	✔
MW-6 *	Up gradient of the landfill mass (background)	✔	✔	✔	

*Could not locate well during Q4 sampling therefore not sampled in Q4.

Groundwater samples were collected using dedicated HDPE tubing and foot valves. The procedure for the collection of all groundwater samples follows that described in CH2M Hill (2008c). Laboratory analyses for all of the samples were performed by CARO Analytical Services in Richmond, BC. Appendix A provides a summary of the analytical results associated with groundwater quality monitoring. Appendix C provides a summary of the parameters that were analyzed for, the detection method and detection limit.

All groundwater samples collected for dissolved metals analysis were filtered and preserved in the field. In addition to the samples for laboratory analysis, field parameters were also collected

using a YSI model 556 multi-probe meter (or similar). The static water level depth in each well prior to sample collection was also measured.

4.1.3 Surface Water Monitoring

Table 3 provides a summary of the surface water sites sampled in 2016. Sample station SFC-11 is located cross-gradient from the landfill and the tributary extends southwest away from the landfill; therefore the watershed for this tributary does not include the landfill area (Figure 3). Sample station SFC-2B is located in a watercourse which originates in the wetland feature immediately adjacent to the leachate collection point. It is also located immediately down gradient of the lined ICI and Residential Waste Cell and the historic biosolids and wood chip storage area. SFC-2 is located approximately 10 m downstream of SFC-2B. The source of the water in SFC-2 is from a culvert extending from the Athlete's Village that collects surface water runoff. SFC-3 is located in a perimeter watercourse. SFC-3 and SFC-11 are up gradient of the landfill and provide indicators of natural background surface water conditions.

Table 3: 2016 Surface Water Monitoring Events and Locations

Site	Site Description	Q1	Q2	Q3	Q4
SFC-2	Down stream of landfill	✔	✔	✔	✔
SFC-2B	immediately adjacent to the leachate collection point	✔	✔	Not enough water to sample.	Not enough water to sample.
SFC-3	Located in a perimeter watercourse (background)	✔	✔	✔	✔
SFC-11	Cross gradient from the landfill (background)	✔	✔	✔	✔
SFC-4B	Furthest down gradient and the closest monitoring point to the Cheakamus River	✔	✔	✔	✔

Surface water samples were collected using the techniques outlined in CH2M Hill (2008c). Field parameters were also collected using a YSI model 556 multi-probe meter (or similar). Appendix B provides a summary of the field data that was collected.

Similar to the groundwater samples, all surface water samples were sent to CARO in Richmond, B.C. for analysis. Appendix A provides a summary of the analytical results associated with groundwater quality monitoring. Appendix C provides a summary of the parameters that were analyzed for, the detection method and detection limit. As required, the surface water samples collected for total metal analyses were not filtered however they were preserved in the field with nitric acid.

4.1.4 Landfill Gas Monitoring

Landfill gas monitoring was completed by Norseman Engineering Ltd. on a weekly (winter months) to monthly basis throughout the year. Monitoring at the building ports is conducted twice per year during months when there is snow pack, at least one month apart. Standard monitoring procedures were followed for LFG monitoring.

The following data has been collected:

- Methane content at the subsurface probes;
- Methane and oxygen contents, flow rate, and inlet suction at the flare station; and
- Valve position (percent open), methane content and suction at each of the extraction wells (monitored for assessing the operational efficiency of the LFG collection system).

Pressure at the wells is measured using 0 – 5" water column (w.c.) or 0 – 0.5" w.c. magnahelic pressure gauges. Methane content, as percent of the Lower Explosive Limit (LEL), is detected using a Gastech device, model NP204[1]. Other parameters measured at the flare station are obtained from the programmable logic controller associated with the LFG collection system. The data gathered are important for assessing the overall function of the LFG collection system, particularly the concentration of methane present in the landfill for flaring, and to determine if the gas is escaping into the atmosphere or migrating off-site.

As per Morrison Hershfield (2012), the frequency of LFG monitoring should increase from monthly or weekly to daily in the event of LFG collection system malfunction or maintenance requirements, or if detection of methane in excess of the trigger level (10% LEL) is observed. Morrison Hershfield (2012) also notes that, following detection of methane in excess of the trigger levels, monitoring should be increased to daily at all of the monitoring probes and any buildings within 100 m of the MP which exceeded the trigger level will be monitored until there are two consecutive days of undetectable methane content in the monitoring probes. If gas concentrations at the property boundaries remain above recommended trigger limits for more than 2 days, additional measures are outlined in the revised LFG monitoring program.

4.2 Quality Assurance and Quality Control

In addition to using an accredited laboratory, Quality Assurance/Quality Control (QA/QC) measures were applied to the monitoring program to determine the accuracy and precision of the field results and the laboratory testing procedures.

For each surface and groundwater sampling event a sample replicate and a travel blank were submitted for analysis. Replicate samples were also collected from one monitoring location each Quarter using the word "rep" as denoted in the sample ID. Travel blanks are used to confirm that the samples have not been contaminated during transportation from the site to the laboratory. The samples are transported in laboratory supplied coolers, remain closed, and are only reopened in the laboratory for analyses.

[1] A concentration of 5% methane in the air is "the lower explosive limit" (LEL), and concentrations equal to or greater than the LEL are considered hazardous (BC MOE, 1996)

5. RESULTS AND INTERPRETATION

Water quality monitoring at Whistler Landfill has included a broad suite of parameters, including the following groups of parameters:

- Dissolved & total metals
- Hardness
- Alkalinity
- Total Dissolved Solids
- Ammonia
- Dissolved Organic Carbon (DOC)
- Volatile Organic Compounds (VOCs)
- Chemical Oxygen Demand (COD)
- Extractable and Volatile Hydrocarbons (EPH & VH)
- BTEX
- Polycyclic Aromatic Hydrocarbons (PAHs)

There are a limited number of key parameters that have been reviewed as both landfill related *indicator* parameters and parameters of potential *concern*:

Indicators parameters are compounds that are indicative and reliable indicators of groundwater impact from waste disposal, but in of themselves may not be a compound of concern. For the purposes of this water quality review, the landfill-related indicator parameters assessed include:

- chloride,
- conductivity,
- hardness,
- sulfate, and
- iron and manganese.

Parameters of potential concern at landfill sites consist primarily of ammonia (which can be toxic to aquatic life if it reaches an aquatic receptor at high enough concentrations). Other parameters of concern, may include: presence of:

- ammonia
- hydrocarbons and/or volatile organic compounds, and
- possibly elevated concentration of heavy metals.

5.1 Groundwater

Monitoring locations up gradient as well as down gradient of the closed landfill provide a method to identify parameters that occur at naturally elevated levels in the local environment. MW-6 is up gradient of the landfill and is used to represent the local background conditions for the area, whereas MW-4 is down gradient of the landfill and the closest groundwater monitoring point to the Cheakamus River.

The regulatory framework that applies to this project for groundwater water quality include the provincial standard for landfill closure: Schedule 6, Column II (Generic Numerical Water Standards for Aquatic Life) of the B.C. Contaminated Sites Regulation. This is a requirement that is stated in the "Closure Plan". The standards assume a minimum 10 to 1 dilution factor is available prior to the groundwater reaching any water body that supports aquatic life.

In addition to the comparison to the regulatory standards, the tables showing the ground-water results also include a comparison to the B.C. Working and Approved Water Quality Guidelines (per MoE reporting recommendations). These guidelines are more restrictive since they generally apply to receiving water conditions and not to groundwater within the landfill site. The guidelines provide concentrations to prevent detrimental effects in water bodies that support aquatic life. Unlike the B.C. Contaminated Sites regulation there is no dilution factor incorporated; thus the values represented in the BC Ambient Water Quality guidelines are more stringent for many parameters. Therefore, while not directly applicable to monitoring locations at the landfill site, these guidelines provide a point of reference for assessing contaminant levels over time.

A summary of the groundwater quality results in comparison to the applicable standards and guidelines are provided in Table 4 and Table 5. Detailed laboratory results can be found in Appendix A.

5.1.1 Landfill-Related Indicator Parameters in Groundwater

The concentrations of the indicator parameter sulfate is elevated at MW-2D above BC Ambient Water Quality Guidelines (sulfate levels in MW-2S are below the guidelines). It is suspected that the wells immediately down gradient of the landfill footprint (MW-2D and MW-2S) are impacted by leachate. In addition, MW-2S exceeded the BC Water Quality Guidelines for manganese and iron. MW-2D exceeded the BC Water Quality Guidelines for iron.

The chloride concentration detected in MW-6 is elevated compared to other down gradient wells. Since this well is up gradient of the landfill footprint, it is suspected that these concentrations are related to road salt application on the sidewalk and road immediately adjacent to the monitoring well, and not indicative of landfill leachate impacts. Additionally MW-3 and MW-4 were elevated in both iron and manganese and exceeded BC Ambient Water Quality guidelines.

5.1.2 Landfill Related Parameters of Potential Concern in Groundwater

Ammonia- Ammonia is the primary contaminant of potential concern with municipal solid waste sites. It is related to the decomposition of organic matter in the landfill. Ammonia is a potential concern because of its relative mobility in groundwater systems that allow it to be potentially discharged to surface water and its toxicity to aquatic organisms (if concentrations are sufficiently elevated).

Ammonia concentrations above the applicable standard (18.4 mg/L for pH conditions of <7.0) were not detected in any of the wells.

Similar to previous results, ammonia was detected in monitoring wells located just down gradient of the landfill footprint (MW-2S/2D) at concentrations above background levels (range in concentration between 2.97 and 12.5 mg/L). Concentrations at MW-4 are above 1mg/L, ranging from 1.63 to 2.19 mg/L, which is elevated above the background levels. Concentrations at MW-3 and MW-6 are well below 1 mg/L, which is consistent with background levels.

Hydrocarbons and Volatile Organic Compounds - Hydrocarbons and volatile organic compounds (VOCs) are routinely tested for at landfills. All groundwater samples collected and analyzed for hydrocarbons and VOC compounds in 2016 were below the applicable standards. Chlorobenzene was marginally above the guidelines, which was near the detection limits.

Heavy Metals - Heavy metals (such as cadmium, lead nickel, arsenic, mercury, zinc) are also sometimes considered compounds of concern at landfill sites.

There was three heavy metal detections above the applicable regulatory standard. At MW-4, three monitoring observations indicated total cadmium concentrations of 0.00191 mg/l, 0.00046 mg/L and 0.00012 mg/L in Q1, Q2 and Q3 respectively, which in Q1 marginally exceeded the applicable Schedule 6, Column II standard (0.0005 /mg/L). All other cadmium measurements in 2016 at this location were below the standard. Previous monitoring results indicate that levels of naturally occurring cadmium in groundwater (as measured at MW-6) may be contributing to elevated levels of cadmium at the site (2014 Annual Report; Morrison Hershfield, 2015). Cobalt was another metal that also exceeded the standard in 2016 at MW-4, the Q1 concentration of dissolved cobalt was 0.0428 mg/L which slightly exceeded the Schedule 6 standard of 0.04 mg/L. All other cobalt measurements for MW4 were below the Standard. Antimony at MW-6 in Q2 was 0.207 mg/L which is marginally above the Schedule 6, Column II standard (0.2 mg/L). However, all other results for cobalt at MW-6 were below the standard for 2016.

5.1.3 Groundwater Quality Summary

Indicators of leachate influenced groundwater quality appears at this time to be limited to locations immediately down gradient of the landfill footprint (MW-2S / MW-2D), and further down gradient of the landfill (MW-4). Concentrations in groundwater of landfill-leachate contaminants of concern (COCs) are below the applicable regulatory standards, with the exception of one exceedance of dissolved cadmium and one exceedance of cobalt from down gradient well MW-4 and one minor exceedance of antimony at the up gradient MW-6. Elevated cadmium concentrations are consistent with previous sampling results.

There was only one detection of any hydrocarbon compound in all the groundwater sampling. This detection of chlorobenzene was below the regulatory standard and near the detection limit.

5.2 Surface Water

Similarly to groundwater, there are surface water monitoring locations both up gradient and down gradient of the landfill. SFC-3 and SFC-11 are up gradient of the landfill and provide indicators of natural background surface water conditions. SFC-4B is the furthest down gradient and the closest monitoring point to the Cheakamus River.

The regulatory framework that applies to this project for surface water quality is the same as for groundwater and includes the provincial standard for landfill closure: Schedule 6, Column II (Generic Numerical Water Standards for Aquatic Life) of the B.C. Contaminated Sites Regulation.

Surface water results are also compared to the B.C. Working and Approved Water Quality Guidelines (per MoE reporting recommendations) in the same manner as groundwater results. These guidelines are more restrictive since they generally apply to receiving water conditions and not to locations within the landfill site. The guidelines provide concentrations to prevent detrimental effects in water bodies that support aquatic life. Unlike the B.C. Contaminated Sites regulation there is no dilution factor incorporated; thus the values represented in the BC Ambient Water Quality guidelines are more stringent for many parameters. Therefore, while not directly applicable to monitoring locations at the landfill site, these guidelines provide a point of reference for assessing contaminant levels over time.

A summary of the surface water monitoring results in comparison to the applicable standards and guidelines are provided in Table 6. Complete laboratory results can be found in Appendix A.

5.2.1 Landfill-Related Indicator Parameters in Surface Water

There were no indicator parameters that exceeded the Schedule 6, Column II standards in any surface water sample collected in 2016. Hardness, conductivity, sulfate, iron and manganese were consistently elevated at SFC-2 and SFC-2B relative to background concentrations. These results indicate probable influences of landfill leachate at these locations.

5.2.2 Landfill Related Parameters of Potential Concern in Surface Water

Ammonia – Analyses for ammonia have been conducted at each monitoring location during all sampling events in 2016. None of the surface sample water quality results in 2016 exceeded the Schedule 6, Column II standard for ammonia.

Heavy Metals – Copper concentrations were above the respective Schedule 6, Column II standards at SFC-2B in Q1.

5.2.3 Surface Water Quality Summary

Hardness, conductivity, sulfate, iron and manganese (and aluminum) were consistently elevated at SFC-2 and SFC-2B relative to background concentrations and were regularly above BC Water Quality Guidelines. These locations appears to be influenced by landfill leachate.

Monitoring of the nearest receiving waterbody (Cheakamus River) is not incorporated within this monitoring program (as defined by the provincially-approved Landfill Closure Plan). Sampling results from the furthest down gradient surface water monitoring location, and the one nearest the Cheakamus River, at SFC-4B, provide the best indication of potential impacts to receiving water quality resulting from the site. All regulatory standards for indicator parameters and parameters of potential concern were met during each of the sampling events at this location in 2016. All BC water quality guidelines were also met at SFC-4B with the exception of iton concentrations on two occasions.

5.3 Leachate & Groundwater Interceptor

Leachate is captured and treated by the Whistler Wastewater Treatment Plant. For monitoring purposes, the leachate quality is tested as part of this monitoring program. The monitoring results will help to determine when in the future leachate treatment will no longer be required.

A technical memo summarizing the water quality conditions at the Groundwater (GW) Interceptor adjacent to the Leachate Pump Station was developed in December 2014 (Morrison Hershfield, 2014a). The memo provides recommendations based on the water quality conditions; namely to continue quarterly monitoring at this location and incorporate the results into the annual monitoring reports.

A summary of the leachate monitoring results in comparison to the applicable standards and guidelines are provided in Table 7 and Table 8. Complete laboratory results can be found in Appendix A.

5.3.1 Landfill-Related Indicator Parameters in Leachate

The concentration of the indicator parameters were generally higher at the GW Interceptor than at the Leachate Manhole. Indicator parameters of iron and manganese exceeded the BC Water Quality guidelines in the GW Interceptor. Iron was the only indicator parameter that exceeded the BC Water Quality guidelines at the Leachate Manhole.

5.3.2 Landfill Related Parameter of Potential Concern in Leachate

Ammonia – Observed ammonia levels were relatively low (for leachate) with no exceedances of the Schedule 6, Column II standard. Ammonia and nitrate were higher in the Leachate Manhole compared to the Groundwater (GW) Interceptor.

Hydrocarbons and Volatile Organic Compounds – Hydrocarbons and volatile organic compounds were not detected at the Leachate Manhole. However, several compounds were detected in the GW Interceptor, specifically acenaphtene, anthracene, benzo(a)pyrene (however this was at the detection limit), fluorene, fluoranthene, and pyrene. None of these

parameters exceeded the Schedule 6, Column II standards. However, pyrene concentrations frequently exceed the water quality guidelines in the GW Interceptor.

Heavy Metals –Metal concentrations in the Leachate Manhole and GW Interceptor were all well below the applicable standards. At the Leachate Manhole iron was slightly elevated. While iron and manganese were slightly elevated at the GW Interceptor.

5.3.3 Leachate Quality Summary

Measured water quality from the Leachate Manhole and GW Interceptor did not exceed the Schedule 6, Column II standards during the 2016 monitoring program for ammonia.

Leachate continues to be collected and treated at the RMOW Wastewater Treatment Plant prior to discharge.

5.4 Landfill Gas

Methane measurements are obtained from perimeter monitoring probes located around the landfill.

Trigger levels for LFG monitoring results which indicate when additional action is required are based on the B.C. Environmental Monitoring Guidelines. They are provided in the Operation and Maintenance Manual for the project (CH2M Hill, 2008b) and the permitted requirements are as follows:

- Methane gas concentrations in excess of, or predicted to exceed 10% LEL in subsurface soils at the eastern and southern property boundaries of the Whistler Landfill (MP 8 through MP 21, excluding MP 11)

- Methane gas concentrations in excess of, or predicted to exceed, 25% LEL in soils at the western and northern property boundaries (MP1 through MP7, and MP 11).

A summary of the landfill gas monitoring results is provided in Table 9.

5.4.1 Landfill Gas Results

On January 29 methane was detected at low concentration at monitoring probe (M.P.) 14 located next to the 1025 Legacy Way. More vacuum was directed to that area two wells with lower amounts of methane were also adjusted downward. The methane reading was reduced to zero at the end of the day. Also in January, there was a trace of methane at M.P.16, located near the tennis courts in Baley Park. Upon further testing the methane level had dropped to zero. In November 2016, there was a trace of detectable methane at M.P. 12 at the south end of 1025 Legacy Way. The well was adjusted to concentrate more vacuum to the area closest to 1025 Legacy Way and the flare flow was adjusted upwards slightly. There was no detection of methane at this monitoring probe the next day (Norseman Engineering, 2016).

Small amounts (0.5%) of methane gas were detected at M.P. 14 next to 1025 Legacy Way on December 9 and then again on December 16, 2016. The reason is probably cold weather related to frozen ground forcing the landfill gas to traverse horizontally before it finds a place to

escape into the atmosphere. With warmer weather after December 16 the methane levels were no longer detectable by December 23. Regular testing and adjustment of the landfill gas extraction wells was performed to increase landfill gas extraction rates and prevent off site migration of landfill gas (Norseman Engineering, 2016a).

The first of two testing events of the residential monitoring ports required during snow covered months was performed in November and December (over a period of four to five days, due to a lack of daylight). All of the testing performed in the residences and multi-story buildings in Cheakamus Crossing during December 2016 showed no methane migration into any of the buildings (Norseman Engineering, 2016a). The second testing even of the residential monitoring ports was completed in the 2017 reporting year and will be covered in a future report.

5.4.2 Landfill Gas Summary and Recommendations

Based on 2016 data, the operation and maintenance of the landfill gas system ensured that landfill gas is effectively extracted from the landfill area and lateral migration is prevented. Continued operation and monitoring as prescribed in the methodology (Morrison Hershfield 2012) is recommended.

5.5 Maintenance Activities

Routine maintenance of monitoring probes were completed on as needed basis during monthly (and weekly) monitoring activities by Norseman Engineering. In January the cabinet methane sensor had been replaced. M.P.19, located near the bus stop south of the Hostel was damaged by snow clearing equipment (Norseman Engineering, 2016). The lid could not be pried off but the rubber tube inside could still be accessed for testing. The monitoring lid was then repaired in February (Norseman Engineering, 2016b).

In February the flare ignition system was not working and it was suspected that the spark plug or the solenoid valve supplying propane to the flare had failed. In addition there was a suspected complete blockage of a vacuum pipe (likely leachate) which diverted all of the vacuum to the north end wells (Norseman Engineering, 2016b). In March the blockage (due to liquid leachate – same occurrence in June 2015) had been mostly removed (Norseman Engineering, 2016c). In June, there was another occurrence of the blockage which was removed in the same location (Norseman Engineering, 2016d). After June there was no blockage issues for the remainder of the year.

Landfill gas wells (W) were checked for operational status in June during the construction of a new BMX track on the site. Norseman Engineering confirmed that W2, W3, and W4 were intact and had not been impacted by the construction. W10 was checked and was found to be leaking some low quality gas into the system through a stuck valve which was then corrected (Norseman Engineering, 2016d).

6. RECOMMENDATIONS

Continued monitoring in 2017 is required as per the Closure Plan. Data from the 2016 monitoring results are generally consistent with the results from previous years' monitoring. There were no new or extraordinary issues noted in the groundwater, surface water, leachate, or landfill gas monitoring results. No remedial actions are recommended based on the 2016 monitoring results.

It is recommended that signage or some form of identification is installed at MW-6 due to the construction in the area. The sign would provide some protection for the well and simplify locating the well during the quarterly sampling.

Future sampling and analytical protocols should follow the revised monitoring program recommendations outlined in Morrison Hershfield (2012).

7. REFERENCES

B.C. Ministry of Environment. 1996. Guidelines for Environmental Monitoring at Municipal Solid Waste Landfills. Accessed via website: http://www.env.gov.bc.ca/epd/mun-waste/waste-solid/landfills/monitoring/index.htm

B.C. Ministry of Environment. 2005. Landfill Operational Certificate MR-04692.

Canadian Council of Ministers of the Environment (CCME), 2001. Canadian Soil Quality Guidelines For The Protection Of Environmental And Human Health: Arsenic (inorganic) (1997). Updated In: Canadian environmental quality guidelines, 1999, Canadian Council of Ministers of the Environment, Winnipeg. Accessed January 5, 2012, via website: http://ceqg-rcqe.ccme.ca/download/en/257/

CH2M Hill. 2008a. Mitigation and Safety Measures for Reduction of Landfill Gas Migration Risks. Prepared for the Regional Municipality of Whistler.

CH2M Hill. 2008b. Landfill Gas Collection System Operation and Maintenance Manual. Prepared for the Regional Municipality of Whistler.

CH2M Hill. 2008c. Monitoring and Reporting Requirements. Prepared for the Regional Municipality of Whistler.

CH2M Hill. 2006a. Whistler Landfill Closure Plan. Final Report prepared for the Regional Municipality of Whistler.

CH2M Hill, 2006b. Whistler Landfill Gas Pre-Design Memorandum. Prepared for the Regional Municipality of Whistler.

Morrison Hershfield, 2012. Resort Municipality of Whistler Landfill Annual Monitoring Report – 2011 & Revised Monitoring Program Recommendations. Prepared for the Regional Municipality of Whistler.

Morrison Hershfield, 2014. Resort Municipality of Whistler Landfill Annual Monitoring Report – 2013. Prepared for the Regional Municipality of Whistler.

Morrison Hershfield, 2014a. Whistler Landfill Groundwater Interceptor – Water Quality Review and Recommendations Memo. December 31, 2014.

Morrison Hershfield, 2015. Resort Municipality of Whistler Landfill Annual Monitoring Report – 2014. Prepared for the Regional Municipality of Whistler.

Morrison Hershfield, 2016. Resort Municipality of Whistler Landfill Annual Monitoring Report – 2015. Prepared for the Regional Municipality of Whistler.

Norseman Engineering, 2016. Whistler Monitoring Report # 81 (January).

Norseman Engineering, 2016a. Whistler Monitoring Report # 92 (December).

Norseman Engineering, 2016b. Whistler Monitoring Report # 82 (February).

Norseman Engineering, 2016c. Whistler Monitoring Report # 83 (March).

Norseman Engineering, 2016d. Whistler Monitoring Report # 86 (June).

MORRISON HERSHFIELD

TABLE 4: 2016 GROUNDWATER QUALITY - GENERAL CHEMISTRY AND DISSOLVED METALS

SAMPLE LOCATION	MW2S				MW2D				MW3				MW4				MW6				
SAMPLE ID	MW2S	MW2S	MW2S	MW2S	MW2D	MW2D	MW2D	MW2D	MW3	MW3	MW3	MW3	MW4	MW4	MW4	MW4	MW6	MW6	MW6DUP	MW6	MW6
SAMPLE DATE	25-Mar-16	29-Jun-16	21-Sep-16	22-Dec-16	25-Mar-16	29-Jun-16	21-Sep-16	22-Dec-16	25-Mar-16	29-Jun-16	21-Sep-16	22-Dec-16	23-Mar-16	29-Jun-16	21-Sep-16	22-Dec-16	23-Mar-16	29-Jun-16	29-Jun-16	21-Sep-16	22-Dec-16

MATRIX	UNITS	MRL	BCCSR-SR-Water FAL (mg/L)	BC Ambient Water Quality Guidelines (mg/L)	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q2	Q3	Q4
Field Parameters																									
Field Conductivity	uS/cm	-	-	-	0.27	423	327.1	353.7	12.1	1213	780	762	0.13	154	105.2	98.3	0.13	312	-	335.9	0.46	862	862		
Temp	C	-	-	-	7.3	9.5	8.8	6.2	7.4	9.1	8.8	7.2	7.7	9.8	9.8	8.2	7.7	9.5	8.3	7.8	5.5	9.5	9.5		
pH	-	-	-	-	6.85	6.92	6.63	6.84	6.64	6.66	6.5	6.62	5.89	6.2	6.26	6.26	5.89	6.7	6.23	6.44	5.96	5.52	5.52		
Dissolved Oxygen	mg/L	-	-	-	1.97	2.17	8.40%	44.7	2.11	2.16	13.30%	2.82	19	5.83	16.20%	3.35	19	0.93	1.39	1.03	7.5	4.23	4.23		
ANIONS AND GENERAL CHEMISTRY																									
Alkalinity as CaCO3	mg/L	1	-	-	96	85	92	99	237	240	248	236	32	34	34	33	136	112	70	109	9	6	7		
Bromide	mg/L	0.1	-	-	<0.10	<0.10	<0.10	<0.10	0.13	<0.10	<0.10	<0.10	0.12	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10		
Chloride	mg/L	0.1	1500	150	5.61	6.35	7.02	14.7	37.4	31.2	31.2	33.7	12.3	7.08	4.63	5.95	19.2	15.1	8.58	18.5	165	180	183		
Fluoride	mg/L	0.01	2	0.4	0.18	<0.10	<0.10	<0.10	0.2	<0.10	<0.10	<0.10	0.11	<0.10	<0.10	<0.10	0.2	<0.10	<0.10	<0.10	0.18	<0.10	0.11		
Nitrite as N	mg/L	0.001	0.2	0.06	<0.001	<0.005	0.003	<0.005	<0.001	<0.005	0.003	<0.005	<0.001	<0.005	0.002	<0.005	0.011	<0.005	0.003	<0.005	<0.001	<0.005	<0.005		
Ammonia as N	mg/L	0.005	pH dependent (1.31 - 18.4)	-	5	3.54	2.97	4.81	12.5	11.9	9.59	10.3	0.455	0.261	0.392	0.328	2.19	2.09	1.63	2.12	0.051	0.033	0.036		
Nitrate+Nitrite as N	mg/L	0.005	400	-	0.012	0.024	0.015	0.017	0.009	0.023	0.021	0.016	0.007	0.11	0.007	0.143	0.014	0.018	0.034	0.015	0.101	0.04	0.034		
Nitrogen Kjeldahl	mg/L	0.05	-	-	5.56	5.14	3.55	4.8	24.5	13.1	10.9	13.3	0.71	0.35	0.4	0.32	5.54	2.82	1.65	3.16	1.21	0.6	0.48		
Nitrate as N	mg/L	0.01	400	32.8	0.012	0.024	0.015	0.017	0.009	0.023	0.018	0.016	0.007	0.11	0.005	0.143	<0.005	0.018	0.032	0.015	0.101	0.04	0.034		
Nitrogen	mg/L	0.05	-	-	5.57	5.16	3.57	4.82	24.5	13.1	10.9	13.3	0.714	0.458	0.404	0.463	5.55	2.84	1.68	3.18	1.31	0.645	0.516		
Sulfate	mg/L	1	1000	128 - 429 (Hardness dependant)	63.9	53.9	64	76.6	313	284	257	261	33.8	24.1	20.6	24.3	60	45.8	23.6	48.2	109	121	118		
Chemical Oxygen Demand	mg/L	5	-	-	15		20	<20	30		38	24	<5		<5	<20	17		7	<20	19				
Solids Suspended	mg/L	2	-	-	200	74	220	67	1340	922	654	309	3	14	3	<2	3850	458	488	665	1360	343	328		
pH	pH units	0.01	-	9	6.5	6.84	6.6	6.76	6.57	6.85	6.48	6.81	6.08	6.62	6.4	6.6	6.23	6.76	6.48	6.72	5.91	5.89	5.77		
Conductivity (EC)	uS/cm	2	-		418	307	370	423	1400	1040	1100	1030	237	148	148	147	558	360	253	382	894	828	832		
Hardness (Diss. as CaCO3)	mg/L	0.5	-	-	121	121	114	141	508	459	377	445	51.5	43.3	39	40.7	187	136	69.8	140	166	156	158		
DISSOLVED METALS																									
Aluminum	mg/L	0.005	-	(at pH ≥ 6.5) 0.1 - max. 0.05 - avg.	0.028	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.041	0.012	0.009	0.009	0.005	<0.005	<0.005	0.006	0.104	0.207	0.199		
Antimony	mg/L	0.0001	0.2	0.02	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.041	0.012	0.009	<0.0001	0.005	<0.005	<0.005	<0.0001	0.104	0.207	0.199		
Arsenic	mg/L	0.0005	0.05	0.005 (for total metals)	0.0078	0.008	0.0077	0.0094	0.0156	0.0157	0.0141	0.015	<0.0005	<0.0005	<0.0005	<0.0005	0.0056	0.0053	0.0051	0.0072	<0.0005	<0.0005	<0.0005		
Barium	mg/L	0.005	10	1	0.083	0.076	0.08	0.113	0.036	0.031	0.029	0.033	0.076	0.06	0.061	0.055	0.255	0.169	0.085	0.175	0.064	0.056	0.055		
Beryllium	mg/L	0.0001	0.053	-	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001		
Bismuth	mg/L	0.0001	-	-	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001		
Boron	mg/L	0.004	50	1.2	0.154	0.13	0.1	0.13	0.366	0.324	0.243	0.306	0.009	0.015	0.009	0.01	0.092	0.065	0.035	0.071	0.009	0.013	0.012		
Cadmium	mg/L	0.00001	Hardness dependent (0.0001 - 0.0006)	Hardness dependent (0.01 - 0.06)	0.00001	0.00001	<0.00001	<0.00001	0.00001	0.00001	<0.00001	<0.00001	0.00039	0.00013	0.00011	0.00031	0.00191	0.00046	0.00012	0.00024	0.00035	0.00038	0.00038		
Calcium	mg/L	0.2	-	-	38.2	36.9	34.4	44.4	170	152	124	148	15.2	13.5	11.7	12.7	60.1	43.9	22.7	45.6	54.6	50.3	51.2		
Chromium	mg/L	0.0005	0.01	0.001	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0007		
Cobalt	mg/L	0.00005	0.04	0.004	0.00152	0.00228	0.00254	0.00278	0.0161	0.0147	0.013	0.0147	0.0144	0.00181	0.00222	0.00358	0.0428	0.0313	0.016	0.0322	0.00095	0.00144	0.0014		
Copper	mg/L	0.0002	Hardness dependent (0.02 - 0.09)	0.094(H) + 2 (in µg/L) (for total metals)	0.0013	<0.0002	<0.0002	<0.0002	0.0004	<0.0002	<0.0002	<0.0002	0.0072	0.0021	0.0017	0.0027	0.003	0.0009	0.0004	0.0011	0.0034	0.0033	0.0031		
Iron	mg/L	0.01	-	0.35	33.1	39.2	39.2	50.4	68.6	65.5	58.3	63.4	1.05	0.082	0.159	0.198	39.3	41.2	27.9	46.9	0.021	0.08	0.056		
Lead	mg/L	0.0001	Hardness dependent (0.04 - 0.16)	0.003	0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001		
Lithium	mg/L	0.0001	-	0.014	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.0001	0.0002	0.0001	<0.0001	0.0002	0.0002	0.0001	<0.0001	0.0002	0.0001	<0.0001	0.0001		
Magnesium	mg/L	0.01	-	-	6.24	6.95	6.74	7.37	20.6	19.2	16.5	18.4	3.27	2.29	2.39	2.21	8.92	6.46	3.16	6.43	7.13	7.45	7.39		
Manganese	mg/L	0.0002	-	Hardness Dependent (0.8 - 3.8) (for total metals)	1.83	1.8	1.77	2.44	3.95	4.11	3.93	4.17	2.36	0.924	1.24	0.992	4.11	3.01	1.45	3.03	0.496	0.622	0.614		
Mercury	mg/L	0.00002	0.001	0.000001	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002		
Molybdenum	mg/L	0.0001	10	1	0.0044	0.0058	0.0058	0.0043	0.0185	0.0164	0.0132	0.0151	0.0008	0.0013	0.0012	0.001	0.0089	0.0159	0.0191	0.0132	0.0001	<0.0001	0.0001		
Nickel	mg/L	0.0002	Hardness dependent (0.25 - 1.5)	0.025	0.001	0.0007	0.0007	0.0008	0.0032	0.0031	0.0026	0.0029	0.0025	0.0005	0.0004	0.0019	0.0074	0.0037	0.0017	0.0039	0.0031	0.0033	0.0036		
Phosphorus	mg/L	0.02	-	-	0.04	<0.02	0.03	0.04	0.1	0.11	0.08	0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02		
Potassium	mg/L	0.02	-	373	9.32	8.34	7.88	10.3	21.8	21.6	18.3	20.9	2.89	3.27	3.06	3.02	7.18	6.5	3.95	6.21	4.46	4.61	4.58		
Selenium	mg/L	0.0005	0.01	0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005		
Silicon	mg/L	0.5		-	10.2	10.5	9.2	10.1	16.2	17.2	14.5	14.9	7.7	8.3	7.7	6.7	12.9	11.7	9.2	10.7	8.9	9.9	9.9		
Silver	mg/L	0.00005	0.0005 @ H ≤ 100 0.015 @ H > 100	0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	0.00006	<0.00005		
Sodium	mg/L	0.02	-	-	9.72	8.78	8.75	18.9	35.8	36.4	30.3	34.6	12.8	10	8.21	9.21	21.6	17.8	10.6	19	96.7	113	112		
Strontium	mg/L	0.001	-	-	0.215	0.2	0.205	0.26	0.659	0.585	0.509	0.585	0.117	0.123	0.122	0.106	0.371	0.249	0.133	0.282	0.615	0.678	0.672		
Sulfur	mg/L	1	-	-	23	19	22	29	111	102	87	93	10	7	7	5	20	17	8	17	38	40	41		
Tellurium	mg/L	0.0002	-	-	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002		
Thallium	mg/L	0.00002	0.003	0.0003	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	0.00014	0.00007	0.00006	0.0001	0.00006	0.00004	<0.00002	0.00004	0.00005	0.00005	0.00005		
Thorium	mg/L	0.0001	-	-	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001		
Tin	mg/L	0.0002	-	-	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002		
Titanium	mg/L	0.005	1	2	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005		
Uranium	mg/L	0.00002	3	0.3	0.00003	0.00003	0.00003	0.00004	0.00024	0.0002	0.00018	0.00022	<0.00002	<0.00002	<0.00002	<0.00002	0.00026	0.00017	0.00007	0.0002	0.00003	0.00004	0.00003		
Vanadium	mg/L	0.001	-	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001		
Zinc	mg/L	0.004	Hardness dependent (0.075 - 2.4)	33 + 0.75 (H - 90) (for total metals)	0.009	<0.004	0.013	<0.004	0.004	<0.004	0.007	<0.004	0.007	<0.004	0.007	0.023	0.014	0.006	0.013	0.006	0.007	<0.004	0.005		
Zirconium	mg/L	0.0001	-	-	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001		

Yellow = exceed standard or exceed standard AND guideline
Blue = exceed guideline
Orange = RDL is > guideline or standard

MORRISON HERSHFIELD

TABLE 5: 2016 GROUNDWATER QUALITY - PETROLEUM HYDROCARBONS

SAMPLE LOCATION			MW2S				MW2D				MW3				MW4				MW6				
SAMPLE ID			MW2S	MW2S	MW2S	MW2S	MW2D	MW2D	MW2D	MW2D	MW3	MW3	MW3	MW3	MW4	MW4	MW4	MW4	MW6	MW6	MW6DUP	MW6	MW6
SAMPLE DATE			23-Mar-16	29-Jun-16	21-Sep-16	22-Dec-16	23-Mar-16	29-Jun-16	21-Sep-16	22-Dec-16	23-Mar-16	29-Jun-16	21-Sep-16	22-Dec-16	23-Mar-16	29-Jun-16	21-Sep-16	22-Dec-16	23-Mar-16	29-Jun-16	29-Jun-16	21-Sep-16	22-Dec-16
MATRIX	BCCSR-SR-Water FAL (ug/L)	BC Ambient Water Quality Guidelines (ug/L)	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q3	Q4
HYDROCARBONS																							
VPHw	1500	-	<100	-	<100	-	<100	-	<100	-	<100	-	<100	-	<100	-	<100	-	<100	-	-	-	
LEPHw	500	-	<250	-	<250	-	<250	-	<250	-	<250	-	<250	-	<250	-	<250	-	<250	-	-	-	-
HEPHw	-	-	<250	-	<250	-	<250	-	<250	-	<250	-	<250	-	<250	-	<250	-	663	-	-	-	-
Total PAH	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-		-	-	-	-
PAHs, VOCs & BTEX																							
Acenaphthene	60	6	<0.05	-	<0.05	-	<0.05	-	<0.05	-	<0.05	-	<0.05	-	<0.05	-	<0.05	-	<0.05	-	-	-	-
Acenaphthylene	-	-	<0.20	-	<0.20	-	<0.20	-	<0.20	-	<0.20	-	<0.20	-	<0.20	-	<0.20	-	<0.20	-	-	-	-
Acridine	0.5	0.05	<0.10	-	<0.10	-	<0.10	-	<0.10	-	<0.10	-	<0.10	-	<0.10	-	<0.10	-	<0.10	-	-	-	-
Anthracene	1	0.1	<0.01	-	<0.01	-	<0.01	-	<0.01	-	<0.01	-	<0.01	-	<0.01	-	<0.01	-	<0.01	-	-	-	-
Benzo (a) anthracene	1	0.1	<0.01	-	<0.01	-	<0.01	-	<0.01	-	<0.01	-	<0.01	-	<0.01	-	<0.01	-	<0.01	-	-	-	-
Benzo (a) pyrene	0.1	0.01	<0.01	-	<0.01	-	<0.01	-	<0.01	-	<0.01	-	<0.01	-	<0.01	-	<0.01	-	<0.01	-	-	-	-
Benzo (b) fluoranthene	-	-	<0.05	-	<0.05	-	<0.05	-	<0.05	-	<0.05	-	<0.05	-	<0.05	-	<0.05	-	<0.05	-	-	-	-
Benzo (g,h,i) perylene	-	-	<0.05	-	<0.05	-	<0.05	-	<0.05	-	<0.05	-	<0.05	-	<0.05	-	<0.05	-	<0.05	-	-	-	-
Benzo (k) fluoranthene	-	-	<0.05	-	<0.05	-	<0.05	-	<0.05	-	<0.05	-	<0.05	-	<0.05	-	<0.05	-	<0.05	-	-	-	-
Chrysene	1	-	<0.05	-	<0.05	-	<0.05	-	<0.05	-	<0.05	-	<0.05	-	<0.05	-	<0.05	-	<0.05	-	-	-	-
Dibenz (a,h) anthracene	-	-	<0.05	-	<0.05	-	<0.05	-	<0.05	-	<0.05	-	<0.05	-	<0.05	-	<0.05	-	<0.05	-	-	-	-
Fluoranthene	2	0.2	<0.03	-	<0.03	-	<0.03	-	<0.03	-	<0.03	-	<0.03	-	<0.03	-	<0.03	-	<0.03	-	-	-	-
Fluorene	120	12	<0.05	-	<0.05	-	<0.05	-	<0.05	-	<0.05	-	<0.05	-	<0.05	-	<0.05	-	<0.05	-	-	-	-
Indeno (1,2,3-cd) pyrene	-	-	<0.05	-	<0.05	-	<0.05	-	<0.05	-	<0.05	-	<0.05	-	<0.05	-	<0.05	-	<0.05	-	-	-	-
Naphthalene	10	1	<0.20	-	<0.20	-	<0.20	-	<0.20	-	<0.20	-	<0.20	-	<0.20	-	<0.20	-	<0.20	-	-	-	-
Phenanthrene	3	0.3	<0.10	-	<0.10	-	<0.10	-	<0.10	-	<0.10	-	<0.10	-	<0.10	-	<0.10	-	<0.10	-	-	-	-
Pyrene	0.2	0.02	<0.02	-	<0.02	-	<0.02	-	<0.02	-	<0.02	-	<0.02	-	<0.02	-	<0.02	-	<0.02	-	-	-	-
Quinoline	34	3.4	<0.10	-	<0.10	-	<0.10	-	<0.10	-	<0.10	-	<0.10	-	<0.10	-	<0.10	-	<0.10	-	-	-	-
Acetone	-	-	<10.0	-	<10.0	-	<10.0	-	<10.0	-	<10.0	-	<10.0	-	<10.0	-	<10.0	-	<10.0	-	-	-	-
Benzene	4000	40	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	-	-	-
Bromodichloromethane	-	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	-	-	-
Bromoform	-	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	-	-	-
Bromomethane	-	-	<2.0	-	<2.0	-	<2.0	-	<2.0	-	<2.0	-	<2.0	-	<2.0	-	<2.0	-	<2.0	-	-	-	-
2-Butanone (MEK)	-	-	<5.0	-	<5.0	-	<5.0	-	<5.0	-	<5.0	-	<5.0	-	<5.0	-	<5.0	-	<5.0	-	-	-	-
Carbon tetrachloride	130	133	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	-	-	-
Chlorobenzene	13	1.3	<1.0	-	<1.0	-	1.4	-	<1.6	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	-	-	-
Chloroethane	-	-	<2.0	-	<2.0	-	<2.0	-	<2.0	-	<2.0	-	<2.0	-	<2.0	-	<2.0	-	<2.0	-	-	-	-
Chloroform	20	1.8	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	-	-	-
Chloromethane	-	-	<2.0	-	<2.0	-	<2.0	-	<2.0	-	<2.0	-	<2.0	-	<2.0	-	<2.0	-	<2.0	-	-	-	-
Dibromochloromethane	-	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	-	-	-
Dibromomethane	-	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	-	-	-
1,2-Dichlorobenzene	7	0.7	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	-	-	-
1,3-Dichlorobenzene	1500	150	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	-	-	-
1,4-Dichlorobenzene	260	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	-	-	-
1,1-Dichloroethane	-	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	-	-	-
1,2-Dichloroethane	1000	100	<0.3	-	<0.3	-	<0.3	-	<0.3	-	<0.3	-	<0.3	-	<0.3	-	<0.3	-	<0.3	-	-	-	-
1,1-Dichloroethene	-	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	-	-	-
cis-1,2-Dichloroethene	-	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	-	-	-
trans-1,2-Dichloroethene	-	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	-	-	-
1,2-Dichloropropane	-	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	-	-	-
cis-1,3-Dichloropropene	-	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	-	-	-
trans-1,3-Dichloropropene	-	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	-	-	-
Ethylbenzene	2000	200	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	-	-	-
Methyl tert-butyl ether	34000	3400	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	-	-	-
Methylene chloride	980	98.1	<3.0	-	<3.0	-	<3.0	-	<3.0	-	<3.0	-	<3.0	-	<3.0	-	<3.0	-	<3.0	-	-	-	-
4-Methyl-2-Pentanone (MIBK)	-	-	<10.0	-	<10.0	-	<10.0	-	<10.0	-	<10.0	-	<10.0	-	<10.0	-	<10.0	-	<10.0	-	-	-	-
Styrene	720	72	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	-	-	-
1,1,1,2-Tetrachloroethane	-	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	-	-	-
1,1,2,2-Tetrachloroethane	1100	111	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	-	-	-
Tetrachloroethene	-	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	-		0
Toluene	390	0.5	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	-	-	
1,1,1-Trichloroethane	-	11100	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	-	-	-
1,1,2-Trichloroethane	-	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	-	-	-
Trichloroethene	200	21	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	-	-	-
Trichlorofluoromethane	-	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	-	-	-
Vinyl chloride	-	-	<2.0	-	<2.0	-	<2.0	-	<2.0	-	<2.0	-	<2.0	-	<2.0	-	<2.0	-	<2.0	-	-	-	-
m,p-Xylene	-	30	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	-	-	-
Xylenes (total)	-	30	<2.0	-	<2.0	-	<2.0	-	<2.0	-	<2.0	-	<2.0	-	<2.0	-	<2.0	-	<2.0	-	-	-	-
o-Xylene	-	30	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	-	-	-
1,2-Dibromoethane	-	-	<0.3	-	<0.3	-	<0.3	-	<0.3	-	<0.3	-	<0.3	-	<0.3	-	<0.3	-	<0.3	-	-	-	-
1,2-Dichlorobenzene	7	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	-	-	-

Yellow = exceed standard or exceed standard AND guideline
Blue = exceed guideline
Orange = RDL is > guideline or standard

MORRISON HERSHFIELD

TABLE 6: 2016 SURFACE WATER QUALITY GENERAL CHEMISTRY AND METALS

					SFC 2				SFC 2B				SFC 3					SFC 4B				SFC 11			
				SAMPLE ID	SFC 2	SFC 2	SFC2	SFC 2	SFC 2B	SFC 2B	SFC2B	SFC 2B	SFC 3	SFC 3	SFC3	SFC 3	SFC 3 DUP	SFC 4B	SFC 4B	SFC4B	SFC 4B	SFC 11	SFC 11	SFC11	SFC 11
				SAMPLE DATE	23-Mar-16	29-Jun-16	21-Sep-16	22-Dec-16	25-Mar-16	29-Jun-16	21-Sep-16	22-Dec-16	23-Mar-16	29-Jun-16	21-Sep-16	22-Dec-16	22-Dec-16	25-Mar-16	29-Jun-16	21-Sep-16	22-Dec-16	23-Mar-16	29-Jun-16	21-Sep-16	22-Dec-16
MATRIX	UNITS	MRL	BCCSR-SR-Water FAL (mg/L)	BC Ambient Water Quality Guidelines (mg/L)	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Field Parameters																									
Field Conductivity	uS/cm	-	-	-	0.10	320	215.3	211	0.27	NM	-	-	0.14	136.5	92.7	97.2	97.2	0.2	263.6	181.8	208.2	0.03	140.4	92.4	67.7
Temp	C	-	-	-	4.8	9.5	9.6	8.2	7.0	13.8	-	-	4.5	12.4	10.3	3.3	3.3	6.0	11.8	8.6	3.2	4.4	7.9	6.9	5.2
pH	-	-	-	-	7.09	6.78	6.56	6.75	5.21	3.87	-	-	6.48	6.82	6.83	7.18	7.18	6.6	7.22	6.98	7.2	6.54	6.99	6.66	7.42
Dissolved Oxygen	mg/L	-	-	-	13.7	7.71	38.50%	5.98	8.34	0.23	-	-	13.87	4.36	40.60%	10.3	10.3	10.04	10	74.10%	10.29	14.8	10.24	52.90%	9.35
ANIONS AND GENERAL CHEMISTRY																									
Alkalinity as CaCO3	mg/L	1	-	-	50	61	62	61	3	<1	-	-	29	36	26	27	25	23	38	41	49	16	30	34	49
Bromide	mg/L	0.1	-	-	<0.10	<0.10	<0.10	<0.10	-	<0.10	-	-	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Chloride	mg/L	0.1	1500	150	13.5	13.3	11.1	11.5	7.07	15.9	-	-	33.4	11.2	8.82	17.3	8.3	11.9	27.4	32.2	23	3.62	12.4	11.5	8.62
Fluoride	mg/L	0.01	2	0.4	0.15	<0.10	<0.10	<0.10	0.37	0.32	-	-	0.04	0.28	<0.10	<0.10	<0.10	0.06	0.11	<0.10	<0.10	0.13	<0.10	<0.10	<0.10
Nitrite as N	mg/L	0.001	0.2	0.06	<0.001	<0.005	0.003	<0.005	0.011	<0.005	-	-	<0.001	<0.005	0.003	27	25	<0.001	<0.005	0.001	<0.005	<0.001	<0.005	<0.001	<0.005
Ammonia as N	mg/L	0.005	pH dependent (1.31 - 18.4)	-	0.299	0.611	0.57	0.649	0.511	3.02	-	-	<0.005	<0.020	0.027	0.036	0.027	0.057	<0.020	<0.020	0.3	0.025	<0.020	0.054	0.02
Nitrate+Nitrite as N	mg/L	0.005	400	-	0.361	0.133	0.098	0.164	3.22	<0.005	-	-	0.101	0.012	0.038	0.162	0.362	0.173	0.199	0.162	0.352	0.113	0.166	0.232	0.364
Nitrogen Kjeldahl	mg/L	0.05	-	-	0.4	0.6	0.58	0.64	1.04	3.47	-	-	0.07	0.19	0.08	<0.05	<0.05	0.11	0.07	0.07	0.3	0.06	0.06	0.07	<0.05
Nitrate as N	mg/L	0.01	400	32.8	0.361	0.133	0.095	0.164	3.21	<0.005	-	-	0.101	0.012	0.035	0.162	0.362	0.173	0.199	0.16	0.352	0.113	0.166	0.232	0.364
Nitrogen	mg/L	0.05	-	-	0.756	0.735	0.677	0.802	4.25	3.47	-	-	0.171	0.201	0.114	0.162	0.362	0.282	0.269	0.232	0.651	0.178	0.231	0.304	0.364
Sulfate	mg/L	1	1000	128 - 429 (Hardness dependant)	58.1	57.1	54.9	64.5	184	732	-	-	27.7	21	13	21.7	12.3	31.2	38	34.4	79.9	7.1	14.3	14.4	11.7
Chemical Oxygen Demand	mg/L	5	-	-	5		<5	<20	16		-	-	6		<5	<20	<20	7		<5	<20	6		<5	<20
Solids Suspended	mg/L	2	-	-	9	6	<2	13	46	19	-	-	<2	86	<2	<3	<2	5	<2	<2	<2	8	<2	<2	<2
pH	pH units	0.01	-	9	6.7	6.97	6.79	6.99	4.65	2.91	-	-	6.92	6.92	6.82	7.01	6.94	6.97	7.38	7.31	7.36	7.09	6.95	6.84	7.01
Conductivity (EC)	uS/cm	2	-	-	332	288	312	311	395	1540	-	-	288	128	126	169	111	194	251	264	362	78	131	145	112
Hardness (Diss. as CaCO3)	mg/L	0.5	-	-	121	94.6	107	110	156	364	-	-	61.6	38.1	37.2	40	36.7	62.7	71.7	86.9	134	27	37.8	48.6	35.9
TOTAL METALS																									
Aluminum	mg/L	0.005	-	Maximum 5.0 (pH ≥ 6.5)	1.19	0.173	0.057	0.972	6.67	10.3	-	-	0.197	0.061	0.03	0.059	0.077	0.559	0.019	0.011	0.085	1.04	0.02	0.019	0.075
Antimony	mg/L	0.0001	0.2	0.02	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.0002	-	-	0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.0001	<0.0001	<0.0001	<0.0001
Arsenic	mg/L	0.0005	0.05	0.005 (for total metals)	<0.0005	<0.0005	<0.0005	<0.0005	0.0007	0.0006	-	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Barium	mg/L	0.005	10	1	0.041	0.049	0.061	0.053	0.032	0.041	-	-	0.026	0.014	0.016	0.017	0.011	0.018	0.014	0.017	0.031	0.014	0.009	0.011	0.01
Beryllium	mg/L	0.0001	0.053	-	<0.0001	<0.0001	<0.0001	<0.0001	0.0002	0.0005	-	-	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Bismuth	mg/L	0.0001	-	-	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	-	-	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Boron	mg/L	0.004	50	1.2	0.023	0.045	0.042	0.045	0.046	0.025	-	-	0.007	<0.004	0.008	0.009	0.009	0.014	0.027	0.031	0.064	0.004	0.005	0.012	0.009
Cadmium	mg/L	0.00001	Hardness dependent (0.0001 - 0.0006)	-	0.00005	0.00004	0.00005	0.00008	0.00036	0.0002	-	-	0.00004	0.00002	<0.00001	0.00002	0.00002	0.00004	<0.00001	<0.00001	0.00004	0.00002	0.00002	0.00002	0.00002
Calcium	mg/L	0.2	-	-	41.8	32.5	35.3	37.2	49.6	98.2	-	-	21.1	12.4	12	13.3	11.6	20.8	24.7	29.4	45.3	8.2	12.2	15.4	11.3
Chromium	mg/L	0.0005	0.01	0.001	<0.0005	0.0006	<0.0005	<0.0005	0.0014	0.0006	-	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0006	<0.0005	<0.0005	<0.0005
Cobalt	mg/L	0.00005	0.04	0.11 (for total metals)	0.00514	0.00731	0.00855	0.00853	0.0323	0.102	-	-	0.00019	0.00286	0.00084	0.0003	0.00005	0.00138	0.00012	0.00019	0.00295	0.00038	<0.00005	<0.00005	0.00005
Copper	mg/L	0.0002	Hardness dependent (0.02 - 0.09)	0.094(H) + 2 (in µg/L) (for total metals)	0.0191	0.0034	0.0015	0.0169	0.137	0.0582	-	-	0.0027	0.0015	0.002	0.0021	0.0008	0.006	0.001	0.0009	0.0025	0.0055	0.0006	0.0004	0.0008
Iron	mg/L	0.01	-	0.35	3.3	4.41	3.96	5.06	15.2	77	-	-	0.19	2	1.25	0.2	0.05	0.92	0.09	0.07	0.74	0.81	0.04	0.04	0.06
Lead	mg/L	0.0001	Hardness dependent (0.04 - 0.16)	e(1.273 ln (hardness) - 1.460)	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	-	-	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.0005	<0.0001	<0.0001	<0.0001
Lithium	mg/L	0.0001	-	0.014	0.0004	0.0002	0.0002	0.0004	0.0025	0.0063	-	-	0.0003	0.0002	0.0002	0.0003	0.0005	0.0006	0.0005	0.0005	0.0004	0.0009	0.0005	0.0007	0.0005
Magnesium	mg/L	0.01	-	-	4.03	3.28	4.51	4.2	7.91	28.7	-	-	2.17	1.74	1.77	1.67	1.89	2.65	2.44	3.26	5.08	1.56	1.79	2.45	1.85
Manganese	mg/L	0.0002	-	Hardness dependent (0.8 -3.8)	0.67	1.87	2.41	1.4	1.69	9.53	-	-	0.0192	0.306	0.113	0.0149	0.0026	0.194	0.046	0.116	0.758	0.0258	0.0093	0.0084	0.0027
Mercury	mg/L	0.00002	0.001	0.000001	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	-	-	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002
Molybdenum	mg/L	0.0001	10	1	0.0054	0.0022	0.0021	0.003	0.0003	<0.0001	-	-	0.0023	0.0007	0.0008	0.0003	0.0002	0.0012	0.0004	0.0004	0.0005	0.0005	0.0002	0.0002	0.0003
Nickel	mg/L	0.0002	Hardness dependent (0.25 - 1.5)	0.025	0.0024	0.0014	0.0016	0.0026	0.0162	0.0343	-	-	0.0004	0.0007	<0.0002	0.0002	<0.0002	0.001	0.0003	<0.0002	0.0018	0.0004	0.0002	<0.0002	<0.0002
Phosphorus	mg/L	0.02	-	-	0.04	<0.02	<0.02	<0.02	0.07	<0.02	-	-	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.06	<0.02	<0.02	<0.02
Potassium	mg/L	0.02	-	373	4.19	2.58	3.54	3.75	4.18	3.37	-	-	2.37	0.52	1.68	1.2	0.71	1.92	1.19	1.98	2.99	0.96	0.48	0.84	0.69
Selenium	mg/L	0.0005	0.01	0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	-	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Silicon	mg/L	0.5	-	-	4.6	5	5.8	4	6.8	13.7	-	-	5.6	8.7	7.2	5.9	8	6.6	6.8	8.4	6	8.3	9.7	12.7	7.6
Silver	mg/L	0.00005	0.0005 @ H ≤ 100 0.015 @ H > 100	0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	-	-	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005
Sodium	mg/L	0.02	-	-	16.7	11	12.2	12.4	8.74	12.6	-	-	31.9	6.81	8.09	15.6	6.49	17.3	11.6	14.8	17.1	7.09	6.78	8.4	6.33
Strontium	mg/L	0.001	-	-	0.205	0.208	0.261	0.222	0.201	0.456	-	-	0.127	0.121	0.128	0.106	0.138	0.144	0.261	0.367	0.344	0.078	0.16	0.218	0.134
Sulfur	mg/L	1	-	-	22	15	23	21	57	200	-	-	10	<1	5	7	3	13	6	12	29	3	<1	5	3
Tellurium	mg/L	0.0002	-	-	0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	-	-	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Thallium	mg/L	0.00002	0.003	0.0003	<0.00002	<0.00002	0.00002	0.00002	<0.00002	<0.00002	-	-	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002
Thorium	mg/L	0.0001	-	-	<0.0001	<0.0001	<0.0001	<0.0001	0.0008	0.0003	-	-	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Tin	mg/L	0.0002	-	-	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	-	-	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Titanium	mg/L	0.005	1	2	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	-	-	0.005	<0.005	<0.005	<0.005	<0.005	0.008	<0.005	<0.005	<0.005	0.035	<0.005	<0.005	<0.005
Uranium	mg/L	0.00002	3	0.3	0.00009	<0.00002	<0.00002	0.00007	0.00039	0.00031	-	-	0.00003	<0.00002	<0.00002	<0.00002	<0.00002	0.00003	<0.00002	<0.00002	0.00002	0.00003	<0.00002	<0.00002	<0.00002
Vanadium	mg/L	0.001	-	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.003	<0.001	<0.001	<0.001
Zinc	mg/L	0.004	Hardness dependent (0.075 - 2.4)	33 + 0.75 (H - 90) (for total metals)	0.009	0.004	0.013	0.009	0.045	0.059	-	-	0.007	<0.004	0.004	<0.004	<0.004	0.006	<0.004	<0.004	0.009	0.006	<0.004	<0.004	<0.004
Zirconium	mg/L	0.0001	-	-	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	-	-	0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.0002	<0.0001	<0.0001	<0.0001	0.0004	<0.0001	<0.0001	<0.0001

Yellow = exceed standard or exceed standard AND guideline
Blue = exceed guideline
Orange = RDL is > guideline or standard

MORRISON HERSHFIELD

TABLE 7: 2016 Leachate Manhole / GW Interceptor WATER QUALITY - GENERAL CHEMISTRY AND METALS

SAMPLE LOCATION					LEACHATE MANHOLE				GW INTERCEPTOR				
SAMPLE ID					Leachate Manhole	Leachate Manhole	Leachate Manhole	Leachate Manhole	GW Interceptor	GW Interceptor	GW INT	GW INT-DUP	GW.INT
SAMPLE DATE					23-Mar-16	29-Jun-16	21-Sep-16	22-Dec-16	23-Mar-16	29-Jun-16	21-Sep-16	21-Sep-16	22-Dec-16
MATRIX	UNITS	MRL	BCCSR-SR-Water FAL (mg/L)	BC Ambient Water Quality Guidelines (mg/L)	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q3	Q4
Field Parameters													
Field Conductivity	uS/cm	-	-	-	0.46	-	-	-	0.74	797	531	531	573
Temp	C	-	-	-	6.0	-	-	-	8.1	12.4	9.4	9.4	8.6
pH	-	-	-	-	6.76	-	-	-	6.34	6.35	6.19	6.19	6.52
Dissolved Oxygen	mg/L	-	-	-	7.74	-	-	-	1.88	1.32	5.90%	5.90%	3.49
Alkalinity as CaCO3	mg/L	1	-	-	214	-	-	-	130	118	158	68	146
Bromide	mg/L	0.1	-	-	0.18	-	-	-	<0.10	<0.10	<0.10	<0.10	<0.10
Chloride	mg/L	0.1	1500	150	29.1	-	-	-	73.4	73.8	70.3	8.22	44
Fluoride	mg/L	0.01	2	0.4	0.14	-	-	-	0.21	0.11	<0.10	<0.10	<0.10
Nitrite as N	mg/L	0.001	0.2	0.06	0.041	-	-	-	<0.001	<0.005	0.005	0.003	0.011
Ammonia as N	mg/L	0.005	pH dependent (1.31 - 18.4)	-	12.2	-	-	-	1.98	1.23	1.74	1.36	3.3
Nitrate+Nitrite as N	mg/L	0.005	400	-	9.27	-	-	-	0.01	0.008	0.043	0.049	0.354
Nitrogen Kjeldahl	mg/L	0.05	-	-	12.3	-	-	-	1.95	3.2	1.75	1.36	3.25
Nitrate as N	mg/L	0.01	400	32.8	9.23	-	-	-	0.01	0.008	0.038	0.045	0.354
Nitrogen	mg/L	0.05	-	-	21.5	-	-	-	1.96	3.21	1.8	1.41	3.61
Sulfate	mg/L	1	1000	128 - 429 (Hardness dependant)	43.9	-	-	-	386	133	104	22.4	191
Chemical Oxygen Demand	mg/L	5	-	-	38	-	-	-	21		18	10	<20
Solids Suspended	mg/L	2	-	-	26	-	-	-	28	37	14	301	46
pH	pH units	0.01	-	9	6.72	-	-	-	6.28	6.6	6.35	6.18	6.88
Conductivity (EC)	uS/cm	2	-		856	-	-	-	1370	691	712	232	814
Hardness (Diss. as CaCO3)	mg/L	0.5	-	-	176	-	-	-	406	-	212	70.9	327
DISSOLVED METALS													
Aluminum	mg/L	0.005	-	Maximum 0.1 (pH ≥ 6.5)	0.016	-	-	-	0.005	-	0.042	0.006	0.021
Antimony	mg/L	0.0001	0.2	0.02	0.0005	-	-	-	0.0001	-	<0.0001	<0.0001	<0.0001
Arsenic	mg/L	0.0005	0.05	-	0.0005	-	-	-	<0.0005	-	<0.0005	0.0049	<0.0005
Barium	mg/L	0.005	10	1	0.046	-	-	-	0.104	-	0.073	0.087	0.08
Beryllium	mg/L	0.0001	0.053	-	<0.0001	-	-	-	<0.0001	-	<0.0001	<0.0001	<0.0001
Bismuth	mg/L	0.0001	-	-	<0.0001	-	-	-	<0.0001	-	<0.0001	<0.0001	<0.0001
Boron	mg/L	0.004	50	1.2	0.284	-	-	-	0.231	-	0.14	0.038	0.24
Cadmium	mg/L	0.00001	Hardness dependent (0.0001 - 0.0006)	Hardness dependent (0.01 - 0.06)	0.0001	-	-	-	<0.00001	-	<0.00001	0.00008	<0.00001
Calcium	mg/L	0.2	-	-	58.7	-	-	-	139	-	70.9	23.1	113
Chromium	mg/L	0.0005	0.01	0.001	0.0006	-	-	-	<0.0005	-	<0.0005	<0.0005	<0.0005
Cobalt	mg/L	0.00005	0.04	-	0.00098	-	-	-	0.0134	-	0.00118	0.0162	0.00625
Copper	mg/L	0.0002	Hardness dependent (0.02 - 0.09)	0.094(H) + 2 (in µg/L) (for total metals)	0.0208	-	-	-	<0.0002	-	<0.0002	0.0004	0.0003
Iron	mg/L	0.01	-	0.35	2.42	-	-	-	12.7	-	26.6	28	22.3
Lead	mg/L	0.0001	Hardness dependent (0.04 - 0.16)	0.003	0.0001	-	-	-	<0.0001	-	<0.0001	<0.0001	<0.0001
Lithium	mg/L	0.0001	-	0.014	0.0006	-	-	-	0.0006	-	0.0002	<0.0001	0.0004
Magnesium	mg/L	0.01	-	-	7.1	-	-	-	14.1	-	8.53	3.22	10.8
Manganese	mg/L	0.0002	-	Hardness Dependent (0.8 - 3.8) (for total metals)	0.269	-	-	-	3.43	-	2.75	1.52	2.63
Mercury	mg/L	0.00002	0.001	0.000001	<0.00002	-	-	-	<0.00002	-	<0.00002	<0.00002	<0.00002
Molybdenum	mg/L	0.0001	10	1	0.0006	-	-	-	0.0002	-	0.0006	0.0185	0.0005

MORRISON HERSHFIELD

TABLE 7: 2016 Leachate Manhole / GW Interceptor WATER QUALITY - GENERAL CHEMISTRY AND METALS

SAMPLE LOCATION					LEACHATE MANHOLE				GW INTERCEPTOR				
SAMPLE ID					Leachate Manhole	Leachate Manhole	Leachate Manhole	Leachate Manhole	GW Interceptor	GW Interceptor	GW INT	GW INT-DUP	GW.INT
SAMPLE DATE					23-Mar-16	29-Jun-16	21-Sep-16	22-Dec-16	23-Mar-16	29-Jun-16	21-Sep-16	21-Sep-16	22-Dec-16
MATRIX	UNITS	MRL	BCCSR-SR-Water FAL (mg/L)	BC Ambient Water Quality Guidelines (mg/L)	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q3	Q4
Nickel	mg/L	0.0002	Hardness dependent (0.25 - 1.5)	0.025	0.0031	-	-	-	0.0072	-	0.0005	0.0018	0.0039
Phosphorus	mg/L	0.02	-	-	0.04	-	-	-	<0.02	-	0.02	<0.02	<0.02
Potassium	mg/L	0.02	-	373	13	-	-	-	6.4	-	7.03	4.15	9.19
Selenium	mg/L	0.0005	0.01	0.002	<0.0005	-	-	-	<0.0005	-	<0.0005	<0.0005	<0.0005
Silicon	mg/L	0.5	-	-	6.7	-	-	-	7.9	-	10.1	9.2	7.7
Silver	mg/L	0.00005	0.0005 @ H ≤ 100 0.015 @ H > 100	0.00005	<0.00005	-	-	-	<0.00005	-	<0.00005	<0.00005	<0.00005
Sodium	mg/L	0.02	-	-	29.3	-	-	-	36.5	-	45.6	10.9	43.6
Strontium	mg/L	0.001	-	-	0.268	-	-	-	0.903	-	0.539	0.14	0.777
Sulfur	mg/L	1	-	-	7	-	-	-	91	-	34	9	68
Tellurium	mg/L	0.0002	-	-	<0.0002	-	-	-	<0.0002	-	<0.0002	<0.0002	<0.0002
Thallium	mg/L	0.00002	0.003	0.0003	<0.00002	-	-	-	<0.00002	-	<0.00002	<0.00002	<0.00002
Thorium	mg/L	0.0001	-	-	<0.0001	-	-	-	<0.0001	-	<0.0001	<0.0001	<0.0001
Tin	mg/L	0.0002	-	-	<0.0002	-	-	-	<0.0002	-	<0.0002	<0.0002	<0.0002
Titanium	mg/L	0.005	1	2	<0.005	-	-	-	<0.005	-	<0.005	<0.005	<0.005
Uranium	mg/L	0.00002	3	0.3	0.00004	-	-	-	0.00002	-	<0.00002	0.00007	0.00003
Vanadium	mg/L	0.001	-	-	<0.001	-	-	-	<0.001	-	<0.001	<0.001	<0.001
Zinc	mg/L	0.004	Hardness dependent (0.075 - 2.4)	33 + 0.75 (H - 90) (for total metals)	0.087	-	-	-	0.029	-	0.006	0.007	0.022
Zirconium	mg/L	0.0001	-	-	0.0002	-	-	-	<0.0001	-	0.0001	<0.0001	<0.0001

Yellow = exceed standard or exceed standard AND guideline

Blue = exceed guideline

Orange = RDL is > guideline or standard

MORRISON HERSHFIELD

TABLE 8: 2016 Leachate Manhole / GW Interceptor WATER QUALITY - PETROLEUM HYDROCARBONS

			SAMPLE LOCATION		LEACHATE MANHOLE				GW INTERCEPTOR				
			SAMPLE ID		Leachate Manhole	Leachate Manhole	LM	Leachate Manhole	GW Interceptor	GW Interceptor	GW.INT	GW.INT-DUP	GW INT
			SAMPLE DATE		23-Mar-16	29-Jun-16	21-Sep-16	22-Dec-16	23-Mar-16	29-Jun-16	21-Sep-16	21-Sep-16	22-Dec-16
MATRIX	UNITS	MRL	BCCSR-SR-Water FAL (ug/L)	BC Ambient Water Quality Guidelines (ug/L)	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q3	Q4
HYDROCARBONS													
VPHw	ug/L	100	1500	-	<100	-	-	-	<100	-	<100	<100	-
LEPHw	ug/L	100	500	-	<250	-	-	-	<250	<250	<250	<250	<250
HEPHw	ug/L	100	-	-	<250	-	-	-	<250	<250	<250	<250	<250
Total PAH	ug/L	0.05	-	-		-	-	-		-	-	-	-
VHw (6-10)	ug/L	100	15000	-	<100	-	-	-	<100	-	<100	<100	-
EPHw (10-19)	ug/L	100	5000	-	<250	-	-	-	<250	<250	<250	<250	<250
EPHw (19-32)	ug/L	100	-	-	<250	-	-	-	<250	<250	<250	<250	<250
PAHs, VOCs & BTEX													
Acenaphthene	ug/L	0.02	60	6	<0.05	-	-	-	0.78	0.92	0.89	<0.05	1.33
Acenaphthylene	ug/L	0.02	-	-	<0.20	-	-	-	<0.20	<0.20	<0.20	<0.20	<0.20
Acridine	ug/L	0.05	0.5	0.05	<0.10	-	-	-	<0.10	<0.10	<0.10	<0.10	<0.05
Anthracene	ug/L	0.01	1	0.1	<0.01	-	-	-	0.04	0.03	0.02	<0.01	0.04
Benzo (a) anthracene	ug/L	0.01	1	0.1	<0.01	-	-	-	<0.01	<0.01	<0.01	<0.01	<0.01
Benzo (a) pyrene	ug/L	0.01	0.1	0.01	<0.01	-	-	-	0.01	<0.01	<0.01	<0.01	<0.01
Benzo (b) fluoranthene	ug/L	0.02	-	-	<0.05	-	-	-	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo (g,h,i) perylene	ug/L	0.02	-	-	<0.05	-	-	-	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo (k) fluoranthene	ug/L	0.02	-	-	<0.05	-	-	-	<0.05	<0.05	<0.05	<0.05	<0.05
Chrysene	ug/L	0.02	1	-	<0.05	-	-	-	<0.05	<0.05	<0.05	<0.05	<0.05
Dibenz (a,h) anthracene	ug/L	0.02	-	-	<0.05	-	-	-	<0.05	<0.05	<0.05	<0.05	<0.05
Fluoranthene	ug/L	0.02	2	0.2	<0.03	-	-	-	0.18	0.16	0.16	<0.03	0.11
Fluorene	ug/L	0.02	120	12	<0.05	-	-	-	0.29	0.22	0.13	<0.05	0.5
Indeno (1,2,3-cd) pyrene	ug/L	0.02	-	-	<0.05	-	-	-	<0.05	<0.05	<0.05	<0.05	<0.05
Naphthalene	ug/L	0.05	10	1	<0.20	-	-	-	<0.20	<0.20	<0.20	<0.20	<0.20
Phenanthrene	ug/L	0.05	3	0.3	<0.10	-	-	-	<0.10	<0.10	<0.10	<0.10	<0.10
Pyrene	ug/L	0.02	0.2	0.02	<0.02	-	-	-	0.12	0.08	0.07	<0.02	0.09
Quinoline	ug/L	0.05	34	3.4	<0.10	-	-	-	<0.10	<0.10	<0.10	<0.10	<0.05
Acetone	ug/L	10	-	-	<10.0	-	-	-	<10.0	-	<10.0	<10.0	-
Benzene	ug/L	0.5	4000	40	<0.5	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5
Bromodichloromethane	ug/L	1	-	-	<1.0	-	-	-	<1.0	<1.0	<1.0	<1.0	<1.0
Bromoform	ug/L	1	-	-	<1.0	-	-	-	<1.0	<1.0	<1.0	<1.0	<1.0
Bromomethane	ug/L	2	-	-	<2.0	-	-	-	<2.0	-	<2.0	<2.0	-
2-Butanone (MEK)	ug/L	5	-	-	<5.0	-	-	-	<5.0	-	<5.0	<5.0	-
Carbon tetrachloride	ug/L	1	130	133	<1.0	-	-	-	<1.0	<1.0	<1.0	<1.0	<0.5
Chlorobenzene	ug/L	1	13	1.3	<1.0	-	-	-	<1.0	<1.0	<1.0	<1.0	<1.0
Chloroethane	ug/L	2	-	-	<2.0	-	-	-	<2.0	<2.0	<2.0	<2.0	<2.0
Chloroform	ug/L	1	20	1.8	<1.0	-	-	-	<1.0	<1.0	<1.0	<1.0	<1.0
Chloromethane	ug/L	2	-	-	<2.0	-	-	-	<2.0	-	<2.0	<2.0	<1.0
Dibromochloromethane	ug/L	1	-	-	<1.0	-	-	-	<1.0	<1.0	<1.0	<1.0	<1.0
Dibromomethane	ug/L	1	-	-	<1.0	-	-	-	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichlorobenzene	ug/L	0.5	7	0.7	<0.5	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5
1,3-Dichlorobenzene	ug/L	1	1500	150	<1.0	-	-	-	<1.0	<1.0	<1.0	<1.0	<1.0
1,4-Dichlorobenzene	ug/L	1	260	-	<1.0	-	-	-	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethane	ug/L	1	-	-	<1.0	-	-	-	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichloroethane	ug/L	1	1000	100	<0.3	-	-	-	<0.3	<0.3	<0.3	<0.3	<1.0
1,1-Dichloroethene	ug/L	1	-	-	<1.0	-	-	-	<1.0	<1.0	<1.0	<1.0	<1.0
cis-1,2-Dichloroethene	ug/L	1	-	-	<1.0	-	-	-	<1.0	<1.0	<1.0	<1.0	<1.0
trans-1,2-Dichloroethene	ug/L	1	-	-	<1.0	-	-	-	<1.0	<1.0	<1.0	<1.0	<1.0

MORRISON HERSHFIELD

TABLE 8: 2016 Leachate Manhole / GW Interceptor WATER QUALITY - PETROLEUM HYDROCARBONS

SAMPLE LOCATION					LEACHATE MANHOLE				GW INTERCEPTOR				
SAMPLE ID					Leachate Manhole	Leachate Manhole	LM	Leachate Manhole	GW Interceptor	GW Interceptor	GW.INT	GW.INT-DUP	GW INT
SAMPLE DATE					23-Mar-16	29-Jun-16	21-Sep-16	22-Dec-16	23-Mar-16	29-Jun-16	21-Sep-16	21-Sep-16	22-Dec-16
MATRIX	UNITS	MRL	BCCSR-SR-Water FAL (ug/L)	BC Ambient Water Quality Guidelines (ug/L)	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q3	Q4
1,2-Dichloropropane	ug/L	1	-	-	<1.0	-	-	-	<1.0	<1.0	<1.0	<1.0	<1.0
cis-1,3-Dichloropropene	ug/L	1	-	-	<1.0	-	-	-	<1.0	-	<1.0	<1.0	-
trans-1,3-Dichloropropene	ug/L	1	-	-	<1.0	-	-	-	<1.0	-	<1.0	<1.0	-
Ethylbenzene	ug/L	1	2000	200	<1.0	-	-	-	<1.0	<1.0	<1.0	<1.0	<1.0
Methyl tert-butyl ether	ug/L	1	34000	3400	<1.0	-	-	-	<1.0	<1.0	<1.0	<1.0	<1.0
Methylene chloride	ug/L	3	980	98.1	<3.0	-	-	-	<3.0	<3.0	<3.0	<3.0	<3.0
4-Methyl-2-Pentanone (MIBK)	ug/L	10	-	-	<10.0	-	-	-	<10.0	-	<10.0	<10.0	<1.0
Styrene	ug/L	1	720	72	<1.0	-	-	-	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,1,2-Tetrachloroethane	ug/L	1	-	-	<1.0	-	-	-	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,2,2-Tetrachloroethane	ug/L	1	1100	111	<1.0	-	-	-	<1.0	<1.0	<1.0	<1.0	<0.5
Tetrachloroethene	ug/L	1	-	-	<1.0	-	-	-	<1.0	<1.0	<1.0	<1.0	<1.0
Toluene	ug/L	1	390	0.5	<1.0	-	-	-	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,1-Trichloroethane	ug/L	1	-	11100	<1.0	-	-	-	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,2-Trichloroethane	ug/L	1	-	-	<1.0	-	-	-	<1.0	<1.0	<1.0	<1.0	<1.0
Trichloroethene	ug/L	1	200	21	<1.0	-	-	-	<1.0	<1.0	<1.0	<1.0	<1.0
Trichlorofluoromethane	ug/L	1	-	-	<1.0	-	-	-	<1.0	<1.0	<1.0	<1.0	<1.0
Vinyl chloride	ug/L	2	-	-	<2.0	-	-	-	<2.0	<2.0	<2.0	<2.0	<1.0
m,p-Xylene	ug/L	1	-	30	<1.0	-	-	-	<1.0	-	<1.0	<1.0	-
Xylenes (total)	ug/L	2	-	30	<2.0	-	-	-	<2.0	<2.0	<2.0	<2.0	<2.0
o-Xylene	ug/L	1	-	30	<1.0	-	-	-	<1.0	-	<1.0	<1.0	-
1,2-Dibromoethane	ug/L	0.3	-	-	<0.3	-	-	-	<0.3	<0.3	<0.3	<0.3	<0.2
1,2-Dichlorobenzene	ug/L	0.5	7	-	<0.5	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5

Yellow = exceed standard or exceed standard AND guideline
Blue = exceed guideline
Orange = RDL is > guideline or standard

MORRISON HERSHFIELD

TABLE 9: 2016 LANDFILL GAS METHANE MEASUREMENTS (% CH_4)

	Monitoring Probe																			
SAMPLE DATE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17A	18	19	20	21
7-Jan-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Trace	0	0	0	0	0
13-Jan-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20-Jan-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29-Jan-16	0	0	0	0	0	0	0	0	0	0	0	0	0	Trace	0	0	0	0	0	0	0
5-Feb-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12-Feb-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19-Feb-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27-Feb-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4-Mar-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11-Mar-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18-Mar-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25-Mar-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1-Apr-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8-Apr-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15-Apr-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22-Apr-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29-Apr-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
31-May-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20-Jun-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22-Jul-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2-Sep-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30-Sep-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27-Oct-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4-Nov-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11-Nov-16	0	0	0	0	0	0	0	0	0	0	0	Trace	0	0	0	0	0	0	0	0	0
18-Nov-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25-Nov-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2-Dec-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9-Dec-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0.50%	0	0	0	0	0	0	0
16-Dec-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0.50%	0	0	0	0	0	0	0
23-Dec-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30-Dec-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

APPENDIX A: Analytical Laboratory Results for Leachate, Groundwater & Surface Water Results

CERTIFICATE OF ANALYSIS

REPORTED TO Morrison Hershfield Limited
310 - 4321 Still Creek Drive
Burnaby, BC V5C 6S7

TEL (604) 454-0402
FAX (604) 454-0403

ATTENTION	Josie Gilson	**WORK ORDER**	6031702
PO NUMBER		**RECEIVED / TEMP**	2016-03-24 10:45 / 11°C
PROJECT	Whistler Landfill - Spring/Fall	**REPORTED**	2016-04-06
PROJECT INFO		**COC NUMBER**	B42328

General Comments:

CARO Analytical Services employs methods which are conducted according to procedures accepted by appropriate regulatory agencies, and/or are conducted in accordance with recognized professional standards using accepted testing methodologies and quality control efforts, except where otherwise agreed to by the client.

The results in this report apply to the samples analyzed in accordance with the Chain of Custody or Sample Requisition document. This analytical report must be reproduced in its entirety. CARO is not responsible for any loss or damage resulting directly or indirectly from error or omission in the conduct of testing. Liability is limited to the cost of analysis. Samples will be disposed of 30 days after the test report has been issued unless otherwise agreed to in writing.

Authorized By: **Brent Coates, B.Sc.**
Division Manager, Richmond

If you have any questions or concerns, please contact your Account Manager:
Kathleen Fyffe, Dipl T (kfyffe@caro.ca)

ANALYSIS INFORMATION

REPORTED TO	Morrison Hershfield Limited	**WORK ORDER**	6031702
PROJECT	Whistler Landfill - Spring/Fall	**REPORTED**	2016-04-06

Analysis Description	Method Reference	Technique	Location
Alkalinity, Speciated	APHA 2320 B*	Titration with H2SO4	Kelowna
Ammonia, Total	APHA 4500-NH3 G*	Automated Colorimetry (Phenate)	Kelowna
Anions by IC	APHA 4110 B	Ion Chromatography with Chemical Suppression of Eluent Conductivity	Kelowna
COD	APHA 5220 D	Closed Reflux, Colorimetry	Kelowna
Conductivity	APHA 2510 B	Conductivity Meter	Kelowna
Conductivity	APHA 2510 B	Conductivity Meter	Richmond
Dissolved Metals	APHA 3030 B / APHA 3125 B	0.45 µm Filtration / Inductively Coupled Plasma Mass Spectrometry (ICP-MS)	Richmond
EPH	EPA 3511* / BCMOE EPHw	Hexane MicroExtraction (Base/Neutral) / Gas Chromatography (GC-FID)	Richmond
Hardness (as CaCO3)	APHA 2340 B	Calculation: 2.497 [Ca] + 4.118 [Mg]	N/A
HEPHw	BCMOE HEPHw	Calculation: EPHw19-32 - [B(a)AN + B(a)P + FLAN + PY]	N/A
LEPHw	BCMOE LEPHw	Calculation: EPHw10-19 - [ANA + ACR + ANTH + FL + NA + PH]	N/A
Mercury, dissolved by CVAFS	EPA 245.7*	BrCl2 Oxidation / Cold Vapor Atomic Fluorescence Spectrometry (CVAFS)	Richmond
Mercury, total by CVAFS	EPA 245.7*	BrCl2 Oxidation / Cold Vapor Atomic Fluorescence Spectrometry (CVAFS)	Richmond
Nitrate+Nitrite	APHA 4500-NO3- F	Automated Colorimetry (Cadmium Reduction)	Kelowna
Nitrite by Colorimetry	APHA 4500-NO3- F	Automated Colorimetry (Cadmium Reduction)	Kelowna
Nitrogen, Total Kjeldahl	APHA 4500-Norg D*	Block Digestion and Flow Injection Analysis	Kelowna
PAH	EPA 3511* / EPA 8270D	Hexane MicroExtraction (Base/Neutral) / GC-MS (SIM)	Richmond
pH	APHA 4500-H+ B	Electrometry	Kelowna
pH	APHA 4500-H+ B	Electrometry	Richmond
Phosphorus, Total by Colorimetry	APHA 4500-P B.5* / APHA 4500-P F	Persulfate Digestion / Automated Colorimetry (Ascorbic Acid)	Kelowna
Solids, Total Suspended	APHA 2540 D*	Gravimetry (Dried at 103-105C)	Richmond
Total Recoverable Metals	APHA 3030E* / APHA 3125 B	HNO3+HCl Hot Block Digestion / Inductively Coupled Plasma Mass Spectrometry (ICP-MS)	Richmond
VH	EPA 5030B / BCMOE VHw	Purge&Trap / Gas Chromatography (GC-FID)	Richmond
VOC	EPA 5030B / EPA 8260B	Purge&Trap / GC-MS (SIM)	Richmond
VPHw	BCMOE VPH	Calculation: VH - (Benzene + Toluene + Ethylbenzene + Xylenes + Styrene)	N/A

Note: An asterisk in the Method Reference indicates that the CARO method has been modified from the reference method

Method Reference Descriptions:

APHA	Standard Methods for the Examination of Water and Wastewater, 22nd Edition, American Public Health Association/American Water Works Association/Water Environment Federation
BCMOE	British Columbia Environmental Laboratory Manual, 2015, British Columbia Ministry of Environment
EPA	United States Environmental Protection Agency Test Methods

ANALYSIS INFORMATION

REPORTED TO	Morrison Hershfield Limited	**WORK ORDER**	6031702
PROJECT	Whistler Landfill - Spring/Fall	**REPORTED**	2016-04-06

Glossary of Terms:

MRL	Method Reporting Limit
<	Less than the Reported Detection Limit (RDL) - the RDL may be higher than the MRL due to various factors such as dilutions, limited sample volume, high moisture, or interferences
mg/L	Milligrams per litre
pH units	pH < 7 = acidic, ph > 7 = basic
µg/L	Micrograms per litre
µS/cm	Microsiemens per centimetre

Standards / Guidelines Referenced in this Report:

BC CSR Schedule 4/5/6/11 Residential/Aquatic Water

Website: http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/375_96_00

Note: In some cases, the values displayed on the report represent the lowest guideline and are to be verified by the end user

REPORTED TO	Morrison Hershfield Limited	**WORK ORDER**	6031702
PROJECT	Whistler Landfill - Spring/Fall	**REPORTED**	2016-04-06

Analyte	Result / *Recovery*	Standard / Guideline	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: MW2S (6031702-01) [Water] Sampled: 2016-03-23 00:00							
Anions							
Bromide	< 0.10	N/A	0.10	mg/L	N/A	2016-03-30	
Chloride	**5.61**	1500	0.10	mg/L	N/A	2016-03-30	
Fluoride	**0.18**	2	0.01	mg/L	N/A	2016-03-30	
Nitrite as N	< 0.001	0.2	0.001	mg/L	N/A	2016-03-24	
Nitrate+Nitrite as N	**0.012**	400	0.005	mg/L	N/A	2016-04-01	
Sulfate	**63.9**	1000	1.0	mg/L	N/A	2016-03-30	
General Parameters							
pH	**6.50**	N/A	0.01	pH units	2016-03-29	2016-03-29	HT2
Conductivity (EC)	**418**	N/A	2	µS/cm	N/A	2016-03-30	
Ammonia as N, Total	**5.00**	N/A	0.005	mg/L	N/A	2016-03-31	
Nitrogen, Total Kjeldahl	**5.56**	N/A	0.05	mg/L	2016-03-30	2016-03-31	
Alkalinity, Total as CaCO3	**96**	N/A	1	mg/L	N/A	2016-03-31	
Alkalinity, Phenolphthalein as CaCO3	< 1	N/A	1	mg/L	N/A	2016-03-31	
Alkalinity, Bicarbonate as CaCO3	**96**	N/A	1	mg/L	N/A	2016-03-31	
Alkalinity, Carbonate as CaCO3	< 1	N/A	1	mg/L	N/A	2016-03-31	
Alkalinity, Hydroxide as CaCO3	< 1	N/A	1	mg/L	N/A	2016-03-31	
Chemical Oxygen Demand	**15**	N/A	5	mg/L	N/A	2016-04-04	
Solids, Total Suspended	**200**	N/A	2	mg/L	N/A	2016-03-30	
Phosphorus, Total as P	**0.178**	N/A	0.002	mg/L	2016-03-31	2016-04-01	
Calculated Parameters							
Hardness, Total (as CaCO3)	**121**	N/A	0.50	mg/L	N/A	N/A	
Nitrate as N	**0.012**	400	0.005	mg/L	N/A	N/A	
Nitrogen, Total	**5.57**	N/A	0.500	mg/L	N/A	N/A	
Dissolved Metals							
Aluminum, dissolved	**0.028**	N/A	0.005	mg/L	N/A	2016-03-29	
Antimony, dissolved	< 0.0001	0.2	0.0001	mg/L	N/A	2016-03-29	
Arsenic, dissolved	**0.0078**	0.05	0.0005	mg/L	N/A	2016-03-29	
Barium, dissolved	**0.083**	5	0.005	mg/L	N/A	2016-03-29	
Beryllium, dissolved	< 0.0001	0.053	0.0001	mg/L	N/A	2016-03-29	
Bismuth, dissolved	< 0.0001	N/A	0.0001	mg/L	N/A	2016-03-29	
Boron, dissolved	**0.154**	50	0.004	mg/L	N/A	2016-03-29	
Cadmium, dissolved	**0.00001**	0.0001	0.00001	mg/L	N/A	2016-03-29	
Calcium, dissolved	**38.2**	N/A	0.2	mg/L	N/A	2016-03-29	
Chromium, dissolved	< 0.0005	N/A	0.0005	mg/L	N/A	2016-03-29	
Cobalt, dissolved	**0.00152**	0.04	0.00005	mg/L	N/A	2016-03-29	
Copper, dissolved	**0.0013**	0.02	0.0002	mg/L	N/A	2016-03-29	
Iron, dissolved	**33.1**	N/A	0.010	mg/L	N/A	2016-03-29	
Lead, dissolved	**0.0001**	0.04	0.0001	mg/L	N/A	2016-03-29	
Lithium, dissolved	< 0.0001	N/A	0.0001	mg/L	N/A	2016-03-29	
Magnesium, dissolved	**6.24**	N/A	0.01	mg/L	N/A	2016-03-29	
Manganese, dissolved	**1.83**	N/A	0.0002	mg/L	N/A	2016-03-29	
Mercury, dissolved	< 0.00002	0.001	0.00002	mg/L	2016-03-29	2016-03-30	
Molybdenum, dissolved	**0.0044**	10	0.0001	mg/L	N/A	2016-03-29	
Nickel, dissolved	**0.0010**	0.25	0.0002	mg/L	N/A	2016-03-29	

REPORTED TO	Morrison Hershfield Limited	**WORK ORDER**	6031702
PROJECT	Whistler Landfill - Spring/Fall	**REPORTED**	2016-04-06

Analyte	Result / *Recovery*	Standard / Guideline	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: MW2S (6031702-01) [Water] Sampled: 2016-03-23 00:00, Continued							
Dissolved Metals, Continued							
Phosphorus, dissolved	**0.04**	N/A	0.02	mg/L	N/A	2016-03-29	
Potassium, dissolved	**9.32**	N/A	0.02	mg/L	N/A	2016-03-29	
Selenium, dissolved	< 0.0005	0.01	0.0005	mg/L	N/A	2016-03-29	
Silicon, dissolved	**10.2**	N/A	0.5	mg/L	N/A	2016-03-29	
Silver, dissolved	< 0.00005	0.0005	0.00005	mg/L	N/A	2016-03-29	
Sodium, dissolved	**9.72**	N/A	0.02	mg/L	N/A	2016-03-29	
Strontium, dissolved	**0.215**	N/A	0.001	mg/L	N/A	2016-03-29	
Sulfur, dissolved	**23**	N/A	1	mg/L	N/A	2016-03-29	
Tellurium, dissolved	< 0.0002	N/A	0.0002	mg/L	N/A	2016-03-29	
Thallium, dissolved	< 0.00002	0.003	0.00002	mg/L	N/A	2016-03-29	
Thorium, dissolved	< 0.0001	N/A	0.0001	mg/L	N/A	2016-03-29	
Tin, dissolved	< 0.0002	N/A	0.0002	mg/L	N/A	2016-03-29	
Titanium, dissolved	< 0.005	1	0.005	mg/L	N/A	2016-03-29	
Uranium, dissolved	**0.00003**	3	0.00002	mg/L	N/A	2016-03-29	
Vanadium, dissolved	< 0.001	N/A	0.001	mg/L	N/A	2016-03-29	
Zinc, dissolved	**0.009**	0.075	0.004	mg/L	N/A	2016-03-29	
Zirconium, dissolved	< 0.0001	N/A	0.0001	mg/L	N/A	2016-03-29	
BCMOE Aggregate Hydrocarbons							
VPHw	< 100	1500	100	µg/L	N/A	N/A	
EPHw10-19	< 250	5000	250	µg/L	2016-03-30	2016-04-02	
EPHw19-32	< 250	N/A	250	µg/L	2016-03-30	2016-04-02	
LEPHw	< 250	500	250	µg/L	N/A	N/A	
HEPHw	< 250	N/A	250	µg/L	N/A	N/A	
VHw (6-10)	< 100	15000	100	µg/L	N/A	2016-03-28	
Surrogate: 2-Methylnonane	*71*		*60-140*	%	*2016-03-30*	*2016-04-02*	
Polycyclic Aromatic Hydrocarbons (PAH)							
Acenaphthene	< 0.05	60	0.05	µg/L	2016-03-30	2016-04-02	
Acenaphthylene	< 0.20	N/A	0.20	µg/L	2016-03-30	2016-04-02	
Acridine	< 0.10	0.5	0.10	µg/L	2016-03-30	2016-04-02	
Anthracene	< 0.01	1	0.01	µg/L	2016-03-30	2016-04-02	
Benz (a) anthracene	< 0.01	1	0.01	µg/L	2016-03-30	2016-04-02	
Benzo (a) pyrene	< 0.01	0.1	0.01	µg/L	2016-03-30	2016-04-02	
Benzo (b) fluoranthene	< 0.05	N/A	0.05	µg/L	2016-03-30	2016-04-02	
Benzo (g,h,i) perylene	< 0.05	N/A	0.05	µg/L	2016-03-30	2016-04-02	
Benzo (k) fluoranthene	< 0.05	N/A	0.05	µg/L	2016-03-30	2016-04-02	
Chrysene	< 0.05	1	0.05	µg/L	2016-03-30	2016-04-02	
Dibenz (a,h) anthracene	< 0.05	N/A	0.05	µg/L	2016-03-30	2016-04-02	
Fluoranthene	< 0.03	2	0.03	µg/L	2016-03-30	2016-04-02	
Fluorene	< 0.05	120	0.05	µg/L	2016-03-30	2016-04-02	
Indeno (1,2,3-cd) pyrene	< 0.05	N/A	0.05	µg/L	2016-03-30	2016-04-02	
Naphthalene	< 0.20	10	0.20	µg/L	2016-03-30	2016-04-02	
Phenanthrene	< 0.10	3	0.10	µg/L	2016-03-30	2016-04-02	
Pyrene	< 0.02	0.2	0.02	µg/L	2016-03-30	2016-04-02	
Quinoline	< 0.10	34	0.10	µg/L	2016-03-30	2016-04-02	

REPORTED TO	Morrison Hershfield Limited	**WORK ORDER**	6031702
PROJECT	Whistler Landfill - Spring/Fall	**REPORTED**	2016-04-06

Analyte	Result / *Recovery*	Standard / Guideline	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: MW2S (6031702-01) [Water] Sampled: 2016-03-23 00:00, Continued							
Polycyclic Aromatic Hydrocarbons (PAH), Continued							
Surrogate: Acridine-d9	*103*		*60-140*	%	*2016-03-30*	*2016-04-02*	
Surrogate: Naphthalene-d8	*101*		*60-140*	%	*2016-03-30*	*2016-04-02*	
Surrogate: Perylene-d12	*136*		*60-140*	%	*2016-03-30*	*2016-04-02*	
Volatile Organic Compounds (VOC)							
Acetone	< 10.0	N/A	10.0	µg/L	N/A	2016-03-28	
Benzene	< 0.5	1000	0.5	µg/L	N/A	2016-03-28	
Bromodichloromethane	< 1.0	N/A	1.0	µg/L	N/A	2016-03-28	
Bromoform	< 1.0	N/A	1.0	µg/L	N/A	2016-03-28	
Bromomethane	< 2.0	N/A	2.0	µg/L	N/A	2016-03-28	
2-Butanone (MEK)	< 5.0	N/A	5.0	µg/L	N/A	2016-03-28	
Carbon tetrachloride	< 1.0	130	1.0	µg/L	N/A	2016-03-28	
Chlorobenzene	< 1.0	13	1.0	µg/L	N/A	2016-03-28	
Chloroethane	< 2.0	N/A	2.0	µg/L	N/A	2016-03-28	
Chloroform	< 1.0	20	1.0	µg/L	N/A	2016-03-28	
Chloromethane	< 2.0	N/A	2.0	µg/L	N/A	2016-03-28	
Dibromochloromethane	< 1.0	N/A	1.0	µg/L	N/A	2016-03-28	
Dibromomethane	< 1.0	N/A	1.0	µg/L	N/A	2016-03-28	
1,3-Dichlorobenzene	< 1.0	1500	1.0	µg/L	N/A	2016-03-28	
1,4-Dichlorobenzene	< 1.0	260	1.0	µg/L	N/A	2016-03-28	
1,1-Dichloroethane	< 1.0	N/A	1.0	µg/L	N/A	2016-03-28	
1,2-Dichloroethane	< 1.0	1000	1.0	µg/L	N/A	2016-03-28	
1,1-Dichloroethene	< 1.0	N/A	1.0	µg/L	N/A	2016-03-28	
cis-1,2-Dichloroethene	< 1.0	N/A	1.0	µg/L	N/A	2016-03-28	
trans-1,2-Dichloroethene	< 1.0	N/A	1.0	µg/L	N/A	2016-03-28	
1,2-Dichloropropane	< 1.0	N/A	1.0	µg/L	N/A	2016-03-28	
cis-1,3-Dichloropropene	< 1.0	N/A	1.0	µg/L	N/A	2016-03-28	
trans-1,3-Dichloropropene	< 1.0	N/A	1.0	µg/L	N/A	2016-03-28	
Ethylbenzene	< 1.0	2000	1.0	µg/L	N/A	2016-03-28	
Methyl tert-butyl ether	< 1.0	34000	1.0	µg/L	N/A	2016-03-28	
Methylene chloride	< 3.0	980	3.0	µg/L	N/A	2016-03-28	
4-Methyl-2-Pentanone (MIBK)	< 10.0	N/A	10.0	µg/L	N/A	2016-03-28	
Styrene	< 1.0	720	1.0	µg/L	N/A	2016-03-28	
1,1,1,2-Tetrachloroethane	< 1.0	N/A	1.0	µg/L	N/A	2016-03-28	
1,1,2,2-Tetrachloroethane	< 1.0	1100	1.0	µg/L	N/A	2016-03-28	
Tetrachloroethene	< 1.0	N/A	1.0	µg/L	N/A	2016-03-28	
Toluene	< 1.0	390	1.0	µg/L	N/A	2016-03-28	
1,1,1-Trichloroethane	< 1.0	N/A	1.0	µg/L	N/A	2016-03-28	
1,1,2-Trichloroethane	< 1.0	N/A	1.0	µg/L	N/A	2016-03-28	
Trichloroethene	< 1.0	200	1.0	µg/L	N/A	2016-03-28	
Trichlorofluoromethane	< 1.0	N/A	1.0	µg/L	N/A	2016-03-28	
Vinyl chloride	< 2.0	N/A	2.0	µg/L	N/A	2016-03-28	
m,p-Xylene	< 1.0	N/A	1.0	µg/L	N/A	2016-03-28	
o-Xylene	< 1.0	N/A	1.0	µg/L	N/A	2016-03-28	
Xylenes (total)	< 2.0	N/A	2.0	µg/L	N/A	2016-03-28	
1,2-Dibromoethane	< 0.3	N/A	0.3	µg/L	N/A	2016-03-28	

REPORTED TO	Morrison Hershfield Limited	**WORK ORDER**	6031702
PROJECT	Whistler Landfill - Spring/Fall	**REPORTED**	2016-04-06

Analyte	Result / *Recovery*	Standard / Guideline	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: MW2S (6031702-01) [Water] Sampled: 2016-03-23 00:00, Continued							
Volatile Organic Compounds (VOC), Continued							
1,2-Dichlorobenzene	< 0.5	7	0.5	µg/L	N/A	2016-03-28	
Surrogate: Toluene-d8	*100*		*70-130*	%	*N/A*	*2016-03-28*	
Surrogate: 4-Bromofluorobenzene	*89*		*70-130*	%	*N/A*	*2016-03-28*	
Surrogate: 1,4-Dichlorobenzene-d4	*89*		*70-130*	%	*N/A*	*2016-03-28*	
Sample ID: MW2D (6031702-02) [Water] Sampled: 2016-03-23 00:00							
Anions							
Bromide	**0.13**	N/A	0.10	mg/L	N/A	2016-03-30	
Chloride	**37.4**	1500	0.10	mg/L	N/A	2016-03-30	
Fluoride	**0.20**	2	0.01	mg/L	N/A	2016-03-30	
Nitrite as N	< 0.001	0.2	0.001	mg/L	N/A	2016-03-24	
Nitrate+Nitrite as N	**0.009**	400	0.005	mg/L	N/A	2016-04-01	
Sulfate	**313**	1000	1.0	mg/L	N/A	2016-03-30	
General Parameters							
pH	**6.57**	N/A	0.01	pH units	2016-03-29	2016-03-29	HT2
Conductivity (EC)	**1400**	N/A	2	µS/cm	N/A	2016-03-30	
Ammonia as N, Total	**12.5**	N/A	0.005	mg/L	N/A	2016-03-31	
Nitrogen, Total Kjeldahl	**24.5**	N/A	0.05	mg/L	2016-03-30	2016-03-31	
Alkalinity, Total as CaCO3	**237**	N/A	1	mg/L	N/A	2016-03-31	
Alkalinity, Phenolphthalein as CaCO3	< 1	N/A	1	mg/L	N/A	2016-03-31	
Alkalinity, Bicarbonate as CaCO3	**237**	N/A	1	mg/L	N/A	2016-03-31	
Alkalinity, Carbonate as CaCO3	< 1	N/A	1	mg/L	N/A	2016-03-31	
Alkalinity, Hydroxide as CaCO3	< 1	N/A	1	mg/L	N/A	2016-03-31	
Chemical Oxygen Demand	**30**	N/A	5	mg/L	N/A	2016-04-04	
Solids, Total Suspended	**1340**	N/A	2	mg/L	N/A	2016-03-30	
Phosphorus, Total as P	**2.33**	N/A	0.002	mg/L	2016-03-31	2016-04-04	
Calculated Parameters							
Hardness, Total (as CaCO3)	**508**	N/A	0.50	mg/L	N/A	N/A	
Nitrate as N	**0.009**	400	0.005	mg/L	N/A	N/A	
Nitrogen, Total	**24.5**	N/A	5.00	mg/L	N/A	N/A	
Dissolved Metals							
Aluminum, dissolved	< 0.005	N/A	0.005	mg/L	N/A	2016-03-29	
Antimony, dissolved	< 0.0001	0.2	0.0001	mg/L	N/A	2016-03-29	
Arsenic, dissolved	**0.0156**	0.05	0.0005	mg/L	N/A	2016-03-29	
Barium, dissolved	**0.036**	5	0.005	mg/L	N/A	2016-03-29	
Beryllium, dissolved	< 0.0001	0.053	0.0001	mg/L	N/A	2016-03-29	
Bismuth, dissolved	< 0.0001	N/A	0.0001	mg/L	N/A	2016-03-29	
Boron, dissolved	**0.366**	50	0.004	mg/L	N/A	2016-03-29	
Cadmium, dissolved	**0.00001**	0.0001	0.00001	mg/L	N/A	2016-03-29	
Calcium, dissolved	**170**	N/A	0.2	mg/L	N/A	2016-03-29	
Chromium, dissolved	< 0.0005	N/A	0.0005	mg/L	N/A	2016-03-29	
Cobalt, dissolved	**0.0161**	0.04	0.00005	mg/L	N/A	2016-03-29	
Copper, dissolved	**0.0004**	0.02	0.0002	mg/L	N/A	2016-03-29	

REPORTED TO	Morrison Hershfield Limited	**WORK ORDER**	6031702
PROJECT	Whistler Landfill - Spring/Fall	**REPORTED**	2016-04-06

Analyte	Result / *Recovery*	Standard / Guideline	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: MW2D (6031702-02) [Water] Sampled: 2016-03-23 00:00, Continued							
Dissolved Metals, Continued							
Iron, dissolved	**68.6**	N/A	0.010	mg/L	N/A	2016-03-29	
Lead, dissolved	< 0.0001	0.04	0.0001	mg/L	N/A	2016-03-29	
Lithium, dissolved	< 0.0001	N/A	0.0001	mg/L	N/A	2016-03-29	
Magnesium, dissolved	**20.6**	N/A	0.01	mg/L	N/A	2016-03-29	
Manganese, dissolved	**3.95**	N/A	0.0002	mg/L	N/A	2016-03-29	
Mercury, dissolved	< 0.00002	0.001	0.00002	mg/L	2016-03-29	2016-03-30	
Molybdenum, dissolved	**0.0185**	10	0.0001	mg/L	N/A	2016-03-29	
Nickel, dissolved	**0.0032**	0.25	0.0002	mg/L	N/A	2016-03-29	
Phosphorus, dissolved	**0.10**	N/A	0.02	mg/L	N/A	2016-03-29	
Potassium, dissolved	**21.8**	N/A	0.02	mg/L	N/A	2016-03-29	
Selenium, dissolved	< 0.0005	0.01	0.0005	mg/L	N/A	2016-03-29	
Silicon, dissolved	**16.2**	N/A	0.5	mg/L	N/A	2016-03-29	
Silver, dissolved	< 0.00005	0.0005	0.00005	mg/L	N/A	2016-03-29	
Sodium, dissolved	**35.8**	N/A	0.02	mg/L	N/A	2016-03-29	
Strontium, dissolved	**0.659**	N/A	0.001	mg/L	N/A	2016-03-29	
Sulfur, dissolved	**111**	N/A	1	mg/L	N/A	2016-03-29	
Tellurium, dissolved	< 0.0002	N/A	0.0002	mg/L	N/A	2016-03-29	
Thallium, dissolved	< 0.00002	0.003	0.00002	mg/L	N/A	2016-03-29	
Thorium, dissolved	< 0.0001	N/A	0.0001	mg/L	N/A	2016-03-29	
Tin, dissolved	< 0.0002	N/A	0.0002	mg/L	N/A	2016-03-29	
Titanium, dissolved	< 0.005	1	0.005	mg/L	N/A	2016-03-29	
Uranium, dissolved	**0.00024**	3	0.00002	mg/L	N/A	2016-03-29	
Vanadium, dissolved	< 0.001	N/A	0.001	mg/L	N/A	2016-03-29	
Zinc, dissolved	**0.004**	0.075	0.004	mg/L	N/A	2016-03-29	
Zirconium, dissolved	< 0.0001	N/A	0.0001	mg/L	N/A	2016-03-29	
BCMOE Aggregate Hydrocarbons							
VPHw	< 100	1500	100	µg/L	N/A	N/A	
EPHw10-19	< 250	5000	250	µg/L	2016-03-30	2016-04-02	
EPHw19-32	< 250	N/A	250	µg/L	2016-03-30	2016-04-02	
LEPHw	< 250	500	250	µg/L	N/A	N/A	
HEPHw	< 250	N/A	250	µg/L	N/A	N/A	
VHw (6-10)	< 100	15000	100	µg/L	N/A	2016-03-28	
Surrogate: 2-Methylnonane	*71*		*60-140*	%	*2016-03-30*	*2016-04-02*	
Polycyclic Aromatic Hydrocarbons (PAH)							
Acenaphthene	< 0.05	60	0.05	µg/L	2016-03-30	2016-04-02	
Acenaphthylene	< 0.20	N/A	0.20	µg/L	2016-03-30	2016-04-02	
Acridine	< 0.10	0.5	0.10	µg/L	2016-03-30	2016-04-02	
Anthracene	< 0.01	1	0.01	µg/L	2016-03-30	2016-04-02	
Benz (a) anthracene	< 0.01	1	0.01	µg/L	2016-03-30	2016-04-02	
Benzo (a) pyrene	< 0.01	0.1	0.01	µg/L	2016-03-30	2016-04-02	
Benzo (b) fluoranthene	< 0.05	N/A	0.05	µg/L	2016-03-30	2016-04-02	
Benzo (g,h,i) perylene	< 0.05	N/A	0.05	µg/L	2016-03-30	2016-04-02	
Benzo (k) fluoranthene	< 0.05	N/A	0.05	µg/L	2016-03-30	2016-04-02	
Chrysene	< 0.05	1	0.05	µg/L	2016-03-30	2016-04-02	

REPORTED TO	Morrison Hershfield Limited	**WORK ORDER**	6031702
PROJECT	Whistler Landfill - Spring/Fall	**REPORTED**	2016-04-06

Analyte	Result / *Recovery*	Standard / Guideline	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: MW2D (6031702-02) [Water] Sampled: 2016-03-23 00:00, Continued							
Polycyclic Aromatic Hydrocarbons (PAH), Continued							
Dibenz (a,h) anthracene	< 0.05	N/A	0.05	µg/L	2016-03-30	2016-04-02	
Fluoranthene	< 0.03	2	0.03	µg/L	2016-03-30	2016-04-02	
Fluorene	< 0.05	120	0.05	µg/L	2016-03-30	2016-04-02	
Indeno (1,2,3-cd) pyrene	< 0.05	N/A	0.05	µg/L	2016-03-30	2016-04-02	
Naphthalene	< 0.20	10	0.20	µg/L	2016-03-30	2016-04-02	
Phenanthrene	< 0.10	3	0.10	µg/L	2016-03-30	2016-04-02	
Pyrene	< 0.02	0.2	0.02	µg/L	2016-03-30	2016-04-02	
Quinoline	< 0.10	34	0.10	µg/L	2016-03-30	2016-04-02	
Surrogate: Acridine-d9	*110*		*60-140*	%	*2016-03-30*	*2016-04-02*	
Surrogate: Naphthalene-d8	*90*		*60-140*	%	*2016-03-30*	*2016-04-02*	
Surrogate: Perylene-d12	*127*		*60-140*	%	*2016-03-30*	*2016-04-02*	
Volatile Organic Compounds (VOC)							
Acetone	< 10.0	N/A	10.0	µg/L	N/A	2016-03-28	
Benzene	< 0.5	1000	0.5	µg/L	N/A	2016-03-28	
Bromodichloromethane	< 1.0	N/A	1.0	µg/L	N/A	2016-03-28	
Bromoform	< 1.0	N/A	1.0	µg/L	N/A	2016-03-28	
Bromomethane	< 2.0	N/A	2.0	µg/L	N/A	2016-03-28	
2-Butanone (MEK)	< 5.0	N/A	5.0	µg/L	N/A	2016-03-28	
Carbon tetrachloride	< 1.0	130	1.0	µg/L	N/A	2016-03-28	
Chlorobenzene	**1.4**	13	1.0	µg/L	N/A	2016-03-28	
Chloroethane	< 2.0	N/A	2.0	µg/L	N/A	2016-03-28	
Chloroform	< 1.0	20	1.0	µg/L	N/A	2016-03-28	
Chloromethane	< 2.0	N/A	2.0	µg/L	N/A	2016-03-28	
Dibromochloromethane	< 1.0	N/A	1.0	µg/L	N/A	2016-03-28	
Dibromomethane	< 1.0	N/A	1.0	µg/L	N/A	2016-03-28	
1,3-Dichlorobenzene	< 1.0	1500	1.0	µg/L	N/A	2016-03-28	
1,4-Dichlorobenzene	< 1.0	260	1.0	µg/L	N/A	2016-03-28	
1,1-Dichloroethane	< 1.0	N/A	1.0	µg/L	N/A	2016-03-28	
1,2-Dichloroethane	< 1.0	1000	1.0	µg/L	N/A	2016-03-28	
1,1-Dichloroethene	< 1.0	N/A	1.0	µg/L	N/A	2016-03-28	
cis-1,2-Dichloroethene	< 1.0	N/A	1.0	µg/L	N/A	2016-03-28	
trans-1,2-Dichloroethene	< 1.0	N/A	1.0	µg/L	N/A	2016-03-28	
1,2-Dichloropropane	< 1.0	N/A	1.0	µg/L	N/A	2016-03-28	
cis-1,3-Dichloropropene	< 1.0	N/A	1.0	µg/L	N/A	2016-03-28	
trans-1,3-Dichloropropene	< 1.0	N/A	1.0	µg/L	N/A	2016-03-28	
Ethylbenzene	< 1.0	2000	1.0	µg/L	N/A	2016-03-28	
Methyl tert-butyl ether	< 1.0	34000	1.0	µg/L	N/A	2016-03-28	
Methylene chloride	< 3.0	980	3.0	µg/L	N/A	2016-03-28	
4-Methyl-2-Pentanone (MIBK)	< 10.0	N/A	10.0	µg/L	N/A	2016-03-28	
Styrene	< 1.0	720	1.0	µg/L	N/A	2016-03-28	
1,1,1,2-Tetrachloroethane	< 1.0	N/A	1.0	µg/L	N/A	2016-03-28	
1,1,2,2-Tetrachloroethane	< 1.0	1100	1.0	µg/L	N/A	2016-03-28	
Tetrachloroethene	< 1.0	N/A	1.0	µg/L	N/A	2016-03-28	
Toluene	< 1.0	390	1.0	µg/L	N/A	2016-03-28	
1,1,1-Trichloroethane	< 1.0	N/A	1.0	µg/L	N/A	2016-03-28	

REPORTED TO	Morrison Hershfield Limited	**WORK ORDER**	6031702
PROJECT	Whistler Landfill - Spring/Fall	**REPORTED**	2016-04-06

Analyte	Result / *Recovery*	Standard / Guideline	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: MW2D (6031702-02) [Water] Sampled: 2016-03-23 00:00, Continued							
Volatile Organic Compounds (VOC), Continued							
1,1,2-Trichloroethane	< 1.0	N/A	1.0	µg/L	N/A	2016-03-28	
Trichloroethene	< 1.0	200	1.0	µg/L	N/A	2016-03-28	
Trichlorofluoromethane	< 1.0	N/A	1.0	µg/L	N/A	2016-03-28	
Vinyl chloride	< 2.0	N/A	2.0	µg/L	N/A	2016-03-28	
m,p-Xylene	< 1.0	N/A	1.0	µg/L	N/A	2016-03-28	
o-Xylene	< 1.0	N/A	1.0	µg/L	N/A	2016-03-28	
Xylenes (total)	< 2.0	N/A	2.0	µg/L	N/A	2016-03-28	
1,2-Dibromoethane	< 0.3	N/A	0.3	µg/L	N/A	2016-03-28	
1,2-Dichlorobenzene	< 0.5	7	0.5	µg/L	N/A	2016-03-28	
Surrogate: Toluene-d8	*103*		*70-130*	%	*N/A*	*2016-03-28*	
Surrogate: 4-Bromofluorobenzene	*94*		*70-130*	%	*N/A*	*2016-03-28*	
Surrogate: 1,4-Dichlorobenzene-d4	*94*		*70-130*	%	*N/A*	*2016-03-28*	
Sample ID: MW3 (6031702-03) [Water] Sampled: 2016-03-23 00:00							
Anions							
Bromide	**0.12**	N/A	0.10	mg/L	N/A	2016-03-30	
Chloride	**12.3**	1500	0.10	mg/L	N/A	2016-03-30	
Fluoride	**0.11**	2	0.01	mg/L	N/A	2016-03-30	
Nitrite as N	< 0.001	0.2	0.001	mg/L	N/A	2016-03-24	
Nitrate+Nitrite as N	**0.007**	400	0.005	mg/L	N/A	2016-04-01	
Sulfate	**33.8**	1000	1.0	mg/L	N/A	2016-03-30	
General Parameters							
pH	**6.08**	N/A	0.01	pH units	2016-03-29	2016-03-29	HT2
Conductivity (EC)	**237**	N/A	2	µS/cm	N/A	2016-03-30	
Ammonia as N, Total	**0.455**	N/A	0.005	mg/L	N/A	2016-03-31	
Nitrogen, Total Kjeldahl	**0.71**	N/A	0.05	mg/L	2016-03-30	2016-03-31	
Alkalinity, Total as CaCO3	**32**	N/A	1	mg/L	N/A	2016-03-31	
Alkalinity, Phenolphthalein as CaCO3	< 1	N/A	1	mg/L	N/A	2016-03-31	
Alkalinity, Bicarbonate as CaCO3	**32**	N/A	1	mg/L	N/A	2016-03-31	
Alkalinity, Carbonate as CaCO3	< 1	N/A	1	mg/L	N/A	2016-03-31	
Alkalinity, Hydroxide as CaCO3	< 1	N/A	1	mg/L	N/A	2016-03-31	
Chemical Oxygen Demand	< 5	N/A	5	mg/L	N/A	2016-04-04	
Solids, Total Suspended	**3**	N/A	2	mg/L	N/A	2016-03-30	
Phosphorus, Total as P	**0.092**	N/A	0.002	mg/L	2016-03-31	2016-04-01	
Calculated Parameters							
Hardness, Total (as CaCO3)	**51.5**	N/A	0.50	mg/L	N/A	N/A	
Nitrate as N	**0.007**	400	0.005	mg/L	N/A	N/A	
Nitrogen, Total	**0.714**	N/A	0.050	mg/L	N/A	N/A	
Dissolved Metals							
Aluminum, dissolved	**0.041**	N/A	0.005	mg/L	N/A	2016-03-29	
Antimony, dissolved	< 0.0001	0.2	0.0001	mg/L	N/A	2016-03-29	
Arsenic, dissolved	< 0.0005	0.05	0.0005	mg/L	N/A	2016-03-29	
Barium, dissolved	**0.076**	5	0.005	mg/L	N/A	2016-03-29	

REPORTED TO	Morrison Hershfield Limited	**WORK ORDER**	6031702
PROJECT	Whistler Landfill - Spring/Fall	**REPORTED**	2016-04-06

Analyte	Result / *Recovery*	Standard / Guideline	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: MW3 (6031702-03) [Water] Sampled: 2016-03-23 00:00, Continued							
Dissolved Metals, Continued							
Beryllium, dissolved	< 0.0001	0.053	0.0001	mg/L	N/A	2016-03-29	
Bismuth, dissolved	< 0.0001	N/A	0.0001	mg/L	N/A	2016-03-29	
Boron, dissolved	**0.009**	50	0.004	mg/L	N/A	2016-03-29	
Cadmium, dissolved	**0.00039**	0.0001	0.00001	mg/L	N/A	2016-03-29	
Calcium, dissolved	**15.2**	N/A	0.2	mg/L	N/A	2016-03-29	
Chromium, dissolved	< 0.0005	N/A	0.0005	mg/L	N/A	2016-03-29	
Cobalt, dissolved	**0.0144**	0.04	0.00005	mg/L	N/A	2016-03-29	
Copper, dissolved	**0.0072**	0.02	0.0002	mg/L	N/A	2016-03-29	
Iron, dissolved	**1.05**	N/A	0.010	mg/L	N/A	2016-03-29	
Lead, dissolved	< 0.0001	0.04	0.0001	mg/L	N/A	2016-03-29	
Lithium, dissolved	**0.0002**	N/A	0.0001	mg/L	N/A	2016-03-29	
Magnesium, dissolved	**3.27**	N/A	0.01	mg/L	N/A	2016-03-29	
Manganese, dissolved	**2.36**	N/A	0.0002	mg/L	N/A	2016-03-29	
Mercury, dissolved	< 0.00002	0.001	0.00002	mg/L	2016-03-29	2016-03-30	
Molybdenum, dissolved	**0.0008**	10	0.0001	mg/L	N/A	2016-03-29	
Nickel, dissolved	**0.0025**	0.25	0.0002	mg/L	N/A	2016-03-29	
Phosphorus, dissolved	< 0.02	N/A	0.02	mg/L	N/A	2016-03-29	
Potassium, dissolved	**2.89**	N/A	0.02	mg/L	N/A	2016-03-29	
Selenium, dissolved	< 0.0005	0.01	0.0005	mg/L	N/A	2016-03-29	
Silicon, dissolved	**7.7**	N/A	0.5	mg/L	N/A	2016-03-29	
Silver, dissolved	< 0.00005	0.0005	0.00005	mg/L	N/A	2016-03-29	
Sodium, dissolved	**12.8**	N/A	0.02	mg/L	N/A	2016-03-29	
Strontium, dissolved	**0.117**	N/A	0.001	mg/L	N/A	2016-03-29	
Sulfur, dissolved	**10**	N/A	1	mg/L	N/A	2016-03-29	
Tellurium, dissolved	< 0.0002	N/A	0.0002	mg/L	N/A	2016-03-29	
Thallium, dissolved	**0.00014**	0.003	0.00002	mg/L	N/A	2016-03-29	
Thorium, dissolved	< 0.0001	N/A	0.0001	mg/L	N/A	2016-03-29	
Tin, dissolved	< 0.0002	N/A	0.0002	mg/L	N/A	2016-03-29	
Titanium, dissolved	< 0.005	1	0.005	mg/L	N/A	2016-03-29	
Uranium, dissolved	< 0.00002	3	0.00002	mg/L	N/A	2016-03-29	
Vanadium, dissolved	< 0.001	N/A	0.001	mg/L	N/A	2016-03-29	
Zinc, dissolved	**0.007**	0.075	0.004	mg/L	N/A	2016-03-29	
Zirconium, dissolved	< 0.0001	N/A	0.0001	mg/L	N/A	2016-03-29	
BCMOE Aggregate Hydrocarbons							
VPHw	< 100	1500	100	µg/L	N/A	N/A	
EPHw10-19	< 250	5000	250	µg/L	2016-03-30	2016-04-02	
EPHw19-32	< 250	N/A	250	µg/L	2016-03-30	2016-04-02	
LEPHw	< 250	500	250	µg/L	N/A	N/A	
HEPHw	< 250	N/A	250	µg/L	N/A	N/A	
VHw (6-10)	< 100	15000	100	µg/L	N/A	2016-03-28	
Surrogate: 2-Methylnonane	*70*		*60-140*	%	*2016-03-30*	*2016-04-02*	
Polycyclic Aromatic Hydrocarbons (PAH)							
Acenaphthene	< 0.05	60	0.05	µg/L	2016-03-30	2016-04-02	
Acenaphthylene	< 0.20	N/A	0.20	µg/L	2016-03-30	2016-04-02	

REPORTED TO	Morrison Hershfield Limited	**WORK ORDER**	6031702
PROJECT	Whistler Landfill - Spring/Fall	**REPORTED**	2016-04-06

Analyte	Result / *Recovery*	Standard / Guideline	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: MW3 (6031702-03) [Water] Sampled: 2016-03-23 00:00, Continued							
Polycyclic Aromatic Hydrocarbons (PAH), Continued							
Acridine	< 0.10	0.5	0.10	µg/L	2016-03-30	2016-04-02	
Anthracene	< 0.01	1	0.01	µg/L	2016-03-30	2016-04-02	
Benz (a) anthracene	< 0.01	1	0.01	µg/L	2016-03-30	2016-04-02	
Benzo (a) pyrene	< 0.01	0.1	0.01	µg/L	2016-03-30	2016-04-02	
Benzo (b) fluoranthene	< 0.05	N/A	0.05	µg/L	2016-03-30	2016-04-02	
Benzo (g,h,i) perylene	< 0.05	N/A	0.05	µg/L	2016-03-30	2016-04-02	
Benzo (k) fluoranthene	< 0.05	N/A	0.05	µg/L	2016-03-30	2016-04-02	
Chrysene	< 0.05	1	0.05	µg/L	2016-03-30	2016-04-02	
Dibenz (a,h) anthracene	< 0.05	N/A	0.05	µg/L	2016-03-30	2016-04-02	
Fluoranthene	< 0.03	2	0.03	µg/L	2016-03-30	2016-04-02	
Fluorene	< 0.05	120	0.05	µg/L	2016-03-30	2016-04-02	
Indeno (1,2,3-cd) pyrene	< 0.05	N/A	0.05	µg/L	2016-03-30	2016-04-02	
Naphthalene	< 0.20	10	0.20	µg/L	2016-03-30	2016-04-02	
Phenanthrene	< 0.10	3	0.10	µg/L	2016-03-30	2016-04-02	
Pyrene	< 0.02	0.2	0.02	µg/L	2016-03-30	2016-04-02	
Quinoline	< 0.10	34	0.10	µg/L	2016-03-30	2016-04-02	
Surrogate: Acridine-d9	*103*		*60-140*	%	*2016-03-30*	*2016-04-02*	
Surrogate: Naphthalene-d8	*85*		*60-140*	%	*2016-03-30*	*2016-04-02*	
Surrogate: Perylene-d12	*132*		*60-140*	%	*2016-03-30*	*2016-04-02*	
Volatile Organic Compounds (VOC)							
Acetone	< 10.0	N/A	10.0	µg/L	N/A	2016-03-28	
Benzene	< 0.5	1000	0.5	µg/L	N/A	2016-03-28	
Bromodichloromethane	< 1.0	N/A	1.0	µg/L	N/A	2016-03-28	
Bromoform	< 1.0	N/A	1.0	µg/L	N/A	2016-03-28	
Bromomethane	< 2.0	N/A	2.0	µg/L	N/A	2016-03-28	
2-Butanone (MEK)	< 5.0	N/A	5.0	µg/L	N/A	2016-03-28	
Carbon tetrachloride	< 1.0	130	1.0	µg/L	N/A	2016-03-28	
Chlorobenzene	< 1.0	13	1.0	µg/L	N/A	2016-03-28	
Chloroethane	< 2.0	N/A	2.0	µg/L	N/A	2016-03-28	
Chloroform	< 1.0	20	1.0	µg/L	N/A	2016-03-28	
Chloromethane	< 2.0	N/A	2.0	µg/L	N/A	2016-03-28	
Dibromochloromethane	< 1.0	N/A	1.0	µg/L	N/A	2016-03-28	
Dibromomethane	< 1.0	N/A	1.0	µg/L	N/A	2016-03-28	
1,3-Dichlorobenzene	< 1.0	1500	1.0	µg/L	N/A	2016-03-28	
1,4-Dichlorobenzene	< 1.0	260	1.0	µg/L	N/A	2016-03-28	
1,1-Dichloroethane	< 1.0	N/A	1.0	µg/L	N/A	2016-03-28	
1,2-Dichloroethane	< 1.0	1000	1.0	µg/L	N/A	2016-03-28	
1,1-Dichloroethene	< 1.0	N/A	1.0	µg/L	N/A	2016-03-28	
cis-1,2-Dichloroethene	< 1.0	N/A	1.0	µg/L	N/A	2016-03-28	
trans-1,2-Dichloroethene	< 1.0	N/A	1.0	µg/L	N/A	2016-03-28	
1,2-Dichloropropane	< 1.0	N/A	1.0	µg/L	N/A	2016-03-28	
cis-1,3-Dichloropropene	< 1.0	N/A	1.0	µg/L	N/A	2016-03-28	
trans-1,3-Dichloropropene	< 1.0	N/A	1.0	µg/L	N/A	2016-03-28	
Ethylbenzene	< 1.0	2000	1.0	µg/L	N/A	2016-03-28	
Methyl tert-butyl ether	< 1.0	34000	1.0	µg/L	N/A	2016-03-28	

REPORTED TO	Morrison Hershfield Limited	**WORK ORDER**	6031702
PROJECT	Whistler Landfill - Spring/Fall	**REPORTED**	2016-04-06

Analyte	Result / *Recovery*	Standard / Guideline	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: MW3 (6031702-03) [Water] Sampled: 2016-03-23 00:00, Continued							
Volatile Organic Compounds (VOC), Continued							
Methylene chloride	< 3.0	980	3.0	µg/L	N/A	2016-03-28	
4-Methyl-2-Pentanone (MIBK)	< 10.0	N/A	10.0	µg/L	N/A	2016-03-28	
Styrene	< 1.0	720	1.0	µg/L	N/A	2016-03-28	
1,1,1,2-Tetrachloroethane	< 1.0	N/A	1.0	µg/L	N/A	2016-03-28	
1,1,2,2-Tetrachloroethane	< 1.0	1100	1.0	µg/L	N/A	2016-03-28	
Tetrachloroethene	< 1.0	N/A	1.0	µg/L	N/A	2016-03-28	
Toluene	< 1.0	390	1.0	µg/L	N/A	2016-03-28	
1,1,1-Trichloroethane	< 1.0	N/A	1.0	µg/L	N/A	2016-03-28	
1,1,2-Trichloroethane	< 1.0	N/A	1.0	µg/L	N/A	2016-03-28	
Trichloroethene	< 1.0	200	1.0	µg/L	N/A	2016-03-28	
Trichlorofluoromethane	< 1.0	N/A	1.0	µg/L	N/A	2016-03-28	
Vinyl chloride	< 2.0	N/A	2.0	µg/L	N/A	2016-03-28	
m,p-Xylene	< 1.0	N/A	1.0	µg/L	N/A	2016-03-28	
o-Xylene	< 1.0	N/A	1.0	µg/L	N/A	2016-03-28	
Xylenes (total)	< 2.0	N/A	2.0	µg/L	N/A	2016-03-28	
1,2-Dibromoethane	< 0.3	N/A	0.3	µg/L	N/A	2016-03-28	
1,2-Dichlorobenzene	< 0.5	7	0.5	µg/L	N/A	2016-03-28	
Surrogate: Toluene-d8	*102*		*70-130*	%	*N/A*	*2016-03-28*	
Surrogate: 4-Bromofluorobenzene	*91*		*70-130*	%	*N/A*	*2016-03-28*	
Surrogate: 1,4-Dichlorobenzene-d4	*89*		*70-130*	%	*N/A*	*2016-03-28*	
Sample ID: MW4 (6031702-04) [Water] Sampled: 2016-03-23 00:00							
Anions							
Bromide	< 0.10	N/A	0.10	mg/L	N/A	2016-03-30	
Chloride	**19.2**	1500	0.10	mg/L	N/A	2016-03-30	
Fluoride	**0.20**	2	0.01	mg/L	N/A	2016-03-30	
Nitrite as N	**0.011**	0.2	0.001	mg/L	N/A	2016-03-24	
Nitrate+Nitrite as N	**0.014**	400	0.005	mg/L	N/A	2016-04-01	
Sulfate	**60.0**	1000	1.0	mg/L	N/A	2016-03-30	
General Parameters							
pH	**6.23**	N/A	0.01	pH units	2016-03-29	2016-03-29	HT2
Conductivity (EC)	**558**	N/A	2	µS/cm	N/A	2016-03-30	
Ammonia as N, Total	**2.19**	N/A	0.005	mg/L	N/A	2016-03-31	
Nitrogen, Total Kjeldahl	**5.54**	N/A	0.05	mg/L	2016-03-30	2016-03-31	
Alkalinity, Total as CaCO3	**136**	N/A	1	mg/L	N/A	2016-03-31	
Alkalinity, Phenolphthalein as CaCO3	< 1	N/A	1	mg/L	N/A	2016-03-31	
Alkalinity, Bicarbonate as CaCO3	**136**	N/A	1	mg/L	N/A	2016-03-31	
Alkalinity, Carbonate as CaCO3	< 1	N/A	1	mg/L	N/A	2016-03-31	
Alkalinity, Hydroxide as CaCO3	< 1	N/A	1	mg/L	N/A	2016-03-31	
Chemical Oxygen Demand	**17**	N/A	5	mg/L	N/A	2016-04-04	
Solids, Total Suspended	**3850**	N/A	2	mg/L	N/A	2016-03-30	
Phosphorus, Total as P	**0.995**	N/A	0.002	mg/L	2016-03-31	2016-04-04	
Calculated Parameters							

REPORTED TO	Morrison Hershfield Limited	**WORK ORDER**	6031702
PROJECT	Whistler Landfill - Spring/Fall	**REPORTED**	2016-04-06

Analyte	Result / *Recovery*	Standard / Guideline	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: MW4 (6031702-04) [Water] Sampled: 2016-03-23 00:00, Continued							
Calculated Parameters, Continued							
Hardness, Total (as CaCO3)	**187**	N/A	0.50	mg/L	N/A	N/A	
Nitrate as N	< 0.005	400	0.005	mg/L	N/A	N/A	
Nitrogen, Total	**5.55**	N/A	0.500	mg/L	N/A	N/A	
Dissolved Metals							
Aluminum, dissolved	**0.005**	N/A	0.005	mg/L	N/A	2016-03-29	
Antimony, dissolved	< 0.0001	0.2	0.0001	mg/L	N/A	2016-03-29	
Arsenic, dissolved	**0.0056**	0.05	0.0005	mg/L	N/A	2016-03-29	
Barium, dissolved	**0.255**	5	0.005	mg/L	N/A	2016-03-29	
Beryllium, dissolved	< 0.0001	0.053	0.0001	mg/L	N/A	2016-03-29	
Bismuth, dissolved	< 0.0001	N/A	0.0001	mg/L	N/A	2016-03-29	
Boron, dissolved	**0.092**	50	0.004	mg/L	N/A	2016-03-29	
Cadmium, dissolved	**0.00191**	0.0001	0.00001	mg/L	N/A	2016-03-29	
Calcium, dissolved	**60.1**	N/A	0.2	mg/L	N/A	2016-03-29	
Chromium, dissolved	< 0.0005	N/A	0.0005	mg/L	N/A	2016-03-29	
Cobalt, dissolved	**0.0428**	0.04	0.00005	mg/L	N/A	2016-03-29	
Copper, dissolved	**0.0030**	0.02	0.0002	mg/L	N/A	2016-03-29	
Iron, dissolved	**39.3**	N/A	0.010	mg/L	N/A	2016-03-29	
Lead, dissolved	< 0.0001	0.04	0.0001	mg/L	N/A	2016-03-29	
Lithium, dissolved	**0.0002**	N/A	0.0001	mg/L	N/A	2016-03-29	
Magnesium, dissolved	**8.92**	N/A	0.01	mg/L	N/A	2016-03-29	
Manganese, dissolved	**4.11**	N/A	0.0002	mg/L	N/A	2016-03-29	
Mercury, dissolved	< 0.00002	0.001	0.00002	mg/L	2016-03-29	2016-03-30	
Molybdenum, dissolved	**0.0089**	10	0.0001	mg/L	N/A	2016-03-29	
Nickel, dissolved	**0.0074**	0.25	0.0002	mg/L	N/A	2016-03-29	
Phosphorus, dissolved	< 0.02	N/A	0.02	mg/L	N/A	2016-03-29	
Potassium, dissolved	**7.18**	N/A	0.02	mg/L	N/A	2016-03-29	
Selenium, dissolved	< 0.0005	0.01	0.0005	mg/L	N/A	2016-03-29	
Silicon, dissolved	**12.9**	N/A	0.5	mg/L	N/A	2016-03-29	
Silver, dissolved	< 0.00005	0.0005	0.00005	mg/L	N/A	2016-03-29	
Sodium, dissolved	**21.6**	N/A	0.02	mg/L	N/A	2016-03-29	
Strontium, dissolved	**0.371**	N/A	0.001	mg/L	N/A	2016-03-29	
Sulfur, dissolved	**20**	N/A	1	mg/L	N/A	2016-03-29	
Tellurium, dissolved	< 0.0002	N/A	0.0002	mg/L	N/A	2016-03-29	
Thallium, dissolved	**0.00006**	0.003	0.00002	mg/L	N/A	2016-03-29	
Thorium, dissolved	< 0.0001	N/A	0.0001	mg/L	N/A	2016-03-29	
Tin, dissolved	< 0.0002	N/A	0.0002	mg/L	N/A	2016-03-29	
Titanium, dissolved	< 0.005	1	0.005	mg/L	N/A	2016-03-29	
Uranium, dissolved	**0.00026**	3	0.00002	mg/L	N/A	2016-03-29	
Vanadium, dissolved	< 0.001	N/A	0.001	mg/L	N/A	2016-03-29	
Zinc, dissolved	**0.014**	0.075	0.004	mg/L	N/A	2016-03-29	
Zirconium, dissolved	< 0.0001	N/A	0.0001	mg/L	N/A	2016-03-29	
BCMOE Aggregate Hydrocarbons							
VPHw	< 100	1500	100	µg/L	N/A	N/A	
EPHw10-19	< 250	5000	250	µg/L	2016-03-30	2016-04-02	

REPORTED TO	Morrison Hershfield Limited	**WORK ORDER**	6031702
PROJECT	Whistler Landfill - Spring/Fall	**REPORTED**	2016-04-06

Analyte	Result / *Recovery*	Standard / Guideline	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: MW4 (6031702-04) [Water] Sampled: 2016-03-23 00:00, Continued							
BCMOE Aggregate Hydrocarbons, Continued							
EPHw19-32	< 250	N/A	250	µg/L	2016-03-30	2016-04-02	
LEPHw	< 250	500	250	µg/L	N/A	N/A	
HEPHw	< 250	N/A	250	µg/L	N/A	N/A	
VHw (6-10)	< 100	15000	100	µg/L	N/A	2016-03-28	
Surrogate: 2-Methylnonane	*75*		*60-140*	%	*2016-03-30*	*2016-04-02*	
Polycyclic Aromatic Hydrocarbons (PAH)							
Acenaphthene	< 0.05	60	0.05	µg/L	2016-03-30	2016-04-02	
Acenaphthylene	< 0.20	N/A	0.20	µg/L	2016-03-30	2016-04-02	
Acridine	< 0.10	0.5	0.10	µg/L	2016-03-30	2016-04-02	
Anthracene	< 0.01	1	0.01	µg/L	2016-03-30	2016-04-02	
Benz (a) anthracene	< 0.01	1	0.01	µg/L	2016-03-30	2016-04-02	
Benzo (a) pyrene	< 0.01	0.1	0.01	µg/L	2016-03-30	2016-04-02	
Benzo (b) fluoranthene	< 0.05	N/A	0.05	µg/L	2016-03-30	2016-04-02	
Benzo (g,h,i) perylene	< 0.05	N/A	0.05	µg/L	2016-03-30	2016-04-02	
Benzo (k) fluoranthene	< 0.05	N/A	0.05	µg/L	2016-03-30	2016-04-02	
Chrysene	< 0.05	1	0.05	µg/L	2016-03-30	2016-04-02	
Dibenz (a,h) anthracene	< 0.05	N/A	0.05	µg/L	2016-03-30	2016-04-02	
Fluoranthene	< 0.03	2	0.03	µg/L	2016-03-30	2016-04-02	
Fluorene	< 0.05	120	0.05	µg/L	2016-03-30	2016-04-02	
Indeno (1,2,3-cd) pyrene	< 0.05	N/A	0.05	µg/L	2016-03-30	2016-04-02	
Naphthalene	< 0.20	10	0.20	µg/L	2016-03-30	2016-04-02	
Phenanthrene	< 0.10	3	0.10	µg/L	2016-03-30	2016-04-02	
Pyrene	< 0.02	0.2	0.02	µg/L	2016-03-30	2016-04-02	
Quinoline	< 0.10	34	0.10	µg/L	2016-03-30	2016-04-02	
Surrogate: Acridine-d9	*94*		*60-140*	%	*2016-03-30*	*2016-04-02*	
Surrogate: Naphthalene-d8	*79*		*60-140*	%	*2016-03-30*	*2016-04-02*	
Surrogate: Perylene-d12	*123*		*60-140*	%	*2016-03-30*	*2016-04-02*	
Volatile Organic Compounds (VOC)							
Acetone	< 10.0	N/A	10.0	µg/L	N/A	2016-03-28	
Benzene	< 0.5	1000	0.5	µg/L	N/A	2016-03-28	
Bromodichloromethane	< 1.0	N/A	1.0	µg/L	N/A	2016-03-28	
Bromoform	< 1.0	N/A	1.0	µg/L	N/A	2016-03-28	
Bromomethane	< 2.0	N/A	2.0	µg/L	N/A	2016-03-28	
2-Butanone (MEK)	< 5.0	N/A	5.0	µg/L	N/A	2016-03-28	
Carbon tetrachloride	< 1.0	130	1.0	µg/L	N/A	2016-03-28	
Chlorobenzene	< 1.0	13	1.0	µg/L	N/A	2016-03-28	
Chloroethane	< 2.0	N/A	2.0	µg/L	N/A	2016-03-28	
Chloroform	< 1.0	20	1.0	µg/L	N/A	2016-03-28	
Chloromethane	< 2.0	N/A	2.0	µg/L	N/A	2016-03-28	
Dibromochloromethane	< 1.0	N/A	1.0	µg/L	N/A	2016-03-28	
Dibromomethane	< 1.0	N/A	1.0	µg/L	N/A	2016-03-28	
1,3-Dichlorobenzene	< 1.0	1500	1.0	µg/L	N/A	2016-03-28	
1,4-Dichlorobenzene	< 1.0	260	1.0	µg/L	N/A	2016-03-28	
1,1-Dichloroethane	< 1.0	N/A	1.0	µg/L	N/A	2016-03-28	

REPORTED TO	Morrison Hershfield Limited	**WORK ORDER**	6031702
PROJECT	Whistler Landfill - Spring/Fall	**REPORTED**	2016-04-06

Analyte	Result / *Recovery*	Standard / Guideline	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: MW4 (6031702-04) [Water] Sampled: 2016-03-23 00:00, Continued							
Volatile Organic Compounds (VOC), Continued							
1,2-Dichloroethane	< 1.0	1000	1.0	µg/L	N/A	2016-03-28	
1,1-Dichloroethene	< 1.0	N/A	1.0	µg/L	N/A	2016-03-28	
cis-1,2-Dichloroethene	< 1.0	N/A	1.0	µg/L	N/A	2016-03-28	
trans-1,2-Dichloroethene	< 1.0	N/A	1.0	µg/L	N/A	2016-03-28	
1,2-Dichloropropane	< 1.0	N/A	1.0	µg/L	N/A	2016-03-28	
cis-1,3-Dichloropropene	< 1.0	N/A	1.0	µg/L	N/A	2016-03-28	
trans-1,3-Dichloropropene	< 1.0	N/A	1.0	µg/L	N/A	2016-03-28	
Ethylbenzene	< 1.0	2000	1.0	µg/L	N/A	2016-03-28	
Methyl tert-butyl ether	< 1.0	34000	1.0	µg/L	N/A	2016-03-28	
Methylene chloride	< 3.0	980	3.0	µg/L	N/A	2016-03-28	
4-Methyl-2-Pentanone (MIBK)	< 10.0	N/A	10.0	µg/L	N/A	2016-03-28	
Styrene	< 1.0	720	1.0	µg/L	N/A	2016-03-28	
1,1,1,2-Tetrachloroethane	< 1.0	N/A	1.0	µg/L	N/A	2016-03-28	
1,1,2,2-Tetrachloroethane	< 1.0	1100	1.0	µg/L	N/A	2016-03-28	
Tetrachloroethene	< 1.0	N/A	1.0	µg/L	N/A	2016-03-28	
Toluene	< 1.0	390	1.0	µg/L	N/A	2016-03-28	
1,1,1-Trichloroethane	< 1.0	N/A	1.0	µg/L	N/A	2016-03-28	
1,1,2-Trichloroethane	< 1.0	N/A	1.0	µg/L	N/A	2016-03-28	
Trichloroethene	< 1.0	200	1.0	µg/L	N/A	2016-03-28	
Trichlorofluoromethane	< 1.0	N/A	1.0	µg/L	N/A	2016-03-28	
Vinyl chloride	< 2.0	N/A	2.0	µg/L	N/A	2016-03-28	
m,p-Xylene	< 1.0	N/A	1.0	µg/L	N/A	2016-03-28	
o-Xylene	< 1.0	N/A	1.0	µg/L	N/A	2016-03-28	
Xylenes (total)	< 2.0	N/A	2.0	µg/L	N/A	2016-03-28	
1,2-Dibromoethane	< 0.3	N/A	0.3	µg/L	N/A	2016-03-28	
1,2-Dichlorobenzene	< 0.5	7	0.5	µg/L	N/A	2016-03-28	
Surrogate: Toluene-d8	*100*		*70-130*	%	*N/A*	*2016-03-28*	
Surrogate: 4-Bromofluorobenzene	*88*		*70-130*	%	*N/A*	*2016-03-28*	
Surrogate: 1,4-Dichlorobenzene-d4	*87*		*70-130*	%	*N/A*	*2016-03-28*	
Sample ID: MW6 (6031702-05) [Water] Sampled: 2016-03-23 00:00							
Anions							
Bromide	< 0.10	N/A	0.10	mg/L	N/A	2016-03-30	
Chloride	**165**	1500	0.10	mg/L	N/A	2016-03-30	
Fluoride	**0.18**	2	0.01	mg/L	N/A	2016-03-30	
Nitrite as N	< 0.001	0.2	0.001	mg/L	N/A	2016-03-24	
Nitrate+Nitrite as N	**0.101**	400	0.005	mg/L	N/A	2016-04-01	
Sulfate	**109**	1000	1.0	mg/L	N/A	2016-03-30	
General Parameters							
pH	**5.91**	N/A	0.01	pH units	2016-03-29	2016-03-29	HT2
Conductivity (EC)	**894**	N/A	2	µS/cm	N/A	2016-03-30	
Ammonia as N, Total	**0.051**	N/A	0.005	mg/L	N/A	2016-03-31	
Nitrogen, Total Kjeldahl	**1.21**	N/A	0.05	mg/L	2016-03-30	2016-03-31	
Alkalinity, Total as CaCO3	**9**	N/A	1	mg/L	N/A	2016-03-31	

REPORTED TO	Morrison Hershfield Limited	**WORK ORDER**	6031702
PROJECT	Whistler Landfill - Spring/Fall	**REPORTED**	2016-04-06

Analyte	Result / *Recovery*	Standard / Guideline	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: MW6 (6031702-05) [Water] Sampled: 2016-03-23 00:00, Continued							
General Parameters, Continued							
Alkalinity, Phenolphthalein as CaCO3	< 1	N/A	1	mg/L	N/A	2016-03-31	
Alkalinity, Bicarbonate as CaCO3	**9**	N/A	1	mg/L	N/A	2016-03-31	
Alkalinity, Carbonate as CaCO3	< 1	N/A	1	mg/L	N/A	2016-03-31	
Alkalinity, Hydroxide as CaCO3	< 1	N/A	1	mg/L	N/A	2016-03-31	
Chemical Oxygen Demand	**19**	N/A	5	mg/L	N/A	2016-04-04	
Solids, Total Suspended	**1360**	N/A	2	mg/L	N/A	2016-03-30	
Phosphorus, Total as P	**2.46**	N/A	0.002	mg/L	2016-03-31	2016-04-04	
Calculated Parameters							
Hardness, Total (as CaCO3)	**166**	N/A	0.50	mg/L	N/A	N/A	
Nitrate as N	**0.101**	400	0.005	mg/L	N/A	N/A	
Nitrogen, Total	**1.31**	N/A	0.050	mg/L	N/A	N/A	
Dissolved Metals							
Aluminum, dissolved	**0.104**	N/A	0.005	mg/L	N/A	2016-03-29	
Antimony, dissolved	< 0.0001	0.2	0.0001	mg/L	N/A	2016-03-29	
Arsenic, dissolved	< 0.0005	0.05	0.0005	mg/L	N/A	2016-03-29	
Barium, dissolved	**0.064**	5	0.005	mg/L	N/A	2016-03-29	
Beryllium, dissolved	< 0.0001	0.053	0.0001	mg/L	N/A	2016-03-29	
Bismuth, dissolved	< 0.0001	N/A	0.0001	mg/L	N/A	2016-03-29	
Boron, dissolved	**0.009**	50	0.004	mg/L	N/A	2016-03-29	
Cadmium, dissolved	**0.00035**	0.0001	0.00001	mg/L	N/A	2016-03-29	
Calcium, dissolved	**54.6**	N/A	0.2	mg/L	N/A	2016-03-29	
Chromium, dissolved	< 0.0005	N/A	0.0005	mg/L	N/A	2016-03-29	
Cobalt, dissolved	**0.00095**	0.04	0.00005	mg/L	N/A	2016-03-29	
Copper, dissolved	**0.0034**	0.02	0.0002	mg/L	N/A	2016-03-29	
Iron, dissolved	**0.021**	N/A	0.010	mg/L	N/A	2016-03-29	
Lead, dissolved	< 0.0001	0.04	0.0001	mg/L	N/A	2016-03-29	
Lithium, dissolved	**0.0001**	N/A	0.0001	mg/L	N/A	2016-03-29	
Magnesium, dissolved	**7.13**	N/A	0.01	mg/L	N/A	2016-03-29	
Manganese, dissolved	**0.496**	N/A	0.0002	mg/L	N/A	2016-03-29	
Mercury, dissolved	< 0.00002	0.001	0.00002	mg/L	2016-03-29	2016-03-30	
Molybdenum, dissolved	**0.0001**	10	0.0001	mg/L	N/A	2016-03-29	
Nickel, dissolved	**0.0031**	0.25	0.0002	mg/L	N/A	2016-03-29	
Phosphorus, dissolved	< 0.02	N/A	0.02	mg/L	N/A	2016-03-29	
Potassium, dissolved	**4.46**	N/A	0.02	mg/L	N/A	2016-03-29	
Selenium, dissolved	< 0.0005	0.01	0.0005	mg/L	N/A	2016-03-29	
Silicon, dissolved	**8.9**	N/A	0.5	mg/L	N/A	2016-03-29	
Silver, dissolved	< 0.00005	0.0005	0.00005	mg/L	N/A	2016-03-29	
Sodium, dissolved	**96.7**	N/A	0.02	mg/L	N/A	2016-03-29	
Strontium, dissolved	**0.615**	N/A	0.001	mg/L	N/A	2016-03-29	
Sulfur, dissolved	**38**	N/A	1	mg/L	N/A	2016-03-29	
Tellurium, dissolved	< 0.0002	N/A	0.0002	mg/L	N/A	2016-03-29	
Thallium, dissolved	**0.00005**	0.003	0.00002	mg/L	N/A	2016-03-29	
Thorium, dissolved	< 0.0001	N/A	0.0001	mg/L	N/A	2016-03-29	
Tin, dissolved	< 0.0002	N/A	0.0002	mg/L	N/A	2016-03-29	

REPORTED TO	Morrison Hershfield Limited	**WORK ORDER**	6031702
PROJECT	Whistler Landfill - Spring/Fall	**REPORTED**	2016-04-06

Analyte	Result / *Recovery*	Standard / Guideline	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: MW6 (6031702-05) [Water] Sampled: 2016-03-23 00:00, Continued							
Dissolved Metals, Continued							
Titanium, dissolved	< 0.005	1	0.005	mg/L	N/A	2016-03-29	
Uranium, dissolved	**0.00003**	3	0.00002	mg/L	N/A	2016-03-29	
Vanadium, dissolved	< 0.001	N/A	0.001	mg/L	N/A	2016-03-29	
Zinc, dissolved	**0.007**	0.075	0.004	mg/L	N/A	2016-03-29	
Zirconium, dissolved	< 0.0001	N/A	0.0001	mg/L	N/A	2016-03-29	
BCMOE Aggregate Hydrocarbons							
VPHw	< 100	1500	100	µg/L	N/A	N/A	
EPHw10-19	< 250	5000	250	µg/L	2016-03-30	2016-04-02	
EPHw19-32	**663**	N/A	250	µg/L	2016-03-30	2016-04-02	
LEPHw	< 250	500	250	µg/L	N/A	N/A	
HEPHw	**663**	N/A	250	µg/L	N/A	N/A	
VHw (6-10)	< 100	15000	100	µg/L	N/A	2016-03-28	
Surrogate: 2-Methylnonane	*75*		*60-140*	%	*2016-03-30*	*2016-04-02*	
Polycyclic Aromatic Hydrocarbons (PAH)							
Acenaphthene	< 0.05	60	0.05	µg/L	2016-03-30	2016-04-02	
Acenaphthylene	< 0.20	N/A	0.20	µg/L	2016-03-30	2016-04-02	
Acridine	< 0.10	0.5	0.10	µg/L	2016-03-30	2016-04-02	
Anthracene	< 0.01	1	0.01	µg/L	2016-03-30	2016-04-02	
Benz (a) anthracene	< 0.01	1	0.01	µg/L	2016-03-30	2016-04-02	
Benzo (a) pyrene	< 0.01	0.1	0.01	µg/L	2016-03-30	2016-04-02	
Benzo (b) fluoranthene	< 0.05	N/A	0.05	µg/L	2016-03-30	2016-04-02	
Benzo (g,h,i) perylene	< 0.05	N/A	0.05	µg/L	2016-03-30	2016-04-02	
Benzo (k) fluoranthene	< 0.05	N/A	0.05	µg/L	2016-03-30	2016-04-02	
Chrysene	< 0.05	1	0.05	µg/L	2016-03-30	2016-04-02	
Dibenz (a,h) anthracene	< 0.05	N/A	0.05	µg/L	2016-03-30	2016-04-02	
Fluoranthene	< 0.03	2	0.03	µg/L	2016-03-30	2016-04-02	
Fluorene	< 0.05	120	0.05	µg/L	2016-03-30	2016-04-02	
Indeno (1,2,3-cd) pyrene	< 0.05	N/A	0.05	µg/L	2016-03-30	2016-04-02	
Naphthalene	< 0.20	10	0.20	µg/L	2016-03-30	2016-04-02	
Phenanthrene	< 0.10	3	0.10	µg/L	2016-03-30	2016-04-02	
Pyrene	< 0.02	0.2	0.02	µg/L	2016-03-30	2016-04-02	
Quinoline	< 0.10	34	0.10	µg/L	2016-03-30	2016-04-02	
Surrogate: Acridine-d9	*103*		*60-140*	%	*2016-03-30*	*2016-04-02*	
Surrogate: Naphthalene-d8	*73*		*60-140*	%	*2016-03-30*	*2016-04-02*	
Surrogate: Perylene-d12	*134*		*60-140*	%	*2016-03-30*	*2016-04-02*	
Volatile Organic Compounds (VOC)							
Acetone	< 10.0	N/A	10.0	µg/L	N/A	2016-03-28	
Benzene	< 0.5	1000	0.5	µg/L	N/A	2016-03-28	
Bromodichloromethane	< 1.0	N/A	1.0	µg/L	N/A	2016-03-28	
Bromoform	< 1.0	N/A	1.0	µg/L	N/A	2016-03-28	
Bromomethane	< 2.0	N/A	2.0	µg/L	N/A	2016-03-28	
2-Butanone (MEK)	< 5.0	N/A	5.0	µg/L	N/A	2016-03-28	
Carbon tetrachloride	< 1.0	130	1.0	µg/L	N/A	2016-03-28	
Chlorobenzene	< 1.0	13	1.0	µg/L	N/A	2016-03-28	

REPORTED TO	Morrison Hershfield Limited	**WORK ORDER**	6031702
PROJECT	Whistler Landfill - Spring/Fall	**REPORTED**	2016-04-06

Analyte	Result / *Recovery*	Standard / Guideline	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: MW6 (6031702-05) [Water] Sampled: 2016-03-23 00:00, Continued							
Volatile Organic Compounds (VOC), Continued							
Chloroethane	< 2.0	N/A	2.0	µg/L	N/A	2016-03-28	
Chloroform	< 1.0	20	1.0	µg/L	N/A	2016-03-28	
Chloromethane	< 2.0	N/A	2.0	µg/L	N/A	2016-03-28	
Dibromochloromethane	< 1.0	N/A	1.0	µg/L	N/A	2016-03-28	
Dibromomethane	< 1.0	N/A	1.0	µg/L	N/A	2016-03-28	
1,3-Dichlorobenzene	< 1.0	1500	1.0	µg/L	N/A	2016-03-28	
1,4-Dichlorobenzene	< 1.0	260	1.0	µg/L	N/A	2016-03-28	
1,1-Dichloroethane	< 1.0	N/A	1.0	µg/L	N/A	2016-03-28	
1,2-Dichloroethane	< 1.0	1000	1.0	µg/L	N/A	2016-03-28	
1,1-Dichloroethene	< 1.0	N/A	1.0	µg/L	N/A	2016-03-28	
cis-1,2-Dichloroethene	< 1.0	N/A	1.0	µg/L	N/A	2016-03-28	
trans-1,2-Dichloroethene	< 1.0	N/A	1.0	µg/L	N/A	2016-03-28	
1,2-Dichloropropane	< 1.0	N/A	1.0	µg/L	N/A	2016-03-28	
cis-1,3-Dichloropropene	< 1.0	N/A	1.0	µg/L	N/A	2016-03-28	
trans-1,3-Dichloropropene	< 1.0	N/A	1.0	µg/L	N/A	2016-03-28	
Ethylbenzene	< 1.0	2000	1.0	µg/L	N/A	2016-03-28	
Methyl tert-butyl ether	< 1.0	34000	1.0	µg/L	N/A	2016-03-28	
Methylene chloride	< 3.0	980	3.0	µg/L	N/A	2016-03-28	
4-Methyl-2-Pentanone (MIBK)	< 10.0	N/A	10.0	µg/L	N/A	2016-03-28	
Styrene	< 1.0	720	1.0	µg/L	N/A	2016-03-28	
1,1,1,2-Tetrachloroethane	< 1.0	N/A	1.0	µg/L	N/A	2016-03-28	
1,1,2,2-Tetrachloroethane	< 1.0	1100	1.0	µg/L	N/A	2016-03-28	
Tetrachloroethene	< 1.0	N/A	1.0	µg/L	N/A	2016-03-28	
Toluene	< 1.0	390	1.0	µg/L	N/A	2016-03-28	
1,1,1-Trichloroethane	< 1.0	N/A	1.0	µg/L	N/A	2016-03-28	
1,1,2-Trichloroethane	< 1.0	N/A	1.0	µg/L	N/A	2016-03-28	
Trichloroethene	< 1.0	200	1.0	µg/L	N/A	2016-03-28	
Trichlorofluoromethane	< 1.0	N/A	1.0	µg/L	N/A	2016-03-28	
Vinyl chloride	< 2.0	N/A	2.0	µg/L	N/A	2016-03-28	
m,p-Xylene	< 1.0	N/A	1.0	µg/L	N/A	2016-03-28	
o-Xylene	< 1.0	N/A	1.0	µg/L	N/A	2016-03-28	
Xylenes (total)	< 2.0	N/A	2.0	µg/L	N/A	2016-03-28	
1,2-Dibromoethane	< 0.3	N/A	0.3	µg/L	N/A	2016-03-28	
1,2-Dichlorobenzene	< 0.5	7	0.5	µg/L	N/A	2016-03-28	
Surrogate: Toluene-d8	*101*		*70-130*	%	*N/A*	*2016-03-28*	
Surrogate: 4-Bromofluorobenzene	*89*		*70-130*	%	*N/A*	*2016-03-28*	
Surrogate: 1,4-Dichlorobenzene-d4	*87*		*70-130*	%	*N/A*	*2016-03-28*	
Sample ID: Leachate (6031702-06) [Water] Sampled: 2016-03-23 00:00							F1
Anions							
Bromide	**0.18**	N/A	0.10	mg/L	N/A	2016-03-30	
Chloride	**29.1**	1500	0.10	mg/L	N/A	2016-03-30	
Fluoride	**0.14**	2	0.01	mg/L	N/A	2016-03-30	
Nitrite as N	**0.041**	0.2	0.001	mg/L	N/A	2016-03-24	

REPORTED TO	Morrison Hershfield Limited	**WORK ORDER**	6031702
PROJECT	Whistler Landfill - Spring/Fall	**REPORTED**	2016-04-06

Analyte	Result / *Recovery*	Standard / Guideline	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: Leachate (6031702-06) [Water] Sampled: 2016-03-23 00:00, Continued							F1
Anions, Continued							
Nitrate+Nitrite as N	**9.27**	400	0.005	mg/L	N/A	2016-04-01	
Sulfate	**43.9**	1000	1.0	mg/L	N/A	2016-03-30	
General Parameters							
pH	**6.72**	N/A	0.01	pH units	2016-03-29	2016-03-29	HT2
Conductivity (EC)	**856**	N/A	2	µS/cm	N/A	2016-03-30	
Ammonia as N, Total	**12.2**	N/A	0.005	mg/L	N/A	2016-03-31	
Nitrogen, Total Kjeldahl	**12.3**	N/A	0.05	mg/L	2016-03-30	2016-03-31	
Alkalinity, Total as CaCO3	**214**	N/A	1	mg/L	N/A	2016-03-31	
Alkalinity, Phenolphthalein as CaCO3	< 1	N/A	1	mg/L	N/A	2016-03-31	
Alkalinity, Bicarbonate as CaCO3	**214**	N/A	1	mg/L	N/A	2016-03-31	
Alkalinity, Carbonate as CaCO3	< 1	N/A	1	mg/L	N/A	2016-03-31	
Alkalinity, Hydroxide as CaCO3	< 1	N/A	1	mg/L	N/A	2016-03-31	
Chemical Oxygen Demand	**38**	N/A	5	mg/L	N/A	2016-04-04	
Solids, Total Suspended	**26**	N/A	2	mg/L	N/A	2016-03-30	
Phosphorus, Total as P	**0.195**	N/A	0.002	mg/L	2016-03-31	2016-04-01	
Calculated Parameters							
Hardness, Total (as CaCO3)	**176**	N/A	0.50	mg/L	N/A	N/A	
Nitrate as N	**9.23**	400	0.125	mg/L	N/A	N/A	
Nitrogen, Total	**21.5**	N/A	0.500	mg/L	N/A	N/A	
Dissolved Metals							
Mercury, dissolved	< 0.00002	0.001	0.0002	mg/L	N/A	2016-04-01	
Aluminum, dissolved	**0.016**	N/A	0.005	mg/L	N/A	2016-04-01	
Antimony, dissolved	**0.0005**	0.2	0.0001	mg/L	N/A	2016-04-01	
Arsenic, dissolved	**0.0005**	0.05	0.0005	mg/L	N/A	2016-04-01	
Barium, dissolved	**0.046**	5	0.005	mg/L	N/A	2016-04-01	
Beryllium, dissolved	< 0.0001	0.053	0.0001	mg/L	N/A	2016-04-01	
Bismuth, dissolved	< 0.0001	N/A	0.0001	mg/L	N/A	2016-04-01	
Boron, dissolved	**0.284**	50	0.004	mg/L	N/A	2016-04-01	
Cadmium, dissolved	**0.00010**	0.0001	0.00001	mg/L	N/A	2016-04-01	
Calcium, dissolved	**58.7**	N/A	0.2	mg/L	N/A	2016-04-01	
Chromium, dissolved	**0.0006**	N/A	0.0005	mg/L	N/A	2016-04-01	
Cobalt, dissolved	**0.00098**	0.04	0.00005	mg/L	N/A	2016-04-01	
Copper, dissolved	**0.0208**	0.02	0.0002	mg/L	N/A	2016-04-01	
Iron, dissolved	**2.42**	N/A	0.010	mg/L	N/A	2016-04-01	
Lead, dissolved	**0.0001**	0.04	0.0001	mg/L	N/A	2016-04-01	
Lithium, dissolved	**0.0006**	N/A	0.0001	mg/L	N/A	2016-04-01	
Magnesium, dissolved	**7.10**	N/A	0.01	mg/L	N/A	2016-04-01	
Manganese, dissolved	**0.269**	N/A	0.0002	mg/L	N/A	2016-04-01	
Molybdenum, dissolved	**0.0006**	10	0.0001	mg/L	N/A	2016-04-01	
Nickel, dissolved	**0.0031**	0.25	0.0002	mg/L	N/A	2016-04-01	
Phosphorus, dissolved	**0.04**	N/A	0.02	mg/L	N/A	2016-04-01	
Potassium, dissolved	**13.0**	N/A	0.02	mg/L	N/A	2016-04-01	
Selenium, dissolved	< 0.0005	0.01	0.0005	mg/L	N/A	2016-04-01	
Silicon, dissolved	**6.7**	N/A	0.5	mg/L	N/A	2016-04-01	

REPORTED TO Morrison Hershfield Limited
PROJECT Whistler Landfill - Spring/Fall

WORK ORDER 6031702
REPORTED 2016-04-06

Analyte	Result / *Recovery*	Standard / Guideline	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: Leachate (6031702-06) [Water] Sampled: 2016-03-23 00:00, Continued							F1
Dissolved Metals, Continued							
Silver, dissolved	< 0.00005	0.0005	0.00005	mg/L	N/A	2016-04-01	
Sodium, dissolved	**29.3**	N/A	0.02	mg/L	N/A	2016-04-01	
Strontium, dissolved	**0.268**	N/A	0.001	mg/L	N/A	2016-04-01	
Sulfur, dissolved	**7**	N/A	1	mg/L	N/A	2016-04-01	
Tellurium, dissolved	< 0.0002	N/A	0.0002	mg/L	N/A	2016-04-01	
Thallium, dissolved	< 0.00002	0.003	0.00002	mg/L	N/A	2016-04-01	
Thorium, dissolved	< 0.0001	N/A	0.0001	mg/L	N/A	2016-04-01	
Tin, dissolved	< 0.0002	N/A	0.0002	mg/L	N/A	2016-04-01	
Titanium, dissolved	< 0.005	1	0.005	mg/L	N/A	2016-04-01	
Uranium, dissolved	**0.00004**	3	0.00002	mg/L	N/A	2016-04-01	
Vanadium, dissolved	< 0.001	N/A	0.001	mg/L	N/A	2016-04-01	
Zinc, dissolved	**0.087**	0.075	0.004	mg/L	N/A	2016-04-01	
Zirconium, dissolved	**0.0002**	N/A	0.0001	mg/L	N/A	2016-04-01	
BCMOE Aggregate Hydrocarbons							
VPHw	< 100	1500	100	µg/L	N/A	N/A	
EPHw10-19	< 250	5000	250	µg/L	2016-03-30	2016-04-03	
EPHw19-32	< 250	N/A	250	µg/L	2016-03-30	2016-04-03	
LEPHw	< 250	500	250	µg/L	N/A	N/A	
HEPHw	< 250	N/A	250	µg/L	N/A	N/A	
VHw (6-10)	< 100	15000	100	µg/L	2016-04-01	2016-04-01	
Surrogate: 2-Methylnonane	*75*		*60-140*	%	*2016-03-30*	*2016-04-03*	
Polycyclic Aromatic Hydrocarbons (PAH)							
Acenaphthene	< 0.05	60	0.05	µg/L	2016-03-30	2016-04-02	
Acenaphthylene	< 0.20	N/A	0.20	µg/L	2016-03-30	2016-04-02	
Acridine	< 0.10	0.5	0.10	µg/L	2016-03-30	2016-04-02	
Anthracene	< 0.01	1	0.01	µg/L	2016-03-30	2016-04-02	
Benz (a) anthracene	< 0.01	1	0.01	µg/L	2016-03-30	2016-04-02	
Benzo (a) pyrene	< 0.01	0.1	0.01	µg/L	2016-03-30	2016-04-02	
Benzo (b) fluoranthene	< 0.05	N/A	0.05	µg/L	2016-03-30	2016-04-02	
Benzo (g,h,i) perylene	< 0.05	N/A	0.05	µg/L	2016-03-30	2016-04-02	
Benzo (k) fluoranthene	< 0.05	N/A	0.05	µg/L	2016-03-30	2016-04-02	
Chrysene	< 0.05	1	0.05	µg/L	2016-03-30	2016-04-02	
Dibenz (a,h) anthracene	< 0.05	N/A	0.05	µg/L	2016-03-30	2016-04-02	
Fluoranthene	< 0.03	2	0.03	µg/L	2016-03-30	2016-04-02	
Fluorene	< 0.05	120	0.05	µg/L	2016-03-30	2016-04-02	
Indeno (1,2,3-cd) pyrene	< 0.05	N/A	0.05	µg/L	2016-03-30	2016-04-02	
Naphthalene	< 0.20	10	0.20	µg/L	2016-03-30	2016-04-02	
Phenanthrene	< 0.10	3	0.10	µg/L	2016-03-30	2016-04-02	
Pyrene	< 0.02	0.2	0.02	µg/L	2016-03-30	2016-04-02	
Quinoline	< 0.10	34	0.10	µg/L	2016-03-30	2016-04-02	
Surrogate: Acridine-d9	*118*		*60-140*	%	*2016-03-30*	*2016-04-02*	
Surrogate: Naphthalene-d8	*118*		*60-140*	%	*2016-03-30*	*2016-04-02*	
Surrogate: Perylene-d12	*119*		*60-140*	%	*2016-03-30*	*2016-04-02*	
Volatile Organic Compounds (VOC)							

REPORTED TO	Morrison Hershfield Limited	**WORK ORDER**	6031702
PROJECT	Whistler Landfill - Spring/Fall	**REPORTED**	2016-04-06

Analyte	Result / *Recovery*	Standard / Guideline	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: Leachate (6031702-06) [Water] Sampled: 2016-03-23 00:00, Continued							F1
Volatile Organic Compounds (VOC), Continued							
Acetone	< 10.0	N/A	10.0	µg/L	2016-04-01	2016-04-01	
Benzene	< 0.5	1000	0.5	µg/L	2016-04-01	2016-04-01	
Bromodichloromethane	< 1.0	N/A	1.0	µg/L	2016-04-01	2016-04-01	
Bromoform	< 1.0	N/A	1.0	µg/L	2016-04-01	2016-04-01	
Bromomethane	< 2.0	N/A	2.0	µg/L	2016-04-01	2016-04-01	
2-Butanone (MEK)	< 5.0	N/A	5.0	µg/L	2016-04-01	2016-04-01	
Carbon tetrachloride	< 1.0	130	1.0	µg/L	2016-04-01	2016-04-01	
Chlorobenzene	< 1.0	13	1.0	µg/L	2016-04-01	2016-04-01	
Chloroethane	< 2.0	N/A	2.0	µg/L	2016-04-01	2016-04-01	
Chloroform	< 1.0	20	1.0	µg/L	2016-04-01	2016-04-01	
Chloromethane	< 2.0	N/A	2.0	µg/L	2016-04-01	2016-04-01	
Dibromochloromethane	< 1.0	N/A	1.0	µg/L	2016-04-01	2016-04-01	
Dibromomethane	< 1.0	N/A	1.0	µg/L	2016-04-01	2016-04-01	
1,3-Dichlorobenzene	< 1.0	1500	1.0	µg/L	2016-04-01	2016-04-01	
1,4-Dichlorobenzene	< 1.0	260	1.0	µg/L	2016-04-01	2016-04-01	
1,1-Dichloroethane	< 1.0	N/A	1.0	µg/L	2016-04-01	2016-04-01	
1,2-Dichloroethane	< 1.0	1000	1.0	µg/L	2016-04-01	2016-04-01	
1,1-Dichloroethene	< 1.0	N/A	1.0	µg/L	2016-04-01	2016-04-01	
cis-1,2-Dichloroethene	< 1.0	N/A	1.0	µg/L	2016-04-01	2016-04-01	
trans-1,2-Dichloroethene	< 1.0	N/A	1.0	µg/L	2016-04-01	2016-04-01	
1,2-Dichloropropane	< 1.0	N/A	1.0	µg/L	2016-04-01	2016-04-01	
cis-1,3-Dichloropropene	< 1.0	N/A	1.0	µg/L	2016-04-01	2016-04-01	
trans-1,3-Dichloropropene	< 1.0	N/A	1.0	µg/L	2016-04-01	2016-04-01	
Ethylbenzene	< 1.0	2000	1.0	µg/L	2016-04-01	2016-04-01	
Methyl tert-butyl ether	< 1.0	34000	1.0	µg/L	2016-04-01	2016-04-01	
Methylene chloride	< 3.0	980	3.0	µg/L	2016-04-01	2016-04-01	
4-Methyl-2-Pentanone (MIBK)	< 10.0	N/A	10.0	µg/L	2016-04-01	2016-04-01	
Styrene	< 1.0	720	1.0	µg/L	2016-04-01	2016-04-01	
1,1,1,2-Tetrachloroethane	< 1.0	N/A	1.0	µg/L	2016-04-01	2016-04-01	
1,1,2,2-Tetrachloroethane	< 1.0	1100	1.0	µg/L	2016-04-01	2016-04-01	
Tetrachloroethene	< 1.0	N/A	1.0	µg/L	2016-04-01	2016-04-01	
Toluene	< 1.0	390	1.0	µg/L	2016-04-01	2016-04-01	
1,1,1-Trichloroethane	< 1.0	N/A	1.0	µg/L	2016-04-01	2016-04-01	
1,1,2-Trichloroethane	< 1.0	N/A	1.0	µg/L	2016-04-01	2016-04-01	
Trichloroethene	< 1.0	200	1.0	µg/L	2016-04-01	2016-04-01	
Trichlorofluoromethane	< 1.0	N/A	1.0	µg/L	2016-04-01	2016-04-01	
Vinyl chloride	< 2.0	N/A	2.0	µg/L	2016-04-01	2016-04-01	
m,p-Xylene	< 1.0	N/A	1.0	µg/L	2016-04-01	2016-04-01	
o-Xylene	< 1.0	N/A	1.0	µg/L	2016-04-01	2016-04-01	
Xylenes (total)	< 2.0	N/A	2.0	µg/L	2016-04-01	2016-04-01	
1,2-Dibromoethane	< 0.3	N/A	0.3	µg/L	2016-04-01	2016-04-01	
1,2-Dichlorobenzene	< 0.5	7	0.5	µg/L	2016-04-01	2016-04-01	
Surrogate: Toluene-d8	*94*		*70-130*	%	*2016-04-01*	*2016-04-01*	
Surrogate: 4-Bromofluorobenzene	*89*		*70-130*	%	*2016-04-01*	*2016-04-01*	
Surrogate: 1,4-Dichlorobenzene-d4	*95*		*70-130*	%	*2016-04-01*	*2016-04-01*	

REPORTED TO	Morrison Hershfield Limited	**WORK ORDER**	6031702
PROJECT	Whistler Landfill - Spring/Fall	**REPORTED**	2016-04-06

Analyte	Result / *Recovery*	Standard / Guideline	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: GW Int. (6031702-07) [Water] Sampled: 2016-03-23 00:00							F1
Anions							
Bromide	< 0.10	N/A	0.10	mg/L	N/A	2016-03-30	
Chloride	**73.4**	1500	0.10	mg/L	N/A	2016-03-30	
Fluoride	**0.21**	2	0.01	mg/L	N/A	2016-03-30	
Nitrite as N	< 0.001	0.2	0.001	mg/L	N/A	2016-03-24	
Nitrate+Nitrite as N	**0.010**	400	0.005	mg/L	N/A	2016-04-01	
Sulfate	**386**	1000	1.0	mg/L	N/A	2016-03-30	
General Parameters							
pH	**6.28**	N/A	0.01	pH units	2016-03-29	2016-03-29	HT2
Conductivity (EC)	**1370**	N/A	2	µS/cm	N/A	2016-03-30	
Ammonia as N, Total	**1.98**	N/A	0.005	mg/L	N/A	2016-03-31	
Nitrogen, Total Kjeldahl	**1.95**	N/A	0.05	mg/L	2016-03-30	2016-03-31	
Alkalinity, Total as CaCO3	**130**	N/A	1	mg/L	N/A	2016-03-31	
Alkalinity, Phenolphthalein as CaCO3	< 1	N/A	1	mg/L	N/A	2016-03-31	
Alkalinity, Bicarbonate as CaCO3	**130**	N/A	1	mg/L	N/A	2016-03-31	
Alkalinity, Carbonate as CaCO3	< 1	N/A	1	mg/L	N/A	2016-03-31	
Alkalinity, Hydroxide as CaCO3	< 1	N/A	1	mg/L	N/A	2016-03-31	
Chemical Oxygen Demand	**21**	N/A	5	mg/L	N/A	2016-04-04	
Solids, Total Suspended	**28**	N/A	2	mg/L	N/A	2016-03-30	
Phosphorus, Total as P	**0.023**	N/A	0.002	mg/L	2016-03-31	2016-04-01	
Calculated Parameters							
Hardness, Total (as CaCO3)	**406**	N/A	0.50	mg/L	N/A	N/A	
Nitrate as N	**0.010**	400	0.005	mg/L	N/A	N/A	
Nitrogen, Total	**1.96**	N/A	0.050	mg/L	N/A	N/A	
Dissolved Metals							
Mercury, dissolved	< 0.00002	0.001	0.0002	mg/L	N/A	2016-04-01	
Aluminum, dissolved	**0.005**	N/A	0.005	mg/L	N/A	2016-04-01	
Antimony, dissolved	**0.0001**	0.2	0.0001	mg/L	N/A	2016-04-01	
Arsenic, dissolved	< 0.0005	0.05	0.0005	mg/L	N/A	2016-04-01	
Barium, dissolved	**0.104**	5	0.005	mg/L	N/A	2016-04-01	
Beryllium, dissolved	< 0.0001	0.053	0.0001	mg/L	N/A	2016-04-01	
Bismuth, dissolved	< 0.0001	N/A	0.0001	mg/L	N/A	2016-04-01	
Boron, dissolved	**0.231**	50	0.004	mg/L	N/A	2016-04-01	
Cadmium, dissolved	< 0.00001	0.0001	0.00001	mg/L	N/A	2016-04-01	
Calcium, dissolved	**139**	N/A	0.2	mg/L	N/A	2016-04-01	
Chromium, dissolved	< 0.0005	N/A	0.0005	mg/L	N/A	2016-04-01	
Cobalt, dissolved	**0.0134**	0.04	0.00005	mg/L	N/A	2016-04-01	
Copper, dissolved	< 0.0002	0.02	0.0002	mg/L	N/A	2016-04-01	
Iron, dissolved	**12.7**	N/A	0.010	mg/L	N/A	2016-04-01	
Lead, dissolved	< 0.0001	0.04	0.0001	mg/L	N/A	2016-04-01	
Lithium, dissolved	**0.0006**	N/A	0.0001	mg/L	N/A	2016-04-01	
Magnesium, dissolved	**14.1**	N/A	0.01	mg/L	N/A	2016-04-01	
Manganese, dissolved	**3.43**	N/A	0.0002	mg/L	N/A	2016-04-01	
Molybdenum, dissolved	**0.0002**	10	0.0001	mg/L	N/A	2016-04-01	

REPORTED TO	Morrison Hershfield Limited	**WORK ORDER**	6031702
PROJECT	Whistler Landfill - Spring/Fall	**REPORTED**	2016-04-06

Analyte	Result / *Recovery*	Standard / Guideline	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: GW Int. (6031702-07) [Water] Sampled: 2016-03-23 00:00, Continued							F1
Dissolved Metals, Continued							
Nickel, dissolved	**0.0072**	0.25	0.0002	mg/L	N/A	2016-04-01	
Phosphorus, dissolved	< 0.02	N/A	0.02	mg/L	N/A	2016-04-01	
Potassium, dissolved	**6.40**	N/A	0.02	mg/L	N/A	2016-04-01	
Selenium, dissolved	< 0.0005	0.01	0.0005	mg/L	N/A	2016-04-01	
Silicon, dissolved	**7.9**	N/A	0.5	mg/L	N/A	2016-04-01	
Silver, dissolved	< 0.00005	0.0005	0.00005	mg/L	N/A	2016-04-01	
Sodium, dissolved	**36.5**	N/A	0.02	mg/L	N/A	2016-04-01	
Strontium, dissolved	**0.903**	N/A	0.001	mg/L	N/A	2016-04-01	
Sulfur, dissolved	**91**	N/A	1	mg/L	N/A	2016-04-01	
Tellurium, dissolved	< 0.0002	N/A	0.0002	mg/L	N/A	2016-04-01	
Thallium, dissolved	< 0.00002	0.003	0.00002	mg/L	N/A	2016-04-01	
Thorium, dissolved	< 0.0001	N/A	0.0001	mg/L	N/A	2016-04-01	
Tin, dissolved	< 0.0002	N/A	0.0002	mg/L	N/A	2016-04-01	
Titanium, dissolved	< 0.005	1	0.005	mg/L	N/A	2016-04-01	
Uranium, dissolved	**0.00002**	3	0.00002	mg/L	N/A	2016-04-01	
Vanadium, dissolved	< 0.001	N/A	0.001	mg/L	N/A	2016-04-01	
Zinc, dissolved	**0.029**	0.075	0.004	mg/L	N/A	2016-04-01	
Zirconium, dissolved	< 0.0001	N/A	0.0001	mg/L	N/A	2016-04-01	
BCMOE Aggregate Hydrocarbons							
VPHw	< 100	1500	100	µg/L	N/A	N/A	
EPHw10-19	< 250	5000	250	µg/L	2016-03-30	2016-04-03	
EPHw19-32	< 250	N/A	250	µg/L	2016-03-30	2016-04-03	
LEPHw	< 250	500	250	µg/L	N/A	N/A	
HEPHw	< 250	N/A	250	µg/L	N/A	N/A	
VHw (6-10)	< 100	15000	100	µg/L	2016-04-01	2016-04-01	
Surrogate: 2-Methylnonane	*66*		*60-140*	%	*2016-03-30*	*2016-04-03*	
Polycyclic Aromatic Hydrocarbons (PAH)							
Acenaphthene	**0.78**	60	0.05	µg/L	2016-03-30	2016-04-02	
Acenaphthylene	< 0.20	N/A	0.20	µg/L	2016-03-30	2016-04-02	
Acridine	< 0.10	0.5	0.10	µg/L	2016-03-30	2016-04-02	
Anthracene	**0.04**	1	0.01	µg/L	2016-03-30	2016-04-02	
Benz (a) anthracene	< 0.01	1	0.01	µg/L	2016-03-30	2016-04-02	
Benzo (a) pyrene	**0.01**	0.1	0.01	µg/L	2016-03-30	2016-04-02	
Benzo (b) fluoranthene	< 0.05	N/A	0.05	µg/L	2016-03-30	2016-04-02	
Benzo (g,h,i) perylene	< 0.05	N/A	0.05	µg/L	2016-03-30	2016-04-02	
Benzo (k) fluoranthene	< 0.05	N/A	0.05	µg/L	2016-03-30	2016-04-02	
Chrysene	< 0.05	1	0.05	µg/L	2016-03-30	2016-04-02	
Dibenz (a,h) anthracene	< 0.05	N/A	0.05	µg/L	2016-03-30	2016-04-02	
Fluoranthene	**0.18**	2	0.03	µg/L	2016-03-30	2016-04-02	
Fluorene	**0.29**	120	0.05	µg/L	2016-03-30	2016-04-02	
Indeno (1,2,3-cd) pyrene	< 0.05	N/A	0.05	µg/L	2016-03-30	2016-04-02	
Naphthalene	< 0.20	10	0.20	µg/L	2016-03-30	2016-04-02	
Phenanthrene	< 0.10	3	0.10	µg/L	2016-03-30	2016-04-02	
Pyrene	**0.12**	0.2	0.02	µg/L	2016-03-30	2016-04-02	

REPORTED TO	Morrison Hershfield Limited	**WORK ORDER**	6031702
PROJECT	Whistler Landfill - Spring/Fall	**REPORTED**	2016-04-06

Analyte	Result / *Recovery*	Standard / Guideline	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: GW Int. (6031702-07) [Water] Sampled: 2016-03-23 00:00, Continued							F1
Polycyclic Aromatic Hydrocarbons (PAH), Continued							
Quinoline	< 0.10	34	0.10	µg/L	2016-03-30	2016-04-02	
Surrogate: Acridine-d9	*99*		*60-140*	%	*2016-03-30*	*2016-04-02*	
Surrogate: Naphthalene-d8	*99*		*60-140*	%	*2016-03-30*	*2016-04-02*	
Surrogate: Perylene-d12	*121*		*60-140*	%	*2016-03-30*	*2016-04-02*	
Volatile Organic Compounds (VOC)							
Acetone	< 10.0	N/A	10.0	µg/L	2016-04-01	2016-04-01	
Benzene	< 0.5	1000	0.5	µg/L	2016-04-01	2016-04-01	
Bromodichloromethane	< 1.0	N/A	1.0	µg/L	2016-04-01	2016-04-01	
Bromoform	< 1.0	N/A	1.0	µg/L	2016-04-01	2016-04-01	
Bromomethane	< 2.0	N/A	2.0	µg/L	2016-04-01	2016-04-01	
2-Butanone (MEK)	< 5.0	N/A	5.0	µg/L	2016-04-01	2016-04-01	
Carbon tetrachloride	< 1.0	130	1.0	µg/L	2016-04-01	2016-04-01	
Chlorobenzene	< 1.0	13	1.0	µg/L	2016-04-01	2016-04-01	
Chloroethane	< 2.0	N/A	2.0	µg/L	2016-04-01	2016-04-01	
Chloroform	< 1.0	20	1.0	µg/L	2016-04-01	2016-04-01	
Chloromethane	< 2.0	N/A	2.0	µg/L	2016-04-01	2016-04-01	
Dibromochloromethane	< 1.0	N/A	1.0	µg/L	2016-04-01	2016-04-01	
Dibromomethane	< 1.0	N/A	1.0	µg/L	2016-04-01	2016-04-01	
1,3-Dichlorobenzene	< 1.0	1500	1.0	µg/L	2016-04-01	2016-04-01	
1,4-Dichlorobenzene	< 1.0	260	1.0	µg/L	2016-04-01	2016-04-01	
1,1-Dichloroethane	< 1.0	N/A	1.0	µg/L	2016-04-01	2016-04-01	
1,2-Dichloroethane	< 1.0	1000	1.0	µg/L	2016-04-01	2016-04-01	
1,1-Dichloroethene	< 1.0	N/A	1.0	µg/L	2016-04-01	2016-04-01	
cis-1,2-Dichloroethene	< 1.0	N/A	1.0	µg/L	2016-04-01	2016-04-01	
trans-1,2-Dichloroethene	< 1.0	N/A	1.0	µg/L	2016-04-01	2016-04-01	
1,2-Dichloropropane	< 1.0	N/A	1.0	µg/L	2016-04-01	2016-04-01	
cis-1,3-Dichloropropene	< 1.0	N/A	1.0	µg/L	2016-04-01	2016-04-01	
trans-1,3-Dichloropropene	< 1.0	N/A	1.0	µg/L	2016-04-01	2016-04-01	
Ethylbenzene	< 1.0	2000	1.0	µg/L	2016-04-01	2016-04-01	
Methyl tert-butyl ether	< 1.0	34000	1.0	µg/L	2016-04-01	2016-04-01	
Methylene chloride	< 3.0	980	3.0	µg/L	2016-04-01	2016-04-01	
4-Methyl-2-Pentanone (MIBK)	< 10.0	N/A	10.0	µg/L	2016-04-01	2016-04-01	
Styrene	< 1.0	720	1.0	µg/L	2016-04-01	2016-04-01	
1,1,1,2-Tetrachloroethane	< 1.0	N/A	1.0	µg/L	2016-04-01	2016-04-01	
1,1,2,2-Tetrachloroethane	< 1.0	1100	1.0	µg/L	2016-04-01	2016-04-01	
Tetrachloroethene	< 1.0	N/A	1.0	µg/L	2016-04-01	2016-04-01	
Toluene	< 1.0	390	1.0	µg/L	2016-04-01	2016-04-01	
1,1,1-Trichloroethane	< 1.0	N/A	1.0	µg/L	2016-04-01	2016-04-01	
1,1,2-Trichloroethane	< 1.0	N/A	1.0	µg/L	2016-04-01	2016-04-01	
Trichloroethene	< 1.0	200	1.0	µg/L	2016-04-01	2016-04-01	
Trichlorofluoromethane	< 1.0	N/A	1.0	µg/L	2016-04-01	2016-04-01	
Vinyl chloride	< 2.0	N/A	2.0	µg/L	2016-04-01	2016-04-01	
m,p-Xylene	< 1.0	N/A	1.0	µg/L	2016-04-01	2016-04-01	
o-Xylene	< 1.0	N/A	1.0	µg/L	2016-04-01	2016-04-01	
Xylenes (total)	< 2.0	N/A	2.0	µg/L	2016-04-01	2016-04-01	

REPORTED TO	Morrison Hershfield Limited	**WORK ORDER**	6031702
PROJECT	Whistler Landfill - Spring/Fall	**REPORTED**	2016-04-06

Analyte	Result / *Recovery*	Standard / Guideline	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: GW Int. (6031702-07) [Water] Sampled: 2016-03-23 00:00, Continued							F1
Volatile Organic Compounds (VOC), Continued							
1,2-Dibromoethane	< 0.3	N/A	0.3	µg/L	2016-04-01	2016-04-01	
1,2-Dichlorobenzene	< 0.5	7	0.5	µg/L	2016-04-01	2016-04-01	
Surrogate: Toluene-d8	*103*		*70-130*	%	*2016-04-01*	*2016-04-01*	
Surrogate: 4-Bromofluorobenzene	*98*		*70-130*	%	*2016-04-01*	*2016-04-01*	
Surrogate: 1,4-Dichlorobenzene-d4	*103*		*70-130*	%	*2016-04-01*	*2016-04-01*	
Sample ID: SFC 4 (6031702-08) [Water] Sampled: 2016-03-23 00:00							
Anions							
Bromide	< 0.10	N/A	0.10	mg/L	N/A	2016-03-30	
Chloride	**11.9**	1500	0.10	mg/L	N/A	2016-03-30	
Fluoride	**0.06**	2	0.01	mg/L	N/A	2016-03-30	
Nitrite as N	< 0.001	0.2	0.001	mg/L	N/A	2016-03-24	
Nitrate+Nitrite as N	**0.173**	400	0.005	mg/L	N/A	2016-04-01	
Sulfate	**31.2**	1000	1.0	mg/L	N/A	2016-03-30	
General Parameters							
pH	**6.97**	N/A	0.01	pH units	2016-03-29	2016-03-29	HT2
Conductivity (EC)	**194**	N/A	2	µS/cm	N/A	2016-03-30	
Ammonia as N, Total	**0.057**	N/A	0.005	mg/L	N/A	2016-03-31	
Nitrogen, Total Kjeldahl	**0.11**	N/A	0.05	mg/L	2016-03-30	2016-03-31	
Alkalinity, Total as CaCO3	**23**	N/A	1	mg/L	N/A	2016-03-31	
Alkalinity, Phenolphthalein as CaCO3	< 1	N/A	1	mg/L	N/A	2016-03-31	
Alkalinity, Bicarbonate as CaCO3	**23**	N/A	1	mg/L	N/A	2016-03-31	
Alkalinity, Carbonate as CaCO3	< 1	N/A	1	mg/L	N/A	2016-03-31	
Alkalinity, Hydroxide as CaCO3	< 1	N/A	1	mg/L	N/A	2016-03-31	
Chemical Oxygen Demand	**7**	N/A	5	mg/L	N/A	2016-04-04	
Solids, Total Suspended	**5**	N/A	2	mg/L	N/A	2016-03-30	
Phosphorus, Total as P	**0.013**	N/A	0.002	mg/L	2016-03-31	2016-04-01	
Calculated Parameters							
Hardness, Total (as CaCO3)	**62.8**	N/A	0.50	mg/L	N/A	N/A	
Nitrate as N	**0.173**	400	0.005	mg/L	N/A	N/A	
Nitrogen, Total	**0.282**	N/A	0.050	mg/L	N/A	N/A	
Total Recoverable Metals							
Aluminum, total	**0.559**	N/A	0.005	mg/L	2016-03-29	2016-03-29	
Antimony, total	< 0.0001	0.2	0.0001	mg/L	2016-03-29	2016-03-29	
Arsenic, total	< 0.0005	0.05	0.0005	mg/L	2016-03-29	2016-03-29	
Barium, total	**0.018**	5	0.005	mg/L	2016-03-29	2016-03-29	
Beryllium, total	< 0.0001	0.053	0.0001	mg/L	2016-03-29	2016-03-29	
Bismuth, total	< 0.0001	N/A	0.0001	mg/L	2016-03-29	2016-03-29	
Boron, total	**0.014**	50	0.004	mg/L	2016-03-29	2016-03-29	
Cadmium, total	**0.00004**	0.0001	0.00001	mg/L	2016-03-29	2016-03-29	
Calcium, total	**20.8**	N/A	0.2	mg/L	2016-03-29	2016-03-29	
Chromium, total	< 0.0005	N/A	0.0005	mg/L	2016-03-29	2016-03-29	
Cobalt, total	**0.00138**	0.04	0.00005	mg/L	2016-03-29	2016-03-29	

REPORTED TO	Morrison Hershfield Limited	**WORK ORDER**	6031702
PROJECT	Whistler Landfill - Spring/Fall	**REPORTED**	2016-04-06

Analyte	Result / *Recovery*	Standard / Guideline	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: SFC 4 (6031702-08) [Water] Sampled: 2016-03-23 00:00, Continued							
Total Recoverable Metals, Continued							
Copper, total	**0.0060**	0.02	0.0002	mg/L	2016-03-29	2016-03-29	
Iron, total	**0.92**	N/A	0.01	mg/L	2016-03-29	2016-03-29	
Lead, total	< 0.0001	0.04	0.0001	mg/L	2016-03-29	2016-03-29	
Lithium, total	**0.0006**	N/A	0.0001	mg/L	2016-03-29	2016-03-29	
Magnesium, total	**2.65**	N/A	0.01	mg/L	2016-03-29	2016-03-29	
Manganese, total	**0.194**	N/A	0.0002	mg/L	2016-03-29	2016-03-29	
Mercury, total	< 0.00002	0.001	0.00002	mg/L	2016-03-29	2016-03-30	
Molybdenum, total	**0.0012**	10	0.0001	mg/L	2016-03-29	2016-03-29	
Nickel, total	**0.0010**	0.25	0.0002	mg/L	2016-03-29	2016-03-29	
Phosphorus, total	< 0.02	N/A	0.02	mg/L	2016-03-29	2016-03-29	
Potassium, total	**1.92**	N/A	0.02	mg/L	2016-03-29	2016-03-29	
Selenium, total	< 0.0005	0.01	0.0005	mg/L	2016-03-29	2016-03-29	
Silicon, total	**6.6**	N/A	0.5	mg/L	2016-03-29	2016-03-29	
Silver, total	< 0.00005	0.0005	0.00005	mg/L	2016-03-29	2016-03-29	
Sodium, total	**17.3**	N/A	0.02	mg/L	2016-03-29	2016-03-29	
Strontium, total	**0.144**	N/A	0.001	mg/L	2016-03-29	2016-03-29	
Sulfur, total	**13**	N/A	1	mg/L	2016-03-29	2016-03-29	
Tellurium, total	< 0.0002	N/A	0.0002	mg/L	2016-03-29	2016-03-29	
Thallium, total	< 0.00002	0.003	0.00002	mg/L	2016-03-29	2016-03-29	
Thorium, total	< 0.0001	N/A	0.0001	mg/L	2016-03-29	2016-03-29	
Tin, total	< 0.0002	N/A	0.0002	mg/L	2016-03-29	2016-03-29	
Titanium, total	**0.008**	1	0.005	mg/L	2016-03-29	2016-03-29	
Uranium, total	**0.00003**	3	0.00002	mg/L	2016-03-29	2016-03-29	
Vanadium, total	< 0.001	N/A	0.001	mg/L	2016-03-29	2016-03-29	
Zinc, total	**0.006**	0.075	0.004	mg/L	2016-03-29	2016-03-29	
Zirconium, total	**0.0002**	N/A	0.0001	mg/L	2016-03-29	2016-03-29	
Sample ID: SFC 2 (6031702-09) [Water] Sampled: 2016-03-23 00:00							
Anions							
Bromide	< 0.10	N/A	0.10	mg/L	N/A	2016-03-30	
Chloride	**13.5**	1500	0.10	mg/L	N/A	2016-03-30	
Fluoride	**0.15**	2	0.01	mg/L	N/A	2016-03-30	
Nitrite as N	< 0.001	0.2	0.001	mg/L	N/A	2016-03-24	
Nitrate+Nitrite as N	**0.361**	400	0.005	mg/L	N/A	2016-04-01	
Sulfate	**58.1**	1000	1.0	mg/L	N/A	2016-03-30	
General Parameters							
pH	**6.70**	N/A	0.01	pH units	2016-03-29	2016-03-29	HT2
Conductivity (EC)	**332**	N/A	2	µS/cm	N/A	2016-03-30	
Ammonia as N, Total	**0.299**	N/A	0.005	mg/L	N/A	2016-03-31	
Nitrogen, Total Kjeldahl	**0.40**	N/A	0.05	mg/L	2016-03-30	2016-03-31	
Alkalinity, Total as CaCO3	**50**	N/A	1	mg/L	N/A	2016-03-31	
Alkalinity, Phenolphthalein as CaCO3	< 1	N/A	1	mg/L	N/A	2016-03-31	
Alkalinity, Bicarbonate as CaCO3	**50**	N/A	1	mg/L	N/A	2016-03-31	
Alkalinity, Carbonate as CaCO3	< 1	N/A	1	mg/L	N/A	2016-03-31	

REPORTED TO	Morrison Hershfield Limited	**WORK ORDER**	6031702
PROJECT	Whistler Landfill - Spring/Fall	**REPORTED**	2016-04-06

Analyte	Result / *Recovery*	Standard / Guideline	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: SFC 2 (6031702-09) [Water] Sampled: 2016-03-23 00:00, Continued							
General Parameters, Continued							
Alkalinity, Hydroxide as CaCO3	< 1	N/A	1	mg/L	N/A	2016-03-31	
Chemical Oxygen Demand	**5**	N/A	5	mg/L	N/A	2016-04-04	
Solids, Total Suspended	**9**	N/A	2	mg/L	N/A	2016-03-30	
Phosphorus, Total as P	**0.007**	N/A	0.002	mg/L	2016-03-31	2016-04-01	
Calculated Parameters							
Hardness, Total (as CaCO3)	**121**	N/A	0.50	mg/L	N/A	N/A	
Nitrate as N	**0.361**	400	0.005	mg/L	N/A	N/A	
Nitrogen, Total	**0.756**	N/A	0.050	mg/L	N/A	N/A	
Total Recoverable Metals							
Aluminum, total	**1.19**	N/A	0.005	mg/L	2016-03-29	2016-03-29	
Antimony, total	< 0.0001	0.2	0.0001	mg/L	2016-03-29	2016-03-29	
Arsenic, total	< 0.0005	0.05	0.0005	mg/L	2016-03-29	2016-03-29	
Barium, total	**0.041**	5	0.005	mg/L	2016-03-29	2016-03-29	
Beryllium, total	< 0.0001	0.053	0.0001	mg/L	2016-03-29	2016-03-29	
Bismuth, total	< 0.0001	N/A	0.0001	mg/L	2016-03-29	2016-03-29	
Boron, total	**0.023**	50	0.004	mg/L	2016-03-29	2016-03-29	
Cadmium, total	**0.00005**	0.0001	0.00001	mg/L	2016-03-29	2016-03-29	
Calcium, total	**41.8**	N/A	0.2	mg/L	2016-03-29	2016-03-29	
Chromium, total	< 0.0005	N/A	0.0005	mg/L	2016-03-29	2016-03-29	
Cobalt, total	**0.00514**	0.04	0.00005	mg/L	2016-03-29	2016-03-29	
Copper, total	**0.0191**	0.02	0.0002	mg/L	2016-03-29	2016-03-29	
Iron, total	**3.30**	N/A	0.01	mg/L	2016-03-29	2016-03-29	
Lead, total	< 0.0001	0.04	0.0001	mg/L	2016-03-29	2016-03-29	
Lithium, total	**0.0004**	N/A	0.0001	mg/L	2016-03-29	2016-03-29	
Magnesium, total	**4.03**	N/A	0.01	mg/L	2016-03-29	2016-03-29	
Manganese, total	**0.670**	N/A	0.0002	mg/L	2016-03-29	2016-03-29	
Mercury, total	< 0.00002	0.001	0.00002	mg/L	2016-03-29	2016-03-30	
Molybdenum, total	**0.0054**	10	0.0001	mg/L	2016-03-29	2016-03-29	
Nickel, total	**0.0024**	0.25	0.0002	mg/L	2016-03-29	2016-03-29	
Phosphorus, total	**0.04**	N/A	0.02	mg/L	2016-03-29	2016-03-29	
Potassium, total	**4.19**	N/A	0.02	mg/L	2016-03-29	2016-03-29	
Selenium, total	< 0.0005	0.01	0.0005	mg/L	2016-03-29	2016-03-29	
Silicon, total	**4.6**	N/A	0.5	mg/L	2016-03-29	2016-03-29	
Silver, total	< 0.00005	0.0005	0.00005	mg/L	2016-03-29	2016-03-29	
Sodium, total	**16.7**	N/A	0.02	mg/L	2016-03-29	2016-03-29	
Strontium, total	**0.205**	N/A	0.001	mg/L	2016-03-29	2016-03-29	
Sulfur, total	**22**	N/A	1	mg/L	2016-03-29	2016-03-29	
Tellurium, total	**0.0002**	N/A	0.0002	mg/L	2016-03-29	2016-03-29	
Thallium, total	< 0.00002	0.003	0.00002	mg/L	2016-03-29	2016-03-29	
Thorium, total	< 0.0001	N/A	0.0001	mg/L	2016-03-29	2016-03-29	
Tin, total	< 0.0002	N/A	0.0002	mg/L	2016-03-29	2016-03-29	
Titanium, total	< 0.005	1	0.005	mg/L	2016-03-29	2016-03-29	
Uranium, total	**0.00009**	3	0.00002	mg/L	2016-03-29	2016-03-29	
Vanadium, total	< 0.001	N/A	0.001	mg/L	2016-03-29	2016-03-29	

REPORTED TO	Morrison Hershfield Limited	**WORK ORDER**	6031702
PROJECT	Whistler Landfill - Spring/Fall	**REPORTED**	2016-04-06

Analyte	Result / *Recovery*	Standard / Guideline	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: SFC 2 (6031702-09) [Water] Sampled: 2016-03-23 00:00, Continued							
Total Recoverable Metals, Continued							
Zinc, total	**0.009**	0.075	0.004	mg/L	2016-03-29	2016-03-29	
Zirconium, total	< 0.0001	N/A	0.0001	mg/L	2016-03-29	2016-03-29	
Sample ID: SFC 3 (6031702-10) [Water] Sampled: 2016-03-23 00:00							
Anions							
Bromide	< 0.10	N/A	0.10	mg/L	N/A	2016-03-30	
Chloride	**33.4**	1500	0.10	mg/L	N/A	2016-03-30	
Fluoride	**0.04**	2	0.01	mg/L	N/A	2016-03-30	
Nitrite as N	< 0.001	0.2	0.001	mg/L	N/A	2016-03-24	
Nitrate+Nitrite as N	**0.101**	400	0.005	mg/L	N/A	2016-04-01	
Sulfate	**27.7**	1000	1.0	mg/L	N/A	2016-03-30	
General Parameters							
pH	**6.92**	N/A	0.01	pH units	2016-03-29	2016-03-29	HT2
Conductivity (EC)	**288**	N/A	2	µS/cm	N/A	2016-03-30	
Ammonia as N, Total	< 0.005	N/A	0.005	mg/L	N/A	2016-03-31	
Nitrogen, Total Kjeldahl	**0.07**	N/A	0.05	mg/L	2016-03-30	2016-03-31	
Alkalinity, Total as CaCO3	**29**	N/A	1	mg/L	N/A	2016-03-31	
Alkalinity, Phenolphthalein as CaCO3	< 1	N/A	1	mg/L	N/A	2016-03-31	
Alkalinity, Bicarbonate as CaCO3	**29**	N/A	1	mg/L	N/A	2016-03-31	
Alkalinity, Carbonate as CaCO3	< 1	N/A	1	mg/L	N/A	2016-03-31	
Alkalinity, Hydroxide as CaCO3	< 1	N/A	1	mg/L	N/A	2016-03-31	
Chemical Oxygen Demand	**6**	N/A	5	mg/L	N/A	2016-04-04	
Solids, Total Suspended	< 2	N/A	2	mg/L	N/A	2016-03-30	
Phosphorus, Total as P	**0.004**	N/A	0.002	mg/L	2016-03-31	2016-04-01	
Calculated Parameters							
Hardness, Total (as CaCO3)	**61.6**	N/A	0.50	mg/L	N/A	N/A	
Nitrate as N	**0.101**	400	0.005	mg/L	N/A	N/A	
Nitrogen, Total	**0.171**	N/A	0.050	mg/L	N/A	N/A	
Total Recoverable Metals							
Aluminum, total	**0.197**	N/A	0.005	mg/L	2016-03-29	2016-03-29	
Antimony, total	**0.0001**	0.2	0.0001	mg/L	2016-03-29	2016-03-29	
Arsenic, total	< 0.0005	0.05	0.0005	mg/L	2016-03-29	2016-03-29	
Barium, total	**0.026**	5	0.005	mg/L	2016-03-29	2016-03-29	
Beryllium, total	< 0.0001	0.053	0.0001	mg/L	2016-03-29	2016-03-29	
Bismuth, total	< 0.0001	N/A	0.0001	mg/L	2016-03-29	2016-03-29	
Boron, total	**0.007**	50	0.004	mg/L	2016-03-29	2016-03-29	
Cadmium, total	**0.00004**	0.0001	0.00001	mg/L	2016-03-29	2016-03-29	
Calcium, total	**21.1**	N/A	0.2	mg/L	2016-03-29	2016-03-29	
Chromium, total	< 0.0005	N/A	0.0005	mg/L	2016-03-29	2016-03-29	
Cobalt, total	**0.00019**	0.04	0.00005	mg/L	2016-03-29	2016-03-29	
Copper, total	**0.0027**	0.02	0.0002	mg/L	2016-03-29	2016-03-29	
Iron, total	**0.19**	N/A	0.01	mg/L	2016-03-29	2016-03-29	
Lead, total	< 0.0001	0.04	0.0001	mg/L	2016-03-29	2016-03-29	

REPORTED TO	Morrison Hershfield Limited	**WORK ORDER**	6031702
PROJECT	Whistler Landfill - Spring/Fall	**REPORTED**	2016-04-06

Analyte	Result / *Recovery*	Standard / Guideline	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: SFC 3 (6031702-10) [Water] Sampled: 2016-03-23 00:00, Continued							
Total Recoverable Metals, Continued							
Lithium, total	**0.0003**	N/A	0.0001	mg/L	2016-03-29	2016-03-29	
Magnesium, total	**2.17**	N/A	0.01	mg/L	2016-03-29	2016-03-29	
Manganese, total	**0.0192**	N/A	0.0002	mg/L	2016-03-29	2016-03-29	
Mercury, total	< 0.00002	0.001	0.00002	mg/L	2016-03-29	2016-03-30	
Molybdenum, total	**0.0023**	10	0.0001	mg/L	2016-03-29	2016-03-29	
Nickel, total	**0.0004**	0.25	0.0002	mg/L	2016-03-29	2016-03-29	
Phosphorus, total	**0.04**	N/A	0.02	mg/L	2016-03-29	2016-03-29	
Potassium, total	**2.37**	N/A	0.02	mg/L	2016-03-29	2016-03-29	
Selenium, total	< 0.0005	0.01	0.0005	mg/L	2016-03-29	2016-03-29	
Silicon, total	**5.6**	N/A	0.5	mg/L	2016-03-29	2016-03-29	
Silver, total	< 0.00005	0.0005	0.00005	mg/L	2016-03-29	2016-03-29	
Sodium, total	**31.9**	N/A	0.02	mg/L	2016-03-29	2016-03-29	
Strontium, total	**0.127**	N/A	0.001	mg/L	2016-03-29	2016-03-29	
Sulfur, total	**10**	N/A	1	mg/L	2016-03-29	2016-03-29	
Tellurium, total	< 0.0002	N/A	0.0002	mg/L	2016-03-29	2016-03-29	
Thallium, total	< 0.00002	0.003	0.00002	mg/L	2016-03-29	2016-03-29	
Thorium, total	< 0.0001	N/A	0.0001	mg/L	2016-03-29	2016-03-29	
Tin, total	< 0.0002	N/A	0.0002	mg/L	2016-03-29	2016-03-29	
Titanium, total	**0.005**	1	0.005	mg/L	2016-03-29	2016-03-29	
Uranium, total	**0.00003**	3	0.00002	mg/L	2016-03-29	2016-03-29	
Vanadium, total	< 0.001	N/A	0.001	mg/L	2016-03-29	2016-03-29	
Zinc, total	**0.007**	0.075	0.004	mg/L	2016-03-29	2016-03-29	
Zirconium, total	**0.0001**	N/A	0.0001	mg/L	2016-03-29	2016-03-29	
Sample ID: SFC 2B (6031702-11) [Water] Sampled: 2016-03-23 00:00							
Anions							
Chloride	**7.07**	1500	0.10	mg/L	N/A	2016-03-31	
Fluoride	**0.37**	2	0.01	mg/L	N/A	2016-03-31	
Nitrite as N	**0.011**	0.2	0.001	mg/L	N/A	2016-03-24	
Nitrate+Nitrite as N	**3.22**	400	0.005	mg/L	N/A	2016-04-01	
Sulfate	**184**	1000	1.0	mg/L	N/A	2016-03-31	
General Parameters							
pH	**4.65**	N/A	0.01	pH units	N/A	2016-04-05	HT2
Conductivity (EC)	**395**	N/A	2	µS/cm	N/A	2016-04-05	
Ammonia as N, Total	**0.511**	N/A	0.005	mg/L	N/A	2016-03-31	
Nitrogen, Total Kjeldahl	**1.04**	N/A	0.05	mg/L	2016-04-01	2016-04-04	
Alkalinity, Total as CaCO3	**3**	N/A	1	mg/L	N/A	2016-04-05	
Alkalinity, Phenolphthalein as CaCO3	< 1	N/A	1	mg/L	N/A	2016-04-05	
Alkalinity, Bicarbonate as CaCO3	**3**	N/A	1	mg/L	N/A	2016-04-05	
Alkalinity, Carbonate as CaCO3	< 1	N/A	1	mg/L	N/A	2016-04-05	
Alkalinity, Hydroxide as CaCO3	< 1	N/A	1	mg/L	N/A	2016-04-05	
Chemical Oxygen Demand	**16**	N/A	5	mg/L	N/A	2016-04-04	
Solids, Total Suspended	**46**	N/A	2	mg/L	N/A	2016-03-30	

REPORTED TO	Morrison Hershfield Limited	**WORK ORDER**	6031702
PROJECT	Whistler Landfill - Spring/Fall	**REPORTED**	2016-04-06

Analyte	Result / *Recovery*	Standard / Guideline	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: SFC 2B (6031702-11) [Water] Sampled: 2016-03-23 00:00, Continued							
Calculated Parameters							
Hardness, Total (as CaCO3)	**157**	N/A	0.50	mg/L	N/A	N/A	
Nitrate as N	**3.21**	400	0.050	mg/L	N/A	N/A	
Nitrogen, Total	**4.25**	N/A	0.050	mg/L	N/A	N/A	
Total Recoverable Metals							
Aluminum, total	**6.67**	N/A	0.005	mg/L	2016-03-30	2016-03-30	
Antimony, total	< 0.0001	0.2	0.0001	mg/L	2016-03-30	2016-03-30	
Arsenic, total	**0.0007**	0.05	0.0005	mg/L	2016-03-30	2016-03-30	
Barium, total	**0.032**	5	0.005	mg/L	2016-03-30	2016-03-30	
Beryllium, total	**0.0002**	0.053	0.0001	mg/L	2016-03-30	2016-03-30	
Bismuth, total	< 0.0001	N/A	0.0001	mg/L	2016-03-30	2016-03-30	
Boron, total	**0.046**	50	0.004	mg/L	2016-03-30	2016-03-30	
Cadmium, total	**0.00036**	0.0001	0.00001	mg/L	2016-03-30	2016-03-30	
Calcium, total	**49.6**	N/A	0.2	mg/L	2016-03-30	2016-03-30	
Chromium, total	**0.0014**	N/A	0.0005	mg/L	2016-03-30	2016-03-30	
Cobalt, total	**0.0323**	0.04	0.00005	mg/L	2016-03-30	2016-03-30	
Copper, total	**0.137**	0.02	0.0002	mg/L	2016-03-30	2016-03-30	
Iron, total	**15.2**	N/A	0.01	mg/L	2016-03-30	2016-03-30	
Lead, total	< 0.0001	0.04	0.0001	mg/L	2016-03-30	2016-03-30	
Lithium, total	**0.0025**	N/A	0.0001	mg/L	2016-03-30	2016-03-30	
Magnesium, total	**7.91**	N/A	0.01	mg/L	2016-03-30	2016-03-30	
Manganese, total	**1.69**	N/A	0.0002	mg/L	2016-03-30	2016-03-30	
Mercury, total	< 0.00002	0.001	0.00002	mg/L	2016-04-04	2016-04-04	
Molybdenum, total	**0.0003**	10	0.0001	mg/L	2016-03-30	2016-03-30	
Nickel, total	**0.0162**	0.25	0.0002	mg/L	2016-03-30	2016-03-30	
Phosphorus, total	**0.07**	N/A	0.02	mg/L	2016-03-30	2016-03-30	
Potassium, total	**4.18**	N/A	0.02	mg/L	2016-03-30	2016-03-30	
Selenium, total	< 0.0005	0.01	0.0005	mg/L	2016-03-30	2016-03-30	
Silicon, total	**6.8**	N/A	0.5	mg/L	2016-03-30	2016-03-30	
Silver, total	< 0.00005	0.0005	0.00005	mg/L	2016-03-30	2016-03-30	
Sodium, total	**8.74**	N/A	0.02	mg/L	2016-03-30	2016-03-30	
Strontium, total	**0.201**	N/A	0.001	mg/L	2016-03-30	2016-03-30	
Sulfur, total	**57**	N/A	1	mg/L	2016-03-30	2016-03-30	
Tellurium, total	< 0.0002	N/A	0.0002	mg/L	2016-03-30	2016-03-30	
Thallium, total	< 0.00002	0.003	0.00002	mg/L	2016-03-30	2016-03-30	
Thorium, total	**0.0008**	N/A	0.0001	mg/L	2016-03-30	2016-03-30	
Tin, total	< 0.0002	N/A	0.0002	mg/L	2016-03-30	2016-03-30	
Titanium, total	< 0.005	1	0.005	mg/L	2016-03-30	2016-03-30	
Uranium, total	**0.00039**	3	0.00002	mg/L	2016-03-30	2016-03-30	
Vanadium, total	< 0.001	N/A	0.001	mg/L	2016-03-30	2016-03-30	
Zinc, total	**0.045**	0.075	0.004	mg/L	2016-03-30	2016-03-30	
Zirconium, total	< 0.0001	N/A	0.0001	mg/L	2016-03-30	2016-03-30	
Sample ID: SFC11 (6031702-12) [Water] Sampled: 2016-03-23 00:00							
Anions							

REPORTED TO	Morrison Hershfield Limited	**WORK ORDER**	6031702
PROJECT	Whistler Landfill - Spring/Fall	**REPORTED**	2016-04-06

Analyte	Result / *Recovery*	Standard / Guideline	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: SFC11 (6031702-12) [Water] Sampled: 2016-03-23 00:00, Continued							
Anions, Continued							
Bromide	< 0.10	N/A	0.10	mg/L	N/A	2016-03-30	
Chloride	**3.62**	1500	0.10	mg/L	N/A	2016-03-30	
Fluoride	**0.13**	2	0.01	mg/L	N/A	2016-03-30	
Nitrite as N	< 0.001	0.2	0.001	mg/L	N/A	2016-03-24	
Nitrate+Nitrite as N	**0.113**	400	0.005	mg/L	N/A	2016-04-01	
Sulfate	**7.1**	1000	1.0	mg/L	N/A	2016-03-30	
General Parameters							
pH	**7.09**	N/A	0.01	pH units	2016-03-29	2016-03-29	HT2
Conductivity (EC)	**78**	N/A	2	µS/cm	N/A	2016-03-30	
Ammonia as N, Total	**0.025**	N/A	0.005	mg/L	N/A	2016-03-31	
Nitrogen, Total Kjeldahl	**0.06**	N/A	0.05	mg/L	2016-03-30	2016-03-31	
Alkalinity, Total as CaCO3	**16**	N/A	1	mg/L	N/A	2016-03-31	
Alkalinity, Phenolphthalein as CaCO3	< 1	N/A	1	mg/L	N/A	2016-03-31	
Alkalinity, Bicarbonate as CaCO3	**16**	N/A	1	mg/L	N/A	2016-03-31	
Alkalinity, Carbonate as CaCO3	< 1	N/A	1	mg/L	N/A	2016-03-31	
Alkalinity, Hydroxide as CaCO3	< 1	N/A	1	mg/L	N/A	2016-03-31	
Chemical Oxygen Demand	**6**	N/A	5	mg/L	N/A	2016-04-04	
Solids, Total Suspended	**8**	N/A	2	mg/L	N/A	2016-03-30	
Phosphorus, Total as P	**0.031**	N/A	0.002	mg/L	2016-03-31	2016-04-01	
Calculated Parameters							
Hardness, Total (as CaCO3)	**27.0**	N/A	0.50	mg/L	N/A	N/A	
Nitrate as N	**0.113**	400	0.005	mg/L	N/A	N/A	
Nitrogen, Total	**0.178**	N/A	0.050	mg/L	N/A	N/A	
Total Recoverable Metals							
Aluminum, total	**1.04**	N/A	0.005	mg/L	2016-03-29	2016-03-29	
Antimony, total	**0.0001**	0.2	0.0001	mg/L	2016-03-29	2016-03-29	
Arsenic, total	< 0.0005	0.05	0.0005	mg/L	2016-03-29	2016-03-29	
Barium, total	**0.014**	5	0.005	mg/L	2016-03-29	2016-03-29	
Beryllium, total	< 0.0001	0.053	0.0001	mg/L	2016-03-29	2016-03-29	
Bismuth, total	< 0.0001	N/A	0.0001	mg/L	2016-03-29	2016-03-29	
Boron, total	**0.004**	50	0.004	mg/L	2016-03-29	2016-03-29	
Cadmium, total	**0.00002**	0.0001	0.00001	mg/L	2016-03-29	2016-03-29	
Calcium, total	**8.2**	N/A	0.2	mg/L	2016-03-29	2016-03-29	
Chromium, total	**0.0006**	N/A	0.0005	mg/L	2016-03-29	2016-03-29	
Cobalt, total	**0.00038**	0.04	0.00005	mg/L	2016-03-29	2016-03-29	
Copper, total	**0.0055**	0.02	0.0002	mg/L	2016-03-29	2016-03-29	
Iron, total	**0.81**	N/A	0.01	mg/L	2016-03-29	2016-03-29	
Lead, total	**0.0005**	0.04	0.0001	mg/L	2016-03-29	2016-03-29	
Lithium, total	**0.0009**	N/A	0.0001	mg/L	2016-03-29	2016-03-29	
Magnesium, total	**1.56**	N/A	0.01	mg/L	2016-03-29	2016-03-29	
Manganese, total	**0.0258**	N/A	0.0002	mg/L	2016-03-29	2016-03-29	
Mercury, total	< 0.00002	0.001	0.00002	mg/L	2016-03-29	2016-03-30	
Molybdenum, total	**0.0005**	10	0.0001	mg/L	2016-03-29	2016-03-29	
Nickel, total	**0.0004**	0.25	0.0002	mg/L	2016-03-29	2016-03-29	

REPORTED TO	Morrison Hershfield Limited	**WORK ORDER**	6031702
PROJECT	Whistler Landfill - Spring/Fall	**REPORTED**	2016-04-06

Analyte	Result / *Recovery*	Standard / Guideline	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: SFC11 (6031702-12) [Water] Sampled: 2016-03-23 00:00, Continued							
Total Recoverable Metals, Continued							
Phosphorus, total	**0.06**	N/A	0.02	mg/L	2016-03-29	2016-03-29	
Potassium, total	**0.96**	N/A	0.02	mg/L	2016-03-29	2016-03-29	
Selenium, total	< 0.0005	0.01	0.0005	mg/L	2016-03-29	2016-03-29	
Silicon, total	**8.3**	N/A	0.5	mg/L	2016-03-29	2016-03-29	
Silver, total	< 0.00005	0.0005	0.00005	mg/L	2016-03-29	2016-03-29	
Sodium, total	**7.09**	N/A	0.02	mg/L	2016-03-29	2016-03-29	
Strontium, total	**0.078**	N/A	0.001	mg/L	2016-03-29	2016-03-29	
Sulfur, total	**3**	N/A	1	mg/L	2016-03-29	2016-03-29	
Tellurium, total	< 0.0002	N/A	0.0002	mg/L	2016-03-29	2016-03-29	
Thallium, total	< 0.00002	0.003	0.00002	mg/L	2016-03-29	2016-03-29	
Thorium, total	< 0.0001	N/A	0.0001	mg/L	2016-03-29	2016-03-29	
Tin, total	< 0.0002	N/A	0.0002	mg/L	2016-03-29	2016-03-29	
Titanium, total	**0.035**	1	0.005	mg/L	2016-03-29	2016-03-29	
Uranium, total	**0.00003**	3	0.00002	mg/L	2016-03-29	2016-03-29	
Vanadium, total	**0.003**	N/A	0.001	mg/L	2016-03-29	2016-03-29	
Zinc, total	**0.006**	0.075	0.004	mg/L	2016-03-29	2016-03-29	
Zirconium, total	**0.0004**	N/A	0.0001	mg/L	2016-03-29	2016-03-29	
Sample ID: TRIP BLANK (6031702-13) [Water] Sampled: 2016-03-23 00:00							
Anions							
Bromide	< 0.10	N/A	0.10	mg/L	N/A	2016-03-30	
Chloride	< 0.10	1500	0.10	mg/L	N/A	2016-03-30	
Fluoride	< 0.01	2	0.01	mg/L	N/A	2016-03-30	
Nitrite as N	< 0.001	0.2	0.001	mg/L	N/A	2016-03-24	
Nitrate+Nitrite as N	< 0.005	400	0.005	mg/L	N/A	2016-04-01	
Sulfate	< 1.0	1000	1.0	mg/L	N/A	2016-03-30	
General Parameters							
pH	**6.96**	N/A	0.01	pH units	2016-03-29	2016-03-29	HT2
Conductivity (EC)	< 2	N/A	2	µS/cm	N/A	2016-03-30	
Ammonia as N, Total	< 0.005	N/A	0.005	mg/L	N/A	2016-03-31	
Nitrogen, Total Kjeldahl	**0.07**	N/A	0.05	mg/L	2016-03-30	2016-03-31	
Alkalinity, Total as CaCO3	< 1	N/A	1	mg/L	N/A	2016-03-31	
Alkalinity, Phenolphthalein as CaCO3	< 1	N/A	1	mg/L	N/A	2016-03-31	
Alkalinity, Bicarbonate as CaCO3	< 1	N/A	1	mg/L	N/A	2016-03-31	
Alkalinity, Carbonate as CaCO3	< 1	N/A	1	mg/L	N/A	2016-03-31	
Alkalinity, Hydroxide as CaCO3	< 1	N/A	1	mg/L	N/A	2016-03-31	
Chemical Oxygen Demand	< 5	N/A	5	mg/L	N/A	2016-04-04	
Solids, Total Suspended	< 2	N/A	2	mg/L	N/A	2016-03-30	
Phosphorus, Total as P	< 0.002	N/A	0.002	mg/L	2016-03-31	2016-04-01	
Calculated Parameters							
Hardness, Total (as CaCO3)	< 0.50	N/A	0.50	mg/L	N/A	N/A	
Nitrate as N	< 0.005	400	0.005	mg/L	N/A	N/A	
Nitrogen, Total	**0.073**	N/A	0.050	mg/L	N/A	N/A	

REPORTED TO	Morrison Hershfield Limited	**WORK ORDER**	6031702
PROJECT	Whistler Landfill - Spring/Fall	**REPORTED**	2016-04-06

Analyte	Result / *Recovery*	Standard / Guideline	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: TRIP BLANK (6031702-13) [Water] Sampled: 2016-03-23 00:00, Continued							
Dissolved Metals							
Aluminum, dissolved	< 0.005	N/A	0.005	mg/L	N/A	2016-03-29	
Antimony, dissolved	< 0.0001	0.2	0.0001	mg/L	N/A	2016-03-29	
Arsenic, dissolved	< 0.0005	0.05	0.0005	mg/L	N/A	2016-03-29	
Barium, dissolved	< 0.005	5	0.005	mg/L	N/A	2016-03-29	
Beryllium, dissolved	< 0.0001	0.053	0.0001	mg/L	N/A	2016-03-29	
Bismuth, dissolved	< 0.0001	N/A	0.0001	mg/L	N/A	2016-03-29	
Boron, dissolved	< 0.004	50	0.004	mg/L	N/A	2016-03-29	
Cadmium, dissolved	< 0.00001	0.0001	0.00001	mg/L	N/A	2016-03-29	
Calcium, dissolved	< 0.2	N/A	0.2	mg/L	N/A	2016-03-29	
Chromium, dissolved	< 0.0005	N/A	0.0005	mg/L	N/A	2016-03-29	
Cobalt, dissolved	< 0.00005	0.04	0.00005	mg/L	N/A	2016-03-29	
Copper, dissolved	< 0.0002	0.02	0.0002	mg/L	N/A	2016-03-29	
Iron, dissolved	< 0.010	N/A	0.010	mg/L	N/A	2016-03-29	
Lead, dissolved	< 0.0001	0.04	0.0001	mg/L	N/A	2016-03-29	
Lithium, dissolved	< 0.0001	N/A	0.0001	mg/L	N/A	2016-03-29	
Magnesium, dissolved	< 0.01	N/A	0.01	mg/L	N/A	2016-03-29	
Manganese, dissolved	< 0.0002	N/A	0.0002	mg/L	N/A	2016-03-29	
Mercury, dissolved	< 0.00002	0.001	0.00002	mg/L	2016-03-29	2016-03-30	
Molybdenum, dissolved	< 0.0001	10	0.0001	mg/L	N/A	2016-03-29	
Nickel, dissolved	< 0.0002	0.25	0.0002	mg/L	N/A	2016-03-29	
Phosphorus, dissolved	< 0.02	N/A	0.02	mg/L	N/A	2016-03-29	
Potassium, dissolved	< 0.02	N/A	0.02	mg/L	N/A	2016-03-29	
Selenium, dissolved	< 0.0005	0.01	0.0005	mg/L	N/A	2016-03-29	
Silicon, dissolved	< 0.5	N/A	0.5	mg/L	N/A	2016-03-29	
Silver, dissolved	< 0.00005	0.0005	0.00005	mg/L	N/A	2016-03-29	
Sodium, dissolved	< 0.02	N/A	0.02	mg/L	N/A	2016-03-29	
Strontium, dissolved	< 0.001	N/A	0.001	mg/L	N/A	2016-03-29	
Sulfur, dissolved	< 1	N/A	1	mg/L	N/A	2016-03-29	
Tellurium, dissolved	< 0.0002	N/A	0.0002	mg/L	N/A	2016-03-29	
Thallium, dissolved	< 0.00002	0.003	0.00002	mg/L	N/A	2016-03-29	
Thorium, dissolved	< 0.0001	N/A	0.0001	mg/L	N/A	2016-03-29	
Tin, dissolved	< 0.0002	N/A	0.0002	mg/L	N/A	2016-03-29	
Titanium, dissolved	< 0.005	1	0.005	mg/L	N/A	2016-03-29	
Uranium, dissolved	< 0.00002	3	0.00002	mg/L	N/A	2016-03-29	
Vanadium, dissolved	< 0.001	N/A	0.001	mg/L	N/A	2016-03-29	
Zinc, dissolved	< 0.004	0.075	0.004	mg/L	N/A	2016-03-29	
Zirconium, dissolved	< 0.0001	N/A	0.0001	mg/L	N/A	2016-03-29	
BCMOE Aggregate Hydrocarbons							
VPHw	< 100	1500	100	µg/L	N/A	N/A	
EPHw10-19	< 250	5000	250	µg/L	2016-03-30	2016-04-03	
EPHw19-32	< 250	N/A	250	µg/L	2016-03-30	2016-04-03	
LEPHw	< 250	500	250	µg/L	N/A	N/A	
HEPHw	< 250	N/A	250	µg/L	N/A	N/A	
VHw (6-10)	< 100	15000	100	µg/L	N/A	2016-03-29	
Surrogate: 2-Methylnonane	*74*		*60-140*	%	*2016-03-30*	*2016-04-03*	

REPORTED TO	Morrison Hershfield Limited	**WORK ORDER**	6031702
PROJECT	Whistler Landfill - Spring/Fall	**REPORTED**	2016-04-06

Analyte	Result / *Recovery*	Standard / Guideline	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: TRIP BLANK (6031702-13) [Water] Sampled: 2016-03-23 00:00, Continued							
Polycyclic Aromatic Hydrocarbons (PAH)							
Acenaphthene	< 0.05	60	0.05	µg/L	2016-03-30	2016-04-02	
Acenaphthylene	< 0.20	N/A	0.20	µg/L	2016-03-30	2016-04-02	
Acridine	< 0.10	0.5	0.10	µg/L	2016-03-30	2016-04-02	
Anthracene	< 0.01	1	0.01	µg/L	2016-03-30	2016-04-02	
Benz (a) anthracene	< 0.01	1	0.01	µg/L	2016-03-30	2016-04-02	
Benzo (a) pyrene	< 0.01	0.1	0.01	µg/L	2016-03-30	2016-04-02	
Benzo (b) fluoranthene	< 0.05	N/A	0.05	µg/L	2016-03-30	2016-04-02	
Benzo (g,h,i) perylene	< 0.05	N/A	0.05	µg/L	2016-03-30	2016-04-02	
Benzo (k) fluoranthene	< 0.05	N/A	0.05	µg/L	2016-03-30	2016-04-02	
Chrysene	< 0.05	1	0.05	µg/L	2016-03-30	2016-04-02	
Dibenz (a,h) anthracene	< 0.05	N/A	0.05	µg/L	2016-03-30	2016-04-02	
Fluoranthene	< 0.03	2	0.03	µg/L	2016-03-30	2016-04-02	
Fluorene	< 0.05	120	0.05	µg/L	2016-03-30	2016-04-02	
Indeno (1,2,3-cd) pyrene	< 0.05	N/A	0.05	µg/L	2016-03-30	2016-04-02	
Naphthalene	< 0.20	10	0.20	µg/L	2016-03-30	2016-04-02	
Phenanthrene	< 0.10	3	0.10	µg/L	2016-03-30	2016-04-02	
Pyrene	< 0.02	0.2	0.02	µg/L	2016-03-30	2016-04-02	
Quinoline	< 0.10	34	0.10	µg/L	2016-03-30	2016-04-02	
Surrogate: Acridine-d9	*101*		*60-140*	%	*2016-03-30*	*2016-04-02*	
Surrogate: Naphthalene-d8	*79*		*60-140*	%	*2016-03-30*	*2016-04-02*	
Surrogate: Perylene-d12	*127*		*60-140*	%	*2016-03-30*	*2016-04-02*	
Volatile Organic Compounds (VOC)							
Acetone	< 10.0	N/A	10.0	µg/L	N/A	2016-03-29	
Benzene	< 0.5	1000	0.5	µg/L	N/A	2016-03-29	
Bromodichloromethane	< 1.0	N/A	1.0	µg/L	N/A	2016-03-29	
Bromoform	< 1.0	N/A	1.0	µg/L	N/A	2016-03-29	
Bromomethane	< 2.0	N/A	2.0	µg/L	N/A	2016-03-29	
2-Butanone (MEK)	< 5.0	N/A	5.0	µg/L	N/A	2016-03-29	
Carbon tetrachloride	< 1.0	130	1.0	µg/L	N/A	2016-03-29	
Chlorobenzene	< 1.0	13	1.0	µg/L	N/A	2016-03-29	
Chloroethane	< 2.0	N/A	2.0	µg/L	N/A	2016-03-29	
Chloroform	< 1.0	20	1.0	µg/L	N/A	2016-03-29	
Chloromethane	< 2.0	N/A	2.0	µg/L	N/A	2016-03-29	
Dibromochloromethane	< 1.0	N/A	1.0	µg/L	N/A	2016-03-29	
Dibromomethane	< 1.0	N/A	1.0	µg/L	N/A	2016-03-29	
1,3-Dichlorobenzene	< 1.0	1500	1.0	µg/L	N/A	2016-03-29	
1,4-Dichlorobenzene	< 1.0	260	1.0	µg/L	N/A	2016-03-29	
1,1-Dichloroethane	< 1.0	N/A	1.0	µg/L	N/A	2016-03-29	
1,2-Dichloroethane	< 1.0	1000	1.0	µg/L	N/A	2016-03-29	
1,1-Dichloroethene	< 1.0	N/A	1.0	µg/L	N/A	2016-03-29	
cis-1,2-Dichloroethene	< 1.0	N/A	1.0	µg/L	N/A	2016-03-29	
trans-1,2-Dichloroethene	< 1.0	N/A	1.0	µg/L	N/A	2016-03-29	
1,2-Dichloropropane	< 1.0	N/A	1.0	µg/L	N/A	2016-03-29	
cis-1,3-Dichloropropene	< 1.0	N/A	1.0	µg/L	N/A	2016-03-29	
trans-1,3-Dichloropropene	< 1.0	N/A	1.0	µg/L	N/A	2016-03-29	

REPORTED TO	Morrison Hershfield Limited	**WORK ORDER**	6031702
PROJECT	Whistler Landfill - Spring/Fall	**REPORTED**	2016-04-06

Analyte	Result / *Recovery*	Standard / Guideline	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: TRIP BLANK (6031702-13) [Water] Sampled: 2016-03-23 00:00, Continued							
Volatile Organic Compounds (VOC), Continued							
Ethylbenzene	< 1.0	2000	1.0	µg/L	N/A	2016-03-29	
Methyl tert-butyl ether	< 1.0	34000	1.0	µg/L	N/A	2016-03-29	
Methylene chloride	< 3.0	980	3.0	µg/L	N/A	2016-03-29	
4-Methyl-2-Pentanone (MIBK)	< 10.0	N/A	10.0	µg/L	N/A	2016-03-29	
Styrene	< 1.0	720	1.0	µg/L	N/A	2016-03-29	
1,1,1,2-Tetrachloroethane	< 1.0	N/A	1.0	µg/L	N/A	2016-03-29	
1,1,2,2-Tetrachloroethane	< 1.0	1100	1.0	µg/L	N/A	2016-03-29	
Tetrachloroethene	< 1.0	N/A	1.0	µg/L	N/A	2016-03-29	
Toluene	< 1.0	390	1.0	µg/L	N/A	2016-03-29	
1,1,1-Trichloroethane	< 1.0	N/A	1.0	µg/L	N/A	2016-03-29	
1,1,2-Trichloroethane	< 1.0	N/A	1.0	µg/L	N/A	2016-03-29	
Trichloroethene	< 1.0	200	1.0	µg/L	N/A	2016-03-29	
Trichlorofluoromethane	< 1.0	N/A	1.0	µg/L	N/A	2016-03-29	
Vinyl chloride	< 2.0	N/A	2.0	µg/L	N/A	2016-03-29	
m,p-Xylene	< 1.0	N/A	1.0	µg/L	N/A	2016-03-29	
o-Xylene	< 1.0	N/A	1.0	µg/L	N/A	2016-03-29	
Xylenes (total)	< 2.0	N/A	2.0	µg/L	N/A	2016-03-29	
1,2-Dibromoethane	< 0.3	N/A	0.3	µg/L	N/A	2016-03-29	
1,2-Dichlorobenzene	< 0.5	7	0.5	µg/L	N/A	2016-03-29	
Surrogate: Toluene-d8	*103*		*70-130*	%	*N/A*	*2016-03-29*	
Surrogate: 4-Bromofluorobenzene	*96*		*70-130*	%	*N/A*	*2016-03-29*	
Surrogate: 1,4-Dichlorobenzene-d4	*94*		*70-130*	%	*N/A*	*2016-03-29*	

Sample / Analysis Qualifiers:

F1 The sample was not field-filtered and was therefore filtered through a 0.45 µm membrane in the laboratory and preserved with HNO3 prior to analysis for dissolved metals.

HT2 The 15 minute recommended holding time (from sampling to analysis) has been exceeded - field analysis is recommended.

REPORTED TO	Morrison Hershfield Limited	**WORK ORDER**	6031702
PROJECT	Whistler Landfill - Spring/Fall	**REPORTED**	2016-04-06

The following section displays the quality control (QC) data that is associated with your sample data. Groups of samples are prepared in "batches" and analyzed in conjunction with QC samples that ensure your data is of the highest quality. Common QC types include:

- **Method Blank (Blk)**: Laboratory reagent water is carried through sample preparation and analysis steps. Method Blanks indicate that results are free from contamination, i.e. not biased high from sources such as the sample container or the laboratory environment
- **Duplicate (Dup)**: Preparation and analysis of a replicate aliquot of a sample. Duplicates provide a measure of the analytical method's precision, i.e. how reproducible a result is. Duplicates are only reported if they are associated with your sample data.
- **Blank Spike (BS)**: A known amount of standard is carried through sample preparation and analysis steps. Blank Spikes, also known as laboratory control samples (LCS), are prepared from a different source of standard than used for the calibration. They ensure that the calibration is acceptable (i.e. not biased high or low) and also provide a measure of the analytical method's accuracy (i.e. closeness of the result to a target value).
- **Standard Reference Material (SRM)**: A material of similar matrix to the samples, externally certified for the parameter(s) listed. Standard Reference Materials ensure that the preparation steps in the method are adequate to achieve acceptable recoveries of the parameter(s) tested.

Each QC type is analyzed at a 5-10% frequency, i.e. one blank/duplicate/spike for every 10 samples. For all types of QC, the specified recovery (% Rec) and relative percent difference (RPD) limits are derived from long-term method performance averages and/or prescribed by the reference method.

Analyte	Result	MRL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Notes
Anions, Batch B6C1464										
Blank (B6C1464-BLK1)				Prepared: 2016-04-01, Analyzed: 2016-04-01						
Nitrate+Nitrite as N	< 0.005	0.005	mg/L							
Blank (B6C1464-BLK2)				Prepared: 2016-04-01, Analyzed: 2016-04-01						
Nitrate+Nitrite as N	< 0.005	0.005	mg/L							
Blank (B6C1464-BLK3)				Prepared: 2016-04-01, Analyzed: 2016-04-01						
Nitrate+Nitrite as N	< 0.005	0.005	mg/L							
LCS (B6C1464-BS1)				Prepared: 2016-04-01, Analyzed: 2016-04-01						
Nitrate+Nitrite as N	0.519	0.005	mg/L	0.500		104	91-108			
LCS (B6C1464-BS2)				Prepared: 2016-04-01, Analyzed: 2016-04-01						
Nitrate+Nitrite as N	0.514	0.005	mg/L	0.500		103	91-108			
LCS (B6C1464-BS3)				Prepared: 2016-04-01, Analyzed: 2016-04-01						
Nitrate+Nitrite as N	0.509	0.005	mg/L	0.500		102	91-108			
Duplicate (B6C1464-DUP1)		**Source: 6031702-08**		Prepared: 2016-04-01, Analyzed: 2016-04-01						
Nitrate+Nitrite as N	0.174	0.005	mg/L		0.173			< 1	15	
Matrix Spike (B6C1464-MS1)		**Source: 6031702-08**		Prepared: 2016-04-01, Analyzed: 2016-04-01						
Nitrate+Nitrite as N	0.290	0.005	mg/L	0.125	0.173	94	81-118			
Anions, Batch B6C1480										
Blank (B6C1480-BLK1)				Prepared: 2016-03-24, Analyzed: 2016-03-24						
Nitrite as N	< 0.005	0.005	mg/L							
LCS (B6C1480-BS1)				Prepared: 2016-03-24, Analyzed: 2016-03-24						
Nitrite as N	0.049	0.005	mg/L	0.0500		99	90-110			
Duplicate (B6C1480-DUP1)		**Source: 6031702-02**		Prepared: 2016-03-24, Analyzed: 2016-03-24						
Nitrite as N	< 0.005	0.005	mg/L		< 0.005				20	

REPORTED TO	Morrison Hershfield Limited	**WORK ORDER**	6031702
PROJECT	Whistler Landfill - Spring/Fall	**REPORTED**	2016-04-06

Analyte	Result	MRL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Notes
Anions, Batch B6C1589										
Blank (B6C1589-BLK1)				Prepared: 2016-03-31, Analyzed: 2016-03-31						
Bromide	< 0.10	0.10	mg/L							
Chloride	< 0.10	0.10	mg/L							
Fluoride	< 0.01	0.01	mg/L							
Sulfate	< 1.0	1.0	mg/L							
Blank (B6C1589-BLK2)				Prepared: 2016-03-31, Analyzed: 2016-03-31						
Bromide	< 0.10	0.10	mg/L							
Chloride	< 0.10	0.10	mg/L							
Fluoride	< 0.01	0.01	mg/L							
Sulfate	< 1.0	1.0	mg/L							
LCS (B6C1589-BS1)				Prepared: 2016-03-31, Analyzed: 2016-03-31						
Bromide	4.21	0.10	mg/L	4.00		105	85-115			
Chloride	16.6	0.10	mg/L	16.0		104	90-110			
Fluoride	4.12	0.01	mg/L	4.00		103	88-108			
Sulfate	16.3	1.0	mg/L	16.0		102	91-109			
LCS (B6C1589-BS2)				Prepared: 2016-03-31, Analyzed: 2016-03-31						
Bromide	4.26	0.10	mg/L	4.00		106	85-115			
Chloride	16.9	0.10	mg/L	16.0		105	90-110			
Fluoride	4.14	0.01	mg/L	4.00		104	88-108			
Sulfate	16.8	1.0	mg/L	16.0		105	91-109			
Anions, Batch B6C1611										
Blank (B6C1611-BLK1)				Prepared: 2016-03-30, Analyzed: 2016-03-30						
Nitrite as N	< 0.005	0.005	mg/L							
LCS (B6C1611-BS1)				Prepared: 2016-03-30, Analyzed: 2016-03-30						
Nitrite as N	0.049	0.005	mg/L	0.0500		98	90-110			
Duplicate (B6C1611-DUP1)			**Source: 6031702-11**	Prepared: 2016-03-30, Analyzed: 2016-03-30						
Nitrite as N	0.010	0.005	mg/L		0.011				20	
Matrix Spike (B6C1611-MS1)			**Source: 6031702-11**	Prepared: 2016-03-30, Analyzed: 2016-03-30						
Nitrite as N	0.054	0.005	mg/L	0.0500	0.011	87	80-120			
Anions, Batch B6C1641										
Blank (B6C1641-BLK1)				Prepared: 2016-03-31, Analyzed: 2016-03-31						
Bromide	< 0.10	0.10	mg/L							
Chloride	< 0.10	0.10	mg/L							
Fluoride	< 0.01	0.01	mg/L							
Sulfate	< 1.0	1.0	mg/L							
Blank (B6C1641-BLK2)				Prepared: 2016-04-01, Analyzed: 2016-04-01						
Bromide	< 0.10	0.10	mg/L							
Chloride	< 0.10	0.10	mg/L							
Fluoride	< 0.01	0.01	mg/L							
Sulfate	< 1.0	1.0	mg/L							
LCS (B6C1641-BS1)				Prepared: 2016-03-31, Analyzed: 2016-03-31						
Bromide	4.21	0.10	mg/L	4.00		105	85-115			
Chloride	16.8	0.10	mg/L	16.0		105	90-110			
Fluoride	4.15	0.01	mg/L	4.00		104	88-108			
Sulfate	16.7	1.0	mg/L	16.0		104	91-109			

REPORTED TO Morrison Hershfield Limited
PROJECT Whistler Landfill - Spring/Fall

WORK ORDER 6031702
REPORTED 2016-04-06

Analyte	Result	MRL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Notes
Anions, Batch B6C1641, Continued										
LCS (B6C1641-BS2)				Prepared: 2016-04-01, Analyzed: 2016-04-01						
Bromide	4.21	0.10	mg/L	4.00		105	85-115			
Chloride	16.8	0.10	mg/L	16.0		105	90-110			
Fluoride	4.12	0.01	mg/L	4.00		103	88-108			
Sulfate	16.7	1.0	mg/L	16.0		104	91-109			
BCMOE Aggregate Hydrocarbons, Batch B6C1491										
Blank (B6C1491-BLK1)				Prepared: 2016-03-27, Analyzed: 2016-03-27						
VHw (6-10)	< 100	100	µg/L							
LCS (B6C1491-BS2)				Prepared: 2016-03-27, Analyzed: 2016-03-27						
VHw (6-10)	3500	100	µg/L	2880		122	80-120			SPK
BCMOE Aggregate Hydrocarbons, Batch B6C1551										
Blank (B6C1551-BLK1)				Prepared: 2016-03-30, Analyzed: 2016-04-01						
EPHw10-19	< 250	250	µg/L							
EPHw19-32	< 250	250	µg/L							
Surrogate: 2-Methylnonane	*320*		*µg/L*	444		*72*	*60-140*			
LCS (B6C1551-BS2)				Prepared: 2016-03-30, Analyzed: 2016-04-01						
EPHw10-19	11500	250	µg/L	15400		75	70-130			
EPHw19-32	16600	250	µg/L	22200		75	70-130			
Surrogate: 2-Methylnonane	*334*		*µg/L*	444		*75*	*60-140*			
BCMOE Aggregate Hydrocarbons, Batch B6C1608										
Blank (B6C1608-BLK1)				Prepared: 2016-03-30, Analyzed: 2016-04-03						
EPHw10-19	< 250	250	µg/L							
EPHw19-32	< 250	250	µg/L							
Surrogate: 2-Methylnonane	*333*		*µg/L*	444		*75*	*60-140*			
LCS (B6C1608-BS2)				Prepared: 2016-03-30, Analyzed: 2016-04-03						
EPHw10-19	13300	250	µg/L	15400		86	70-130			
EPHw19-32	28900	250	µg/L	22200		130	70-130			
Surrogate: 2-Methylnonane	*380*		*µg/L*	444		*86*	*60-140*			
BCMOE Aggregate Hydrocarbons, Batch B6D0044										
Blank (B6D0044-BLK1)				Prepared: 2016-04-01, Analyzed: 2016-04-01						
VHw (6-10)	< 100	100	µg/L							
LCS (B6D0044-BS2)				Prepared: 2016-04-01, Analyzed: 2016-04-01						
VHw (6-10)	3240	100	µg/L	2880		113	80-120			
Dissolved Metals, Batch B6C1509										
Blank (B6C1509-BLK1)				Prepared: 2016-03-29, Analyzed: 2016-03-30						
Mercury, dissolved	< 0.00002	0.00002	mg/L							
Reference (B6C1509-SRM1)				Prepared: 2016-03-29, Analyzed: 2016-03-30						
Mercury, dissolved	0.00336	0.00002	mg/L	0.00456		74	50-150			
Dissolved Metals, Batch B6C1530										

REPORTED TO	Morrison Hershfield Limited	**WORK ORDER**	6031702
PROJECT	Whistler Landfill - Spring/Fall	**REPORTED**	2016-04-06

Analyte	Result	MRL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Notes
Dissolved Metals, Batch B6C1530, Continued										
Blank (B6C1530-BLK1)				Prepared: 2016-03-29, Analyzed: 2016-03-29						
Aluminum, dissolved	< 0.005	0.005	mg/L							
Antimony, dissolved	< 0.0001	0.0001	mg/L							
Arsenic, dissolved	< 0.0005	0.0005	mg/L							
Barium, dissolved	< 0.005	0.005	mg/L							
Beryllium, dissolved	< 0.0001	0.0001	mg/L							
Bismuth, dissolved	< 0.0001	0.0001	mg/L							
Boron, dissolved	< 0.004	0.004	mg/L							
Cadmium, dissolved	< 0.00001	0.00001	mg/L							
Calcium, dissolved	< 0.2	0.2	mg/L							
Chromium, dissolved	< 0.0005	0.0005	mg/L							
Cobalt, dissolved	< 0.00005	0.00005	mg/L							
Copper, dissolved	< 0.0002	0.0002	mg/L							
Iron, dissolved	< 0.010	0.010	mg/L							
Lead, dissolved	< 0.0001	0.0001	mg/L							
Lithium, dissolved	< 0.0001	0.0001	mg/L							
Magnesium, dissolved	< 0.01	0.01	mg/L							
Manganese, dissolved	< 0.0002	0.0002	mg/L							
Molybdenum, dissolved	< 0.0001	0.0001	mg/L							
Nickel, dissolved	< 0.0002	0.0002	mg/L							
Phosphorus, dissolved	< 0.02	0.02	mg/L							
Potassium, dissolved	< 0.02	0.02	mg/L							
Selenium, dissolved	< 0.0005	0.0005	mg/L							
Silicon, dissolved	< 0.5	0.5	mg/L							
Silver, dissolved	< 0.00005	0.00005	mg/L							
Sodium, dissolved	< 0.02	0.02	mg/L							
Strontium, dissolved	< 0.001	0.001	mg/L							
Sulfur, dissolved	< 1	1	mg/L							
Tellurium, dissolved	< 0.0002	0.0002	mg/L							
Thallium, dissolved	< 0.00002	0.00002	mg/L							
Thorium, dissolved	< 0.0001	0.0001	mg/L							
Tin, dissolved	< 0.0002	0.0002	mg/L							
Titanium, dissolved	< 0.005	0.005	mg/L							
Uranium, dissolved	< 0.00002	0.00002	mg/L							
Vanadium, dissolved	< 0.001	0.001	mg/L							
Zinc, dissolved	< 0.004	0.004	mg/L							
Zirconium, dissolved	< 0.0001	0.0001	mg/L							
Duplicate (B6C1530-DUP1)				**Source: 6031702-05**	Prepared: 2016-03-29, Analyzed: 2016-03-29					
Aluminum, dissolved	0.105	0.005	mg/L		0.104			2	11	
Antimony, dissolved	< 0.0001	0.0001	mg/L		0.0001				44	
Arsenic, dissolved	< 0.0005	0.0005	mg/L		< 0.0005				8	
Barium, dissolved	0.061	0.005	mg/L		0.064			4	7	
Beryllium, dissolved	< 0.0001	0.0001	mg/L		< 0.0001				14	
Bismuth, dissolved	< 0.0001	0.0001	mg/L		< 0.0001				20	
Boron, dissolved	0.008	0.004	mg/L		0.009				13	
Cadmium, dissolved	0.00036	0.00001	mg/L		0.00035			3	27	
Calcium, dissolved	54.7	0.2	mg/L		54.6			< 1	8	
Chromium, dissolved	< 0.0005	0.0005	mg/L		< 0.0005				14	
Cobalt, dissolved	0.00099	0.00005	mg/L		0.00095			4	10	
Copper, dissolved	0.0034	0.0002	mg/L		0.0034			< 1	28	
Iron, dissolved	0.015	0.010	mg/L		0.021				14	
Lead, dissolved	< 0.0001	0.0001	mg/L		< 0.0001				26	
Lithium, dissolved	0.0001	0.0001	mg/L		0.0001				14	
Magnesium, dissolved	7.22	0.01	mg/L		7.13			1	6	
Manganese, dissolved	0.500	0.0002	mg/L		0.496			< 1	9	
Molybdenum, dissolved	0.0001	0.0001	mg/L		0.0001				19	
Nickel, dissolved	0.0031	0.0002	mg/L		0.0031			2	21	

REPORTED TO Morrison Hershfield Limited
PROJECT Whistler Landfill - Spring/Fall

WORK ORDER 6031702
REPORTED 2016-04-06

Analyte	Result	MRL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Notes
Dissolved Metals, Batch B6C1530, Continued										
Duplicate (B6C1530-DUP1), Continued		**Source: 6031702-05**		Prepared: 2016-03-29, Analyzed: 2016-03-29						
Phosphorus, dissolved	< 0.02	0.02	mg/L		< 0.02				14	
Potassium, dissolved	4.55	0.02	mg/L		4.46			2	8	
Selenium, dissolved	< 0.0005	0.0005	mg/L		< 0.0005				36	
Silicon, dissolved	8.7	0.5	mg/L		8.9			2	12	
Silver, dissolved	< 0.00005	0.00005	mg/L		0.00005				20	
Sodium, dissolved	99.9	0.02	mg/L		96.7			3	6	
Strontium, dissolved	0.617	0.001	mg/L		0.615			< 1	6	
Sulfur, dissolved	39	1	mg/L		38			< 1	26	
Tellurium, dissolved	< 0.0002	0.0002	mg/L		< 0.0002				20	
Thallium, dissolved	0.00005	0.00002	mg/L		0.00005				13	
Thorium, dissolved	< 0.0001	0.0001	mg/L		< 0.0001				30	
Tin, dissolved	< 0.0002	0.0002	mg/L		< 0.0002				6	
Titanium, dissolved	< 0.005	0.005	mg/L		< 0.005				20	
Uranium, dissolved	0.00003	0.00002	mg/L		0.00003				14	
Vanadium, dissolved	< 0.001	0.001	mg/L		< 0.001				20	
Zinc, dissolved	0.007	0.004	mg/L		0.007				11	
Zirconium, dissolved	< 0.0001	0.0001	mg/L		< 0.0001				36	
Reference (B6C1530-SRM1)				Prepared: 2016-03-29, Analyzed: 2016-03-29						
Aluminum, dissolved	0.225	0.005	mg/L	0.233		97	58-142			
Antimony, dissolved	0.0490	0.0001	mg/L	0.0430		114	75-125			
Arsenic, dissolved	0.452	0.0005	mg/L	0.438		103	81-119			
Barium, dissolved	3.38	0.005	mg/L	3.35		101	83-117			
Beryllium, dissolved	0.213	0.0001	mg/L	0.213		100	80-120			
Boron, dissolved	1.76	0.004	mg/L	1.74		101	74-117			
Cadmium, dissolved	0.228	0.00001	mg/L	0.224		102	83-117			
Calcium, dissolved	8.2	0.2	mg/L	7.69		107	76-124			
Chromium, dissolved	0.455	0.0005	mg/L	0.437		104	81-119			
Cobalt, dissolved	0.136	0.00005	mg/L	0.128		106	76-124			
Copper, dissolved	0.914	0.0002	mg/L	0.844		108	84-116			
Iron, dissolved	1.33	0.010	mg/L	1.29		103	74-126			
Lead, dissolved	0.117	0.0001	mg/L	0.112		104	72-128			
Lithium, dissolved	0.107	0.0001	mg/L	0.104		103	60-140			
Magnesium, dissolved	7.14	0.01	mg/L	6.92		103	81-119			
Manganese, dissolved	0.350	0.0002	mg/L	0.345		102	84-116			
Molybdenum, dissolved	0.444	0.0001	mg/L	0.426		104	83-117			
Nickel, dissolved	0.878	0.0002	mg/L	0.840		105	74-126			
Phosphorus, dissolved	0.49	0.02	mg/L	0.495		99	68-132			
Potassium, dissolved	3.18	0.02	mg/L	3.19		100	74-126			
Selenium, dissolved	0.0377	0.0005	mg/L	0.0331		114	70-130			
Sodium, dissolved	19.3	0.02	mg/L	19.1		101	72-128			
Strontium, dissolved	0.905	0.001	mg/L	0.916		99	84-113			
Thallium, dissolved	0.0402	0.00002	mg/L	0.0393		102	57-143			
Uranium, dissolved	0.268	0.00002	mg/L	0.266		101	85-115			
Vanadium, dissolved	0.847	0.001	mg/L	0.869		98	87-113			
Zinc, dissolved	0.915	0.004	mg/L	0.881		104	72-128			
Dissolved Metals, Batch B6D0004										
Blank (B6D0004-BLK1)				Prepared: 2016-04-01, Analyzed: 2016-04-01						
Mercury, dissolved	< 0.00002	0.0002	mg/L							
Aluminum, dissolved	< 0.005	0.005	mg/L							
Antimony, dissolved	< 0.0001	0.0001	mg/L							
Arsenic, dissolved	< 0.0005	0.0005	mg/L							
Barium, dissolved	< 0.005	0.005	mg/L							
Beryllium, dissolved	< 0.0001	0.0001	mg/L							

REPORTED TO	Morrison Hershfield Limited	**WORK ORDER**	6031702
PROJECT	Whistler Landfill - Spring/Fall	**REPORTED**	2016-04-06

Analyte	Result	MRL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Notes
Dissolved Metals, Batch B6D0004, Continued										
Blank (B6D0004-BLK1), Continued				Prepared: 2016-04-01, Analyzed: 2016-04-01						
Bismuth, dissolved	< 0.0001	0.0001	mg/L							
Boron, dissolved	< 0.004	0.004	mg/L							
Cadmium, dissolved	< 0.00001	0.00001	mg/L							
Calcium, dissolved	< 0.2	0.2	mg/L							
Chromium, dissolved	< 0.0005	0.0005	mg/L							
Cobalt, dissolved	< 0.00005	0.00005	mg/L							
Copper, dissolved	< 0.0002	0.0002	mg/L							
Iron, dissolved	< 0.010	0.010	mg/L							
Lead, dissolved	< 0.0001	0.0001	mg/L							
Lithium, dissolved	< 0.0001	0.0001	mg/L							
Magnesium, dissolved	< 0.01	0.01	mg/L							
Manganese, dissolved	< 0.0002	0.0002	mg/L							
Molybdenum, dissolved	< 0.0001	0.0001	mg/L							
Nickel, dissolved	< 0.0002	0.0002	mg/L							
Phosphorus, dissolved	< 0.02	0.02	mg/L							
Potassium, dissolved	< 0.02	0.02	mg/L							
Selenium, dissolved	< 0.0005	0.0005	mg/L							
Silicon, dissolved	< 0.5	0.5	mg/L							
Silver, dissolved	< 0.00005	0.00005	mg/L							
Sodium, dissolved	< 0.02	0.02	mg/L							
Strontium, dissolved	< 0.001	0.001	mg/L							
Sulfur, dissolved	< 1	1	mg/L							
Tellurium, dissolved	< 0.0002	0.0002	mg/L							
Thallium, dissolved	< 0.00002	0.00002	mg/L							
Thorium, dissolved	< 0.0001	0.0001	mg/L							
Tin, dissolved	< 0.0002	0.0002	mg/L							
Titanium, dissolved	< 0.005	0.005	mg/L							
Uranium, dissolved	< 0.00002	0.00002	mg/L							
Vanadium, dissolved	< 0.001	0.001	mg/L							
Zinc, dissolved	< 0.004	0.004	mg/L							
Zirconium, dissolved	< 0.0001	0.0001	mg/L							
Reference (B6D0004-SRM1)				Prepared: 2016-04-01, Analyzed: 2016-04-01						
Aluminum, dissolved	0.179	0.005	mg/L	0.233		77	58-142			
Antimony, dissolved	0.0466	0.0001	mg/L	0.0430		108	75-125			
Arsenic, dissolved	0.391	0.0005	mg/L	0.438		89	81-119			
Barium, dissolved	3.31	0.005	mg/L	3.35		99	83-117			
Beryllium, dissolved	0.181	0.0001	mg/L	0.213		85	80-120			
Boron, dissolved	1.45	0.004	mg/L	1.74		83	74-117			
Cadmium, dissolved	0.216	0.00001	mg/L	0.224		96	83-117			
Calcium, dissolved	7.0	0.2	mg/L	7.69		91	76-124			
Chromium, dissolved	0.374	0.0005	mg/L	0.437		86	81-119			
Cobalt, dissolved	0.114	0.00005	mg/L	0.128		89	76-124			
Copper, dissolved	0.782	0.0002	mg/L	0.844		93	84-116			
Iron, dissolved	1.11	0.010	mg/L	1.29		86	74-126			
Lead, dissolved	0.112	0.0001	mg/L	0.112		100	72-128			
Lithium, dissolved	0.0916	0.0001	mg/L	0.104		88	60-140			
Magnesium, dissolved	5.99	0.01	mg/L	6.92		87	81-119			
Manganese, dissolved	0.295	0.0002	mg/L	0.345		85	84-116			
Molybdenum, dissolved	0.408	0.0001	mg/L	0.426		96	83-117			
Nickel, dissolved	0.747	0.0002	mg/L	0.840		89	74-126			
Phosphorus, dissolved	0.40	0.02	mg/L	0.495		80	68-132			
Potassium, dissolved	2.39	0.02	mg/L	3.19		75	74-126			
Selenium, dissolved	0.0348	0.0005	mg/L	0.0331		105	70-130			
Sodium, dissolved	14.4	0.02	mg/L	19.1		75	72-128			
Strontium, dissolved	0.829	0.001	mg/L	0.916		91	84-113			
Thallium, dissolved	0.0385	0.00002	mg/L	0.0393		98	57-143			

REPORTED TO Morrison Hershfield Limited
PROJECT Whistler Landfill - Spring/Fall

WORK ORDER 6031702
REPORTED 2016-04-06

Analyte	Result	MRL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Notes
Dissolved Metals, Batch B6D0004, Continued										
Reference (B6D0004-SRM1), Continued				Prepared: 2016-04-01, Analyzed: 2016-04-01						
Uranium, dissolved	0.265	0.00002	mg/L	0.266		100	85-115			
Vanadium, dissolved	0.786	0.001	mg/L	0.869		90	87-113			
Zinc, dissolved	0.799	0.004	mg/L	0.881		91	72-128			
General Parameters, Batch B6C1446										
Reference (B6C1446-SRM1)				Prepared: 2016-03-24, Analyzed: 2016-03-29						
pH	7.07	0.01	pH units	7.00		101	98-102			
Reference (B6C1446-SRM2)				Prepared: 2016-03-24, Analyzed: 2016-03-29						
pH	7.06	0.01	pH units	7.00		101	98-102			
General Parameters, Batch B6C1507										
Blank (B6C1507-BLK1)				Prepared: 2016-03-30, Analyzed: 2016-03-30						
Solids, Total Suspended	< 1	2	mg/L							
Blank (B6C1507-BLK2)				Prepared: 2016-03-30, Analyzed: 2016-03-30						
Solids, Total Suspended	< 1	2	mg/L							
LCS (B6C1507-BS1)				Prepared: 2016-03-30, Analyzed: 2016-03-30						
Solids, Total Suspended	55	2	mg/L	59.0		93	83-107			
LCS (B6C1507-BS2)				Prepared: 2016-03-30, Analyzed: 2016-03-30						
Solids, Total Suspended	53	2	mg/L	56.6		94	83-107			
General Parameters, Batch B6C1574										
Blank (B6C1574-BLK1)				Prepared: 2016-03-30, Analyzed: 2016-03-30						
Conductivity (EC)	< 2	2	µS/cm							
LCS (B6C1574-BS1)				Prepared: 2016-03-30, Analyzed: 2016-03-30						
Conductivity (EC)	154	2	µS/cm	147		105	88-112			
Duplicate (B6C1574-DUP1)			**Source: 6031702-09**	Prepared: 2016-03-30, Analyzed: 2016-03-30						
Conductivity (EC)	334	2	µS/cm		332			< 1	7	
Reference (B6C1574-SRM1)				Prepared: 2016-03-30, Analyzed: 2016-03-30						
Conductivity (EC)	506	2	µS/cm	500		101	90-110			
General Parameters, Batch B6C1605										
Blank (B6C1605-BLK1)				Prepared: 2016-03-30, Analyzed: 2016-03-31						
Nitrogen, Total Kjeldahl	< 0.05	0.05	mg/L							
Blank (B6C1605-BLK2)				Prepared: 2016-03-30, Analyzed: 2016-03-31						
Nitrogen, Total Kjeldahl	< 0.05	0.05	mg/L							
LCS (B6C1605-BS1)				Prepared: 2016-03-30, Analyzed: 2016-03-31						
Nitrogen, Total Kjeldahl	10.2	0.05	mg/L	10.0		102	80-120			
LCS (B6C1605-BS2)				Prepared: 2016-03-30, Analyzed: 2016-03-31						
Nitrogen, Total Kjeldahl	10.9	0.05	mg/L	10.0		109	80-120			
Duplicate (B6C1605-DUP1)			**Source: 6031702-01**	Prepared: 2016-03-30, Analyzed: 2016-03-31						
Nitrogen, Total Kjeldahl	5.59	0.05	mg/L		5.56			< 1	16	

REPORTED TO Morrison Hershfield Limited
PROJECT Whistler Landfill - Spring/Fall

WORK ORDER 6031702
REPORTED 2016-04-06

Analyte	Result	MRL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Notes
General Parameters, Batch B6C1605, Continued										
Matrix Spike (B6C1605-MS1)	**Source: 6031702-01**			Prepared: 2016-03-30, Analyzed: 2016-03-31						
Nitrogen, Total Kjeldahl	15.9	0.05	mg/L	10.0	5.56	103	65-135			
General Parameters, Batch B6C1616										
Blank (B6C1616-BLK1)				Prepared: 2016-03-31, Analyzed: 2016-03-31						
Ammonia as N, Total	< 0.005	0.005	mg/L							
Blank (B6C1616-BLK2)				Prepared: 2016-03-31, Analyzed: 2016-03-31						
Ammonia as N, Total	< 0.005	0.005	mg/L							
LCS (B6C1616-BS1)				Prepared: 2016-03-31, Analyzed: 2016-03-31						
Ammonia as N, Total	1.00	0.005	mg/L	1.00		100	86-111			
LCS (B6C1616-BS2)				Prepared: 2016-03-31, Analyzed: 2016-03-31						
Ammonia as N, Total	0.998	0.005	mg/L	1.00		100	86-111			
Duplicate (B6C1616-DUP1)	**Source: 6031702-03**			Prepared: 2016-03-31, Analyzed: 2016-03-31						
Ammonia as N, Total	0.458	0.005	mg/L		0.455			< 1	15	
Matrix Spike (B6C1616-MS1)	**Source: 6031702-03**			Prepared: 2016-03-31, Analyzed: 2016-03-31						
Ammonia as N, Total	0.688	0.005	mg/L	0.250	0.455	93	76-121			
General Parameters, Batch B6C1629										
Blank (B6C1629-BLK1)				Prepared: 2016-03-30, Analyzed: 2016-03-30						
Solids, Total Suspended	< 1	2	mg/L							
LCS (B6C1629-BS1)				Prepared: 2016-03-30, Analyzed: 2016-03-30						
Solids, Total Suspended	56	2	mg/L	57.0		98	83-107			
Duplicate (B6C1629-DUP1)	**Source: 6031702-11**			Prepared: 2016-03-30, Analyzed: 2016-03-30						
Solids, Total Suspended	44	2	mg/L		46			4	26	
General Parameters, Batch B6C1643										
Blank (B6C1643-BLK1)				Prepared: 2016-03-31, Analyzed: 2016-03-31						
Alkalinity, Total as CaCO3	< 1	1	mg/L							
Alkalinity, Phenolphthalein as CaCO3	< 1	1	mg/L							
Alkalinity, Bicarbonate as CaCO3	< 1	1	mg/L							
Alkalinity, Carbonate as CaCO3	< 1	1	mg/L							
Alkalinity, Hydroxide as CaCO3	< 1	1	mg/L							
Blank (B6C1643-BLK2)				Prepared: 2016-03-31, Analyzed: 2016-03-31						
Alkalinity, Total as CaCO3	< 1	1	mg/L							
Alkalinity, Phenolphthalein as CaCO3	< 1	1	mg/L							
Alkalinity, Bicarbonate as CaCO3	< 1	1	mg/L							
Alkalinity, Carbonate as CaCO3	< 1	1	mg/L							
Alkalinity, Hydroxide as CaCO3	< 1	1	mg/L							
LCS (B6C1643-BS1)				Prepared: 2016-03-31, Analyzed: 2016-03-31						
Alkalinity, Total as CaCO3	99	1	mg/L	100		99	96-108			
LCS (B6C1643-BS2)				Prepared: 2016-03-31, Analyzed: 2016-03-31						
Alkalinity, Total as CaCO3	100	1	mg/L	100		100	96-108			

REPORTED TO	Morrison Hershfield Limited	**WORK ORDER**	6031702
PROJECT	Whistler Landfill - Spring/Fall	**REPORTED**	2016-04-06

Analyte	Result	MRL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Notes
General Parameters, Batch B6C1687										
Blank (B6C1687-BLK1)				Prepared: 2016-03-31, Analyzed: 2016-04-01						
Phosphorus, Total as P	< 0.002	0.002	mg/L							
Blank (B6C1687-BLK2)				Prepared: 2016-03-31, Analyzed: 2016-04-04						
Phosphorus, Total as P	< 0.002	0.002	mg/L							
LCS (B6C1687-BS1)				Prepared: 2016-03-31, Analyzed: 2016-04-01						
Phosphorus, Total as P	0.089	0.002	mg/L	0.100		89	75-112			
LCS (B6C1687-BS2)				Prepared: 2016-03-31, Analyzed: 2016-04-04						
Phosphorus, Total as P	0.091	0.002	mg/L	0.100		91	75-112			
General Parameters, Batch B6D0029										
Blank (B6D0029-BLK1)				Prepared: 2016-04-04, Analyzed: 2016-04-04						
Chemical Oxygen Demand	< 5	5	mg/L							
Blank (B6D0029-BLK2)				Prepared: 2016-04-04, Analyzed: 2016-04-04						
Chemical Oxygen Demand	< 5	5	mg/L							
LCS (B6D0029-BS1)				Prepared: 2016-04-04, Analyzed: 2016-04-04						
Chemical Oxygen Demand	51	5	mg/L	50.0		103	84-117			
LCS (B6D0029-BS2)				Prepared: 2016-04-04, Analyzed: 2016-04-04						
Chemical Oxygen Demand	52	5	mg/L	50.0		104	84-117			
Duplicate (B6D0029-DUP1)		**Source: 6031702-01**		Prepared: 2016-04-04, Analyzed: 2016-04-04						
Chemical Oxygen Demand	13	5	mg/L		15				14	
Matrix Spike (B6D0029-MS1)		**Source: 6031702-01**		Prepared: 2016-04-04, Analyzed: 2016-04-04						
Chemical Oxygen Demand	226	5	mg/L	200	15	106	75-125			
General Parameters, Batch B6D0055										
Blank (B6D0055-BLK1)				Prepared: 2016-04-01, Analyzed: 2016-04-04						
Nitrogen, Total Kjeldahl	< 0.05	0.05	mg/L							
Blank (B6D0055-BLK2)				Prepared: 2016-04-01, Analyzed: 2016-04-05						
Nitrogen, Total Kjeldahl	< 0.05	0.05	mg/L							
LCS (B6D0055-BS1)				Prepared: 2016-04-01, Analyzed: 2016-04-04						
Nitrogen, Total Kjeldahl	10.2	0.05	mg/L	10.0		102	80-120			
LCS (B6D0055-BS2)				Prepared: 2016-04-01, Analyzed: 2016-04-05						
Nitrogen, Total Kjeldahl	10.1	0.05	mg/L	10.0		101	80-120			
General Parameters, Batch B6D0204										
Blank (B6D0204-BLK1)				Prepared: 2016-04-05, Analyzed: 2016-04-05						
Conductivity (EC)	< 2	2	µS/cm							
Alkalinity, Total as CaCO3	< 1	1	mg/L							
Alkalinity, Phenolphthalein as CaCO3	< 1	1	mg/L							
Alkalinity, Bicarbonate as CaCO3	< 1	1	mg/L							
Alkalinity, Carbonate as CaCO3	< 1	1	mg/L							
Alkalinity, Hydroxide as CaCO3	< 1	1	mg/L							

REPORTED TO Morrison Hershfield Limited
PROJECT Whistler Landfill - Spring/Fall

WORK ORDER 6031702
REPORTED 2016-04-06

Analyte	Result	MRL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Notes
General Parameters, Batch B6D0204, Continued										
LCS (B6D0204-BS1)				Prepared: 2016-04-05, Analyzed: 2016-04-05						
Alkalinity, Total as CaCO3	97	1	mg/L	100		97	96-108			
LCS (B6D0204-BS2)				Prepared: 2016-04-05, Analyzed: 2016-04-05						
Conductivity (EC)	1420	2	µS/cm	1410		100	95-104			
Duplicate (B6D0204-DUP1)		**Source: 6031702-11**		Prepared: 2016-04-05, Analyzed: 2016-04-05						
pH	4.75	0.01	pH units		4.65			2	5	
Conductivity (EC)	402	2	µS/cm		395			2	5	
Alkalinity, Total as CaCO3	3	1	mg/L		3				10	
Alkalinity, Phenolphthalein as CaCO3	< 1	1	mg/L		< 1				10	
Alkalinity, Bicarbonate as CaCO3	3	1	mg/L		3				10	
Alkalinity, Carbonate as CaCO3	< 1	1	mg/L		< 1				10	
Alkalinity, Hydroxide as CaCO3	< 1	1	mg/L		< 1				10	
Reference (B6D0204-SRM1)				Prepared: 2016-04-05, Analyzed: 2016-04-05						
pH	7.06	0.01	pH units	7.00		101	98-102			
Polycyclic Aromatic Hydrocarbons (PAH), Batch B6C1551										
Blank (B6C1551-BLK1)				Prepared: 2016-03-30, Analyzed: 2016-04-01						
Acenaphthene	< 0.05	0.05	µg/L							
Acenaphthylene	< 0.20	0.20	µg/L							
Acridine	< 0.10	0.10	µg/L							
Anthracene	< 0.01	0.01	µg/L							
Benz (a) anthracene	< 0.01	0.01	µg/L							
Benzo (a) pyrene	< 0.01	0.01	µg/L							
Benzo (b) fluoranthene	< 0.05	0.05	µg/L							
Benzo (g,h,i) perylene	< 0.05	0.05	µg/L							
Benzo (k) fluoranthene	< 0.05	0.05	µg/L							
Chrysene	< 0.05	0.05	µg/L							
Dibenz (a,h) anthracene	< 0.05	0.05	µg/L							
Fluoranthene	< 0.03	0.03	µg/L							
Fluorene	< 0.05	0.05	µg/L							
Indeno (1,2,3-cd) pyrene	< 0.05	0.05	µg/L							
Naphthalene	< 0.20	0.20	µg/L							
Phenanthrene	< 0.10	0.10	µg/L							
Pyrene	< 0.02	0.02	µg/L							
Quinoline	< 0.10	0.10	µg/L							
Surrogate: Acridine-d9	*5.47*		*µg/L*	4.44		*123*	*60-140*			
Surrogate: Naphthalene-d8	*5.84*		*µg/L*	4.44		*131*	*60-140*			
Surrogate: Perylene-d12	*6.00*		*µg/L*	4.44		*135*	*60-140*			
LCS (B6C1551-BS1)				Prepared: 2016-03-30, Analyzed: 2016-04-01						
Acenaphthene	4.28	0.05	µg/L	4.44		96	70-130			
Acenaphthylene	4.62	0.20	µg/L	4.44		104	70-130			
Acridine	4.44	0.10	µg/L	4.44		100	60-140			
Anthracene	4.92	0.01	µg/L	4.44		111	70-130			
Benz (a) anthracene	4.21	0.01	µg/L	4.44		95	70-130			
Benzo (a) pyrene	5.49	0.01	µg/L	4.44		124	70-130			
Benzo (b) fluoranthene	4.81	0.05	µg/L	4.44		108	70-130			
Benzo (g,h,i) perylene	5.21	0.05	µg/L	4.44		117	70-130			
Benzo (k) fluoranthene	5.02	0.05	µg/L	4.44		113	70-130			
Chrysene	4.10	0.05	µg/L	4.44		92	70-130			
Dibenz (a,h) anthracene	5.41	0.05	µg/L	4.44		122	70-130			
Fluoranthene	5.54	0.03	µg/L	4.44		125	70-130			
Fluorene	4.49	0.05	µg/L	4.44		101	70-130			

REPORTED TO	Morrison Hershfield Limited	**WORK ORDER**	6031702
PROJECT	Whistler Landfill - Spring/Fall	**REPORTED**	2016-04-06

Analyte	Result	MRL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Notes
Polycyclic Aromatic Hydrocarbons (PAH), Batch B6C1551, Continued										
LCS (B6C1551-BS1), Continued				Prepared: 2016-03-30, Analyzed: 2016-04-01						
Indeno (1,2,3-cd) pyrene	5.17	0.05	µg/L	4.44		116	70-130			
Naphthalene	4.64	0.20	µg/L	4.44		104	70-130			
Phenanthrene	4.84	0.10	µg/L	4.44		109	70-130			
Pyrene	5.62	0.02	µg/L	4.44		126	70-130			
Quinoline	3.85	0.10	µg/L	4.44		87	70-130			
Surrogate: Acridine-d9	*5.19*		*µg/L*	4.44		*117*	*60-140*			
Surrogate: Naphthalene-d8	*5.42*		*µg/L*	4.44		*122*	*60-140*			
Surrogate: Perylene-d12	*5.85*		*µg/L*	4.44		*132*	*60-140*			
LCS Dup (B6C1551-BSD1)				Prepared: 2016-03-30, Analyzed: 2016-04-01						
Acenaphthene	3.86	0.05	µg/L	4.44		87	70-130	10	20	
Acenaphthylene	4.20	0.20	µg/L	4.44		95	70-130	10	20	
Acridine	3.98	0.10	µg/L	4.44		90	60-140	11	20	
Anthracene	4.39	0.01	µg/L	4.44		99	70-130	11	20	
Benz (a) anthracene	4.55	0.01	µg/L	4.44		102	70-130	8	20	
Benzo (a) pyrene	5.32	0.01	µg/L	4.44		120	70-130	3	20	
Benzo (b) fluoranthene	5.16	0.05	µg/L	4.44		116	70-130	7	20	
Benzo (g,h,i) perylene	5.66	0.05	µg/L	4.44		127	70-130	8	20	
Benzo (k) fluoranthene	5.24	0.05	µg/L	4.44		118	70-130	4	20	
Chrysene	4.19	0.05	µg/L	4.44		94	70-130	2	20	
Dibenz (a,h) anthracene	5.69	0.05	µg/L	4.44		128	70-130	5	20	
Fluoranthene	5.28	0.03	µg/L	4.44		119	70-130	5	20	
Fluorene	4.08	0.05	µg/L	4.44		92	70-130	10	20	
Indeno (1,2,3-cd) pyrene	5.32	0.05	µg/L	4.44		120	70-130	3	20	
Naphthalene	4.32	0.20	µg/L	4.44		97	70-130	7	20	
Phenanthrene	4.54	0.10	µg/L	4.44		102	70-130	7	20	
Pyrene	5.28	0.02	µg/L	4.44		119	70-130	6	20	
Quinoline	3.96	0.10	µg/L	4.44		89	70-130	3	20	
Surrogate: Acridine-d9	*4.62*		*µg/L*	4.44		*104*	*60-140*			
Surrogate: Naphthalene-d8	*5.17*		*µg/L*	4.44		*116*	*60-140*			
Surrogate: Perylene-d12	*5.49*		*µg/L*	4.44		*124*	*60-140*			
Polycyclic Aromatic Hydrocarbons (PAH), Batch B6C1608										
Blank (B6C1608-BLK1)				Prepared: 2016-03-30, Analyzed: 2016-04-01						
Acenaphthene	< 0.05	0.05	µg/L							
Acenaphthylene	< 0.20	0.20	µg/L							
Acridine	< 0.10	0.10	µg/L							
Anthracene	< 0.01	0.01	µg/L							
Benz (a) anthracene	< 0.01	0.01	µg/L							
Benzo (a) pyrene	< 0.01	0.01	µg/L							
Benzo (b) fluoranthene	< 0.05	0.05	µg/L							
Benzo (g,h,i) perylene	< 0.05	0.05	µg/L							
Benzo (k) fluoranthene	< 0.05	0.05	µg/L							
Chrysene	< 0.05	0.05	µg/L							
Dibenz (a,h) anthracene	< 0.05	0.05	µg/L							
Fluoranthene	< 0.03	0.03	µg/L							
Fluorene	< 0.05	0.05	µg/L							
Indeno (1,2,3-cd) pyrene	< 0.05	0.05	µg/L							
Naphthalene	< 0.20	0.20	µg/L							
Phenanthrene	< 0.10	0.10	µg/L							
Pyrene	< 0.02	0.02	µg/L							
Quinoline	< 0.10	0.10	µg/L							
Surrogate: Acridine-d9	*4.21*		*µg/L*	4.44		*95*	*60-140*			
Surrogate: Naphthalene-d8	*4.92*		*µg/L*	4.44		*111*	*60-140*			
Surrogate: Perylene-d12	*5.52*		*µg/L*	4.44		*124*	*60-140*			

REPORTED TO Morrison Hershfield Limited
PROJECT Whistler Landfill - Spring/Fall

WORK ORDER 6031702
REPORTED 2016-04-06

Analyte	Result	MRL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Notes
Polycyclic Aromatic Hydrocarbons (PAH), Batch B6C1608, Continued										
LCS (B6C1608-BS1)				Prepared: 2016-03-30, Analyzed: 2016-04-01						
Acenaphthene	4.60	0.05	µg/L	4.44		103	70-130			
Acenaphthylene	4.92	0.20	µg/L	4.44		111	70-130			
Acridine	4.73	0.10	µg/L	4.44		106	60-140			
Anthracene	4.86	0.01	µg/L	4.44		109	70-130			
Benz (a) anthracene	4.52	0.01	µg/L	4.44		102	70-130			
Benzo (a) pyrene	5.51	0.01	µg/L	4.44		124	70-130			
Benzo (b) fluoranthene	4.65	0.05	µg/L	4.44		105	70-130			
Benzo (g,h,i) perylene	5.62	0.05	µg/L	4.44		127	70-130			
Benzo (k) fluoranthene	5.05	0.05	µg/L	4.44		114	70-130			
Chrysene	4.25	0.05	µg/L	4.44		96	70-130			
Dibenz (a,h) anthracene	5.62	0.05	µg/L	4.44		127	70-130			
Fluoranthene	5.19	0.03	µg/L	4.44		117	70-130			
Fluorene	4.61	0.05	µg/L	4.44		104	70-130			
Indeno (1,2,3-cd) pyrene	5.42	0.05	µg/L	4.44		122	70-130			
Naphthalene	5.11	0.20	µg/L	4.44		115	70-130			
Phenanthrene	4.68	0.10	µg/L	4.44		105	70-130			
Pyrene	5.80	0.02	µg/L	4.44		130	70-130			
Quinoline	4.05	0.10	µg/L	4.44		91	70-130			
Surrogate: Acridine-d9	*5.38*		*µg/L*	4.44		*121*	*60-140*			
Surrogate: Naphthalene-d8	*5.43*		*µg/L*	4.44		*122*	*60-140*			
Surrogate: Perylene-d12	*5.80*		*µg/L*	4.44		*130*	*60-140*			
LCS Dup (B6C1608-BSD1)				Prepared: 2016-03-30, Analyzed: 2016-04-01						
Acenaphthene	4.45	0.05	µg/L	4.44		100	70-130	3	20	
Acenaphthylene	4.73	0.20	µg/L	4.44		107	70-130	4	20	
Acridine	4.64	0.10	µg/L	4.44		104	60-140	2	20	
Anthracene	4.72	0.01	µg/L	4.44		106	70-130	3	20	
Benz (a) anthracene	3.97	0.01	µg/L	4.44		89	70-130	13	20	
Benzo (a) pyrene	5.73	0.01	µg/L	4.44		129	70-130	4	20	
Benzo (b) fluoranthene	4.54	0.05	µg/L	4.44		102	70-130	2	20	
Benzo (g,h,i) perylene	4.75	0.05	µg/L	4.44		107	70-130	17	20	
Benzo (k) fluoranthene	4.64	0.05	µg/L	4.44		104	70-130	9	20	
Chrysene	3.61	0.05	µg/L	4.44		81	70-130	16	20	
Dibenz (a,h) anthracene	5.10	0.05	µg/L	4.44		115	70-130	10	20	
Fluoranthene	5.74	0.03	µg/L	4.44		129	70-130	10	20	
Fluorene	4.17	0.05	µg/L	4.44		94	70-130	10	20	
Indeno (1,2,3-cd) pyrene	4.97	0.05	µg/L	4.44		112	70-130	9	20	
Naphthalene	4.96	0.20	µg/L	4.44		112	70-130	3	20	
Phenanthrene	4.30	0.10	µg/L	4.44		97	70-130	8	20	
Pyrene	5.50	0.02	µg/L	4.44		124	70-130	5	20	
Quinoline	4.02	0.10	µg/L	4.44		90	70-130	< 1	20	
Surrogate: Acridine-d9	*5.33*		*µg/L*	4.44		*120*	*60-140*			
Surrogate: Naphthalene-d8	*5.34*		*µg/L*	4.44		*120*	*60-140*			
Surrogate: Perylene-d12	*5.74*		*µg/L*	4.44		*129*	*60-140*			
Total Recoverable Metals, Batch B6C1498										
Blank (B6C1498-BLK1)				Prepared: 2016-03-29, Analyzed: 2016-03-29						
Aluminum, total	< 0.005	0.005	mg/L							
Antimony, total	< 0.0001	0.0001	mg/L							
Arsenic, total	< 0.0005	0.0005	mg/L							
Barium, total	< 0.005	0.005	mg/L							
Beryllium, total	< 0.0001	0.0001	mg/L							
Bismuth, total	< 0.0001	0.0001	mg/L							
Boron, total	< 0.004	0.004	mg/L							
Cadmium, total	< 0.00001	0.00001	mg/L							

REPORTED TO Morrison Hershfield Limited
PROJECT Whistler Landfill - Spring/Fall

WORK ORDER 6031702
REPORTED 2016-04-06

Analyte	Result	MRL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Notes
Total Recoverable Metals, Batch B6C1498, Continued										
Blank (B6C1498-BLK1), Continued				Prepared: 2016-03-29, Analyzed: 2016-03-29						
Calcium, total	< 0.2	0.2	mg/L							
Chromium, total	< 0.0005	0.0005	mg/L							
Cobalt, total	< 0.00005	0.00005	mg/L							
Copper, total	< 0.0002	0.0002	mg/L							
Iron, total	< 0.01	0.01	mg/L							
Lead, total	< 0.0001	0.0001	mg/L							
Lithium, total	< 0.0001	0.0001	mg/L							
Magnesium, total	< 0.01	0.01	mg/L							
Manganese, total	< 0.0002	0.0002	mg/L							
Molybdenum, total	< 0.0001	0.0001	mg/L							
Nickel, total	< 0.0002	0.0002	mg/L							
Phosphorus, total	< 0.02	0.02	mg/L							
Potassium, total	< 0.02	0.02	mg/L							
Selenium, total	< 0.0005	0.0005	mg/L							
Silicon, total	< 0.5	0.5	mg/L							
Silver, total	< 0.00005	0.00005	mg/L							
Sodium, total	< 0.02	0.02	mg/L							
Strontium, total	< 0.001	0.001	mg/L							
Sulfur, total	< 1	1	mg/L							
Tellurium, total	< 0.0002	0.0002	mg/L							
Thallium, total	< 0.00002	0.00002	mg/L							
Thorium, total	< 0.0001	0.0001	mg/L							
Tin, total	< 0.0002	0.0002	mg/L							
Titanium, total	< 0.005	0.005	mg/L							
Uranium, total	< 0.00002	0.00002	mg/L							
Vanadium, total	< 0.001	0.001	mg/L							
Zinc, total	< 0.004	0.004	mg/L							
Zirconium, total	< 0.0001	0.0001	mg/L							
Matrix Spike (B6C1498-MS1)		**Source: 6031702-08**		Prepared: 2016-03-29, Analyzed: 2016-03-29						
Antimony, total	0.424	0.0001	mg/L	0.400	< 0.0001	106	84-125			
Arsenic, total	0.197	0.0005	mg/L	0.200	< 0.0005	98	85-116			
Barium, total	1.06	0.005	mg/L	1.00	0.018	104	87-114			
Beryllium, total	0.0922	0.0001	mg/L	0.100	< 0.0001	92	72-116			
Cadmium, total	0.0988	0.00001	mg/L	0.100	0.00004	99	90-112			
Chromium, total	0.452	0.0005	mg/L	0.400	< 0.0005	113	89-120			
Cobalt, total	0.378	0.00005	mg/L	0.400	0.00138	94	88-120			
Copper, total	0.396	0.0002	mg/L	0.400	0.0060	97	88-125			
Iron, total	2.98	0.01	mg/L	2.00	0.92	103	88-119			
Lead, total	0.217	0.0001	mg/L	0.200	< 0.0001	108	89-118			
Manganese, total	0.609	0.0002	mg/L	0.400	0.194	104	84-120			
Nickel, total	0.440	0.0002	mg/L	0.400	0.0010	110	87-119			
Selenium, total	0.0930	0.0005	mg/L	0.100	< 0.0005	93	85-113			
Silver, total	0.113	0.00005	mg/L	0.100	< 0.00005	113	89-119			
Thallium, total	0.109	0.00002	mg/L	0.100	< 0.00002	109	92-119			
Vanadium, total	0.434	0.001	mg/L	0.400	0.001	108	87-117			
Zinc, total	1.07	0.004	mg/L	1.00	0.006	106	85-116			
Reference (B6C1498-SRM1)				Prepared: 2016-03-29, Analyzed: 2016-03-29						
Aluminum, total	0.297	0.005	mg/L	0.296		100	81-129			
Antimony, total	0.0556	0.0001	mg/L	0.0505		110	88-114			
Arsenic, total	0.131	0.0005	mg/L	0.122		107	88-114			
Barium, total	0.717	0.005	mg/L	0.777		92	72-104			
Beryllium, total	0.0509	0.0001	mg/L	0.0488		104	76-131			
Boron, total	3.75	0.004	mg/L	3.40		110	75-121			
Cadmium, total	0.0524	0.00001	mg/L	0.0490		107	89-111			
Calcium, total	11.5	0.2	mg/L	10.2		113	86-121			

REPORTED TO Morrison Hershfield Limited
PROJECT Whistler Landfill - Spring/Fall

WORK ORDER 6031702
REPORTED 2016-04-06

Analyte	Result	MRL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Notes
Total Recoverable Metals, Batch B6C1498, Continued										
Reference (B6C1498-SRM1), Continued				Prepared: 2016-03-29, Analyzed: 2016-03-29						
Chromium, total	0.268	0.0005	mg/L	0.242		111	89-114			
Cobalt, total	0.0359	0.00005	mg/L	0.0366		98	91-113			
Copper, total	0.478	0.0002	mg/L	0.487		98	91-115			
Iron, total	0.53	0.01	mg/L	0.469		113	77-124			
Lead, total	0.216	0.0001	mg/L	0.193		112	92-113			
Lithium, total	0.441	0.0001	mg/L	0.390		113	85-115			
Magnesium, total	3.77	0.01	mg/L	3.31		114	78-120			
Manganese, total	0.113	0.0002	mg/L	0.109		104	90-114			
Molybdenum, total	0.216	0.0001	mg/L	0.197		110	90-111			
Nickel, total	0.270	0.0002	mg/L	0.242		111	90-111			
Phosphorus, total	0.23	0.02	mg/L	0.233		99	85-115			
Potassium, total	6.42	0.02	mg/L	5.93		108	84-113			
Selenium, total	0.121	0.0005	mg/L	0.115		105	85-115			
Sodium, total	8.69	0.02	mg/L	7.64		114	82-123			
Strontium, total	0.371	0.001	mg/L	0.363		102	88-112			
Thallium, total	0.0893	0.00002	mg/L	0.0794		112	91-114			
Uranium, total	0.0211	0.00002	mg/L	0.0192		110	85-120			
Vanadium, total	0.391	0.001	mg/L	0.376		104	86-111			
Zinc, total	2.59	0.004	mg/L	2.42		107	85-111			
Total Recoverable Metals, Batch B6C1511										
Blank (B6C1511-BLK1)				Prepared: 2016-03-29, Analyzed: 2016-03-30						
Mercury, total	< 0.00002	0.00002	mg/L							
Duplicate (B6C1511-DUP1)			**Source: 6031702-12**	Prepared: 2016-03-29, Analyzed: 2016-03-30						
Mercury, total	< 0.00002	0.00002	mg/L		< 0.00002				20	
Reference (B6C1511-SRM1)				Prepared: 2016-03-29, Analyzed: 2016-03-30						
Mercury, total	0.00326	0.00002	mg/L	0.00456		72	50-150			
Total Recoverable Metals, Batch B6C1566										
Blank (B6C1566-BLK1)				Prepared: 2016-03-30, Analyzed: 2016-03-30						
Aluminum, total	< 0.005	0.005	mg/L							
Antimony, total	< 0.0001	0.0001	mg/L							
Arsenic, total	< 0.0005	0.0005	mg/L							
Barium, total	< 0.005	0.005	mg/L							
Beryllium, total	< 0.0001	0.0001	mg/L							
Bismuth, total	< 0.0001	0.0001	mg/L							
Boron, total	< 0.004	0.004	mg/L							
Cadmium, total	< 0.00001	0.00001	mg/L							
Calcium, total	< 0.2	0.2	mg/L							
Chromium, total	< 0.0005	0.0005	mg/L							
Cobalt, total	< 0.00005	0.00005	mg/L							
Copper, total	< 0.0002	0.0002	mg/L							
Iron, total	< 0.01	0.01	mg/L							
Lead, total	< 0.0001	0.0001	mg/L							
Lithium, total	< 0.0001	0.0001	mg/L							
Magnesium, total	< 0.01	0.01	mg/L							
Manganese, total	< 0.0002	0.0002	mg/L							
Molybdenum, total	< 0.0001	0.0001	mg/L							
Nickel, total	< 0.0002	0.0002	mg/L							
Phosphorus, total	< 0.02	0.02	mg/L							
Potassium, total	< 0.02	0.02	mg/L							
Selenium, total	< 0.0005	0.0005	mg/L							

REPORTED TO Morrison Hershfield Limited
PROJECT Whistler Landfill - Spring/Fall

WORK ORDER 6031702
REPORTED 2016-04-06

Analyte	Result	MRL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Notes
Total Recoverable Metals, Batch B6C1566, Continued										
Blank (B6C1566-BLK1), Continued				Prepared: 2016-03-30, Analyzed: 2016-03-30						
Silicon, total	< 0.5	0.5	mg/L							
Silver, total	< 0.00005	0.00005	mg/L							
Sodium, total	< 0.02	0.02	mg/L							
Strontium, total	< 0.001	0.001	mg/L							
Sulfur, total	< 1	1	mg/L							
Tellurium, total	< 0.0002	0.0002	mg/L							
Thallium, total	< 0.00002	0.00002	mg/L							
Thorium, total	< 0.0001	0.0001	mg/L							
Tin, total	< 0.0002	0.0002	mg/L							
Titanium, total	< 0.005	0.005	mg/L							
Uranium, total	< 0.00002	0.00002	mg/L							
Vanadium, total	< 0.001	0.001	mg/L							
Zinc, total	< 0.002	0.004	mg/L							
Zirconium, total	< 0.0001	0.0001	mg/L							
Reference (B6C1566-SRM1)				Prepared: 2016-03-30, Analyzed: 2016-03-30						
Aluminum, total	0.290	0.005	mg/L	0.296		98	81-129			
Antimony, total	0.0498	0.0001	mg/L	0.0505		99	88-114			
Arsenic, total	0.121	0.0005	mg/L	0.122		99	88-114			
Barium, total	0.676	0.005	mg/L	0.777		87	72-104			
Beryllium, total	0.0469	0.0001	mg/L	0.0488		96	76-131			
Boron, total	3.48	0.004	mg/L	3.40		102	75-121			
Cadmium, total	0.0478	0.00001	mg/L	0.0490		97	89-111			
Calcium, total	10.0	0.2	mg/L	10.2		98	86-121			
Chromium, total	0.239	0.0005	mg/L	0.242		99	89-114			
Cobalt, total	0.0381	0.00005	mg/L	0.0366		104	91-113			
Copper, total	0.501	0.0002	mg/L	0.487		103	91-115			
Iron, total	0.49	0.01	mg/L	0.469		104	77-124			
Lead, total	0.197	0.0001	mg/L	0.193		102	92-113			
Lithium, total	0.388	0.0001	mg/L	0.390		100	85-115			
Magnesium, total	3.36	0.01	mg/L	3.31		102	78-120			
Manganese, total	0.108	0.0002	mg/L	0.109		99	90-114			
Molybdenum, total	0.192	0.0001	mg/L	0.197		98	90-111			
Nickel, total	0.244	0.0002	mg/L	0.242		101	90-111			
Phosphorus, total	0.20	0.02	mg/L	0.233		86	85-115			
Potassium, total	5.99	0.02	mg/L	5.93		101	84-113			
Selenium, total	0.125	0.0005	mg/L	0.115		109	85-115			
Sodium, total	7.66	0.02	mg/L	7.64		100	82-123			
Strontium, total	0.357	0.001	mg/L	0.363		98	88-112			
Thallium, total	0.0793	0.00002	mg/L	0.0794		100	91-114			
Uranium, total	0.0189	0.00002	mg/L	0.0192		99	85-120			
Vanadium, total	0.360	0.001	mg/L	0.376		96	86-111			
Zinc, total	2.34	0.004	mg/L	2.42		97	85-111			
Total Recoverable Metals, Batch B6D0111										
Blank (B6D0111-BLK1)				Prepared: 2016-04-04, Analyzed: 2016-04-04						
Mercury, total	< 0.00002	0.00002	mg/L							
Reference (B6D0111-SRM1)				Prepared: 2016-04-04, Analyzed: 2016-04-04						
Mercury, total	0.00311	0.00002	mg/L	0.00456		68	50-150			
Volatile Organic Compounds (VOC), Batch B6C1491										
Blank (B6C1491-BLK1)				Prepared: 2016-03-27, Analyzed: 2016-03-27						
Acetone	< 10.0	10.0	µg/L							

REPORTED TO Morrison Hershfield Limited
PROJECT Whistler Landfill - Spring/Fall

WORK ORDER 6031702
REPORTED 2016-04-06

Analyte	Result	MRL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Notes
Volatile Organic Compounds (VOC), Batch B6C1491, Continued										
Blank (B6C1491-BLK1), Continued				Prepared: 2016-03-27, Analyzed: 2016-03-27						
Benzene	< 0.5	0.5	µg/L							
Bromodichloromethane	< 1.0	1.0	µg/L							
Bromoform	< 1.0	1.0	µg/L							
Bromomethane	< 2.0	2.0	µg/L							
2-Butanone (MEK)	< 5.0	5.0	µg/L							
Carbon tetrachloride	< 1.0	1.0	µg/L							
Chlorobenzene	< 1.0	1.0	µg/L							
Chloroethane	< 2.0	2.0	µg/L							
Chloroform	< 1.0	1.0	µg/L							
Chloromethane	< 2.0	2.0	µg/L							
Dibromochloromethane	< 1.0	1.0	µg/L							
Dibromomethane	< 1.0	1.0	µg/L							
1,3-Dichlorobenzene	< 1.0	1.0	µg/L							
1,4-Dichlorobenzene	< 1.0	1.0	µg/L							
1,1-Dichloroethane	< 1.0	1.0	µg/L							
1,2-Dichloroethane	< 1.0	1.0	µg/L							
1,1-Dichloroethene	< 1.0	1.0	µg/L							
cis-1,2-Dichloroethene	< 1.0	1.0	µg/L							
trans-1,2-Dichloroethene	< 1.0	1.0	µg/L							
1,2-Dichloropropane	< 1.0	1.0	µg/L							
cis-1,3-Dichloropropene	< 1.0	1.0	µg/L							
trans-1,3-Dichloropropene	< 1.0	1.0	µg/L							
Ethylbenzene	< 1.0	1.0	µg/L							
Methyl tert-butyl ether	< 1.0	1.0	µg/L							
Methylene chloride	< 3.0	3.0	µg/L							
4-Methyl-2-Pentanone (MIBK)	< 10.0	10.0	µg/L							
Styrene	< 1.0	1.0	µg/L							
1,1,1,2-Tetrachloroethane	< 1.0	1.0	µg/L							
1,1,2,2-Tetrachloroethane	< 1.0	1.0	µg/L							
Tetrachloroethene	< 1.0	1.0	µg/L							
Toluene	< 1.0	1.0	µg/L							
1,1,1-Trichloroethane	< 1.0	1.0	µg/L							
1,1,2-Trichloroethane	< 1.0	1.0	µg/L							
Trichloroethene	< 1.0	1.0	µg/L							
Trichlorofluoromethane	< 1.0	1.0	µg/L							
Vinyl chloride	< 2.0	2.0	µg/L							
m,p-Xylene	< 1.0	1.0	µg/L							
o-Xylene	< 1.0	1.0	µg/L							
Xylenes (total)	< 2.0	2.0	µg/L							
1,2-Dibromoethane	< 0.3	0.3	µg/L							
1,2-Dichlorobenzene	< 0.5	0.5	µg/L							
Surrogate: Toluene-d8	*25.8*		*µg/L*	25.0		*103*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*24.5*		*µg/L*	25.0		*98*	*70-130*			
Surrogate: 1,4-Dichlorobenzene-d4	*24.3*		*µg/L*	25.2		*96*	*70-130*			
LCS (B6C1491-BS1)				Prepared: 2016-03-27, Analyzed: 2016-03-27						
Acetone	22.4	10.0	µg/L	20.0		112	70-130			
Benzene	21.7	0.5	µg/L	20.0		109	70-130			
Bromodichloromethane	19.0	1.0	µg/L	20.0		95	70-130			
Bromoform	18.6	1.0	µg/L	20.0		93	70-130			
Bromomethane	18.6	2.0	µg/L	20.0		93	70-130			
2-Butanone (MEK)	20.1	5.0	µg/L	20.0		101	70-130			
Carbon tetrachloride	17.5	1.0	µg/L	20.0		87	70-130			
Chlorobenzene	21.0	1.0	µg/L	20.0		105	70-130			
Chloroethane	25.4	2.0	µg/L	20.0		127	70-130			
Chloroform	20.1	1.0	µg/L	20.0		100	70-130			

REPORTED TO Morrison Hershfield Limited
PROJECT Whistler Landfill - Spring/Fall

WORK ORDER 6031702
REPORTED 2016-04-06

Analyte	Result	MRL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Notes
Volatile Organic Compounds (VOC), Batch B6C1491, Continued										
LCS (B6C1491-BS1), Continued				Prepared: 2016-03-27, Analyzed: 2016-03-27						
Chloromethane	19.4	2.0	µg/L	20.0		97	70-130			
Dibromochloromethane	19.5	1.0	µg/L	20.0		98	70-130			
Dibromomethane	20.1	1.0	µg/L	20.0		101	70-130			
1,3-Dichlorobenzene	21.8	1.0	µg/L	20.0		109	70-130			
1,4-Dichlorobenzene	22.2	1.0	µg/L	20.0		111	70-130			
1,1-Dichloroethane	20.9	1.0	µg/L	20.0		105	70-130			
1,2-Dichloroethane	19.1	1.0	µg/L	20.0		96	70-130			
1,1-Dichloroethene	14.8	1.0	µg/L	20.0		74	70-130			
cis-1,2-Dichloroethene	19.8	1.0	µg/L	20.0		99	70-130			
trans-1,2-Dichloroethene	19.5	1.0	µg/L	20.0		98	70-130			
1,2-Dichloropropane	21.8	1.0	µg/L	20.0		109	70-130			
cis-1,3-Dichloropropene	20.6	1.0	µg/L	20.0		103	70-130			
trans-1,3-Dichloropropene	19.8	1.0	µg/L	20.0		99	70-130			
Ethylbenzene	21.3	1.0	µg/L	20.0		106	70-130			
Methyl tert-butyl ether	19.1	1.0	µg/L	20.0		96	70-130			
Methylene chloride	20.0	3.0	µg/L	20.0		100	70-130			
4-Methyl-2-Pentanone (MIBK)	22.6	10.0	µg/L	20.0		113	70-130			
Styrene	22.4	1.0	µg/L	20.0		112	70-130			
1,1,1,2-Tetrachloroethane	18.6	1.0	µg/L	20.0		93	70-130			
1,1,2,2-Tetrachloroethane	22.4	1.0	µg/L	20.0		112	70-130			
Tetrachloroethene	18.6	1.0	µg/L	20.0		93	70-130			
Toluene	21.7	1.0	µg/L	20.0		109	70-130			
1,1,1-Trichloroethane	17.7	1.0	µg/L	20.0		88	70-130			
1,1,2-Trichloroethane	21.3	1.0	µg/L	20.0		107	70-130			
Trichloroethene	20.8	1.0	µg/L	20.0		104	70-130			
Trichlorofluoromethane	26.4	1.0	µg/L	20.0		132	70-130			SPK
Vinyl chloride	18.7	2.0	µg/L	20.0		94	70-130			
m,p-Xylene	43.0	1.0	µg/L	40.0		108	70-130			
o-Xylene	21.7	1.0	µg/L	20.0		109	70-130			
Xylenes (total)	64.7	2.0	µg/L	60.0		108	70-130			
1,2-Dibromoethane	20.4	0.3	µg/L	20.0		102	70-130			
1,2-Dichlorobenzene	21.1	0.5	µg/L	20.0		106	70-130			
Surrogate: Toluene-d8	*24.9*		*µg/L*	25.0		*99*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*24.7*		*µg/L*	25.0		*99*	*70-130*			
Surrogate: 1,4-Dichlorobenzene-d4	*27.8*		*µg/L*	25.2		*110*	*70-130*			
Volatile Organic Compounds (VOC), Batch B6D0044										
Blank (B6D0044-BLK1)				Prepared: 2016-04-01, Analyzed: 2016-04-01						
Acetone	< 10.0	10.0	µg/L							
Benzene	< 0.5	0.5	µg/L							
Bromodichloromethane	< 1.0	1.0	µg/L							
Bromoform	< 1.0	1.0	µg/L							
Bromomethane	< 2.0	2.0	µg/L							
2-Butanone (MEK)	< 5.0	5.0	µg/L							
Carbon tetrachloride	< 1.0	1.0	µg/L							
Chlorobenzene	< 1.0	1.0	µg/L							
Chloroethane	< 2.0	2.0	µg/L							
Chloroform	< 1.0	1.0	µg/L							
Chloromethane	< 2.0	2.0	µg/L							
Dibromochloromethane	< 1.0	1.0	µg/L							
Dibromomethane	< 1.0	1.0	µg/L							
1,3-Dichlorobenzene	< 1.0	1.0	µg/L							
1,4-Dichlorobenzene	< 1.0	1.0	µg/L							
1,1-Dichloroethane	< 1.0	1.0	µg/L							
1,2-Dichloroethane	< 1.0	1.0	µg/L							

REPORTED TO Morrison Hershfield Limited
PROJECT Whistler Landfill - Spring/Fall

WORK ORDER 6031702
REPORTED 2016-04-06

Analyte	Result	MRL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Notes
Volatile Organic Compounds (VOC), Batch B6D0044, Continued										
Blank (B6D0044-BLK1), Continued				Prepared: 2016-04-01, Analyzed: 2016-04-01						
1,1-Dichloroethene	< 1.0	1.0	µg/L							
cis-1,2-Dichloroethene	< 1.0	1.0	µg/L							
trans-1,2-Dichloroethene	< 1.0	1.0	µg/L							
1,2-Dichloropropane	< 1.0	1.0	µg/L							
cis-1,3-Dichloropropene	< 1.0	1.0	µg/L							
trans-1,3-Dichloropropene	< 1.0	1.0	µg/L							
Ethylbenzene	< 1.0	1.0	µg/L							
Methyl tert-butyl ether	< 1.0	1.0	µg/L							
Methylene chloride	< 3.0	3.0	µg/L							
4-Methyl-2-Pentanone (MIBK)	< 10.0	10.0	µg/L							
Styrene	< 1.0	1.0	µg/L							
1,1,1,2-Tetrachloroethane	< 1.0	1.0	µg/L							
1,1,2,2-Tetrachloroethane	< 1.0	1.0	µg/L							
Tetrachloroethene	< 1.0	1.0	µg/L							
Toluene	< 1.0	1.0	µg/L							
1,1,1-Trichloroethane	< 1.0	1.0	µg/L							
1,1,2-Trichloroethane	< 1.0	1.0	µg/L							
Trichloroethene	< 1.0	1.0	µg/L							
Trichlorofluoromethane	< 1.0	1.0	µg/L							
Vinyl chloride	< 2.0	2.0	µg/L							
m,p-Xylene	< 1.0	1.0	µg/L							
o-Xylene	< 1.0	1.0	µg/L							
Xylenes (total)	< 2.0	2.0	µg/L							
1,2-Dibromoethane	< 0.3	0.3	µg/L							
1,2-Dichlorobenzene	< 0.5	0.5	µg/L							
Surrogate: Toluene-d8	*25.0*		*µg/L*	25.0		*100*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*24.1*		*µg/L*	25.0		*96*	*70-130*			
Surrogate: 1,4-Dichlorobenzene-d4	*25.8*		*µg/L*	25.2		*102*	*70-130*			
LCS (B6D0044-BS1)				Prepared: 2016-04-01, Analyzed: 2016-04-01						
Acetone	21.2	10.0	µg/L	20.0		106	70-130			
Benzene	22.3	0.5	µg/L	20.0		111	70-130			
Bromodichloromethane	18.7	1.0	µg/L	20.0		93	70-130			
Bromoform	17.6	1.0	µg/L	20.0		88	70-130			
Bromomethane	20.6	2.0	µg/L	20.0		103	70-130			
2-Butanone (MEK)	17.8	5.0	µg/L	20.0		89	70-130			
Carbon tetrachloride	17.6	1.0	µg/L	20.0		88	70-130			
Chlorobenzene	21.3	1.0	µg/L	20.0		106	70-130			
Chloroethane	16.1	2.0	µg/L	20.0		81	70-130			
Chloroform	20.2	1.0	µg/L	20.0		101	70-130			
Chloromethane	20.8	2.0	µg/L	20.0		104	70-130			
Dibromochloromethane	18.8	1.0	µg/L	20.0		94	70-130			
Dibromomethane	20.2	1.0	µg/L	20.0		101	70-130			
1,3-Dichlorobenzene	21.6	1.0	µg/L	20.0		108	70-130			
1,4-Dichlorobenzene	21.9	1.0	µg/L	20.0		109	70-130			
1,1-Dichloroethane	21.3	1.0	µg/L	20.0		106	70-130			
1,2-Dichloroethane	18.7	1.0	µg/L	20.0		93	70-130			
1,1-Dichloroethene	19.1	1.0	µg/L	20.0		95	70-130			
cis-1,2-Dichloroethene	20.4	1.0	µg/L	20.0		102	70-130			
trans-1,2-Dichloroethene	20.4	1.0	µg/L	20.0		102	70-130			
1,2-Dichloropropane	21.7	1.0	µg/L	20.0		109	70-130			
cis-1,3-Dichloropropene	20.0	1.0	µg/L	20.0		100	70-130			
trans-1,3-Dichloropropene	18.8	1.0	µg/L	20.0		94	70-130			
Ethylbenzene	21.5	1.0	µg/L	20.0		108	70-130			
Methyl tert-butyl ether	18.7	1.0	µg/L	20.0		94	70-130			
Methylene chloride	20.6	3.0	µg/L	20.0		103	70-130			

REPORTED TO Morrison Hershfield Limited
PROJECT Whistler Landfill - Spring/Fall

WORK ORDER 6031702
REPORTED 2016-04-06

Analyte	Result	MRL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Notes
Volatile Organic Compounds (VOC), Batch B6D0044, Continued										
LCS (B6D0044-BS1), Continued				Prepared: 2016-04-01, Analyzed: 2016-04-01						
4-Methyl-2-Pentanone (MIBK)	20.8	10.0	µg/L	20.0		104	70-130			
Styrene	22.3	1.0	µg/L	20.0		112	70-130			
1,1,1,2-Tetrachloroethane	18.6	1.0	µg/L	20.0		93	70-130			
1,1,2,2-Tetrachloroethane	20.9	1.0	µg/L	20.0		105	70-130			
Tetrachloroethene	19.2	1.0	µg/L	20.0		96	70-130			
Toluene	22.0	1.0	µg/L	20.0		110	70-130			
1,1,1-Trichloroethane	17.9	1.0	µg/L	20.0		90	70-130			
1,1,2-Trichloroethane	20.6	1.0	µg/L	20.0		103	70-130			
Trichloroethene	21.3	1.0	µg/L	20.0		106	70-130			
Trichlorofluoromethane	22.1	1.0	µg/L	20.0		110	70-130			
Vinyl chloride	20.7	2.0	µg/L	20.0		103	70-130			
m,p-Xylene	43.0	1.0	µg/L	40.0		108	70-130			
o-Xylene	21.6	1.0	µg/L	20.0		108	70-130			
Xylenes (total)	64.7	2.0	µg/L	60.0		108	70-130			
1,2-Dibromoethane	19.4	0.3	µg/L	20.0		97	70-130			
1,2-Dichlorobenzene	20.7	0.5	µg/L	20.0		104	70-130			
Surrogate: Toluene-d8	*24.7*		*µg/L*	25.0		*99*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*24.8*		*µg/L*	25.0		*99*	*70-130*			
Surrogate: 1,4-Dichlorobenzene-d4	*28.2*		*µg/L*	25.2		*112*	*70-130*			

QC Qualifiers:

SPK The recovery of this analyte was outside of established control limits.

CERTIFICATE OF ANALYSIS

REPORTED TO	Morrison Hershfield Limited 310 - 4321 Still Creek Drive Burnaby, BC V5C 6S7	**TEL** **FAX**	(604) 454-0402 (604) 454-0403
ATTENTION	Josie Gilson	**WORK ORDER**	6062600
PO NUMBER		**RECEIVED / TEMP**	2016-06-30 13:30 / 15°C
PROJECT	Whistler Landfill - Summer/Winter	**REPORTED**	2016-07-11
PROJECT INFO		**COC NUMBER**	B42329

General Comments:

CARO Analytical Services employs methods which are conducted according to procedures accepted by appropriate regulatory agencies, and/or are conducted in accordance with recognized professional standards using accepted testing methodologies and quality control efforts, except where otherwise agreed to by the client.

The results in this report apply to the samples analyzed in accordance with the Chain of Custody or Sample Requisition document. This analytical report must be reproduced in its entirety. CARO is not responsible for any loss or damage resulting directly or indirectly from error or omission in the conduct of testing. Liability is limited to the cost of analysis. Samples will be disposed of 30 days after the test report has been issued unless otherwise agreed to in writing.

Authorized By: **Brent Coates, B.Sc.**
Division Manager, Richmond

If you have any questions or concerns, please contact your Account Manager:
Kathleen Fyffe, Dipl T (kfyffe@caro.ca)

ANALYSIS INFORMATION

REPORTED TO	Morrison Hershfield Limited	**WORK ORDER**	6062600
PROJECT	Whistler Landfill - Summer/Winter	**REPORTED**	2016-07-11

Analysis Description	Method Reference	Technique	Location
Alkalinity in Water	APHA 2320 B*	Titration with H2SO4	Kelowna
Ammonia, Total in Water	APHA 4500-NH3 G*	Automated Colorimetry (Phenate)	Kelowna
Anions by IC in Water	APHA 4110 B	Ion Chromatography with Chemical Suppression of Eluent Conductivity	Kelowna
Biochemical Oxygen Demand in Water	APHA 5210 B	Dissolved Oxygen Meter	Kelowna
Biochemical Oxygen Demand in Water	APHA 5210 B	Dissolved Oxygen Meter	Richmond
CCME PHC F2-F4 in Water	EPA 3511* / CCME CWS PHC*	Hexane MicroExtraction (Base/Neutral) / Gas Chromatography (GC-FID)	Richmond
Conductivity in Water	APHA 2510 B	Conductivity Meter	Kelowna
Dissolved Metals by ICPMS in Water	APHA 3030 B / APHA 3125 B	0.45 µm Filtration / Inductively Coupled Plasma Mass Spectrometry (ICP-MS)	Richmond
EPH in Water	EPA 3511* / BCMOE EPHw	Hexane MicroExtraction (Base/Neutral) / Gas Chromatography (GC-FID)	Richmond
Hardness (as CaCO3) in Water	APHA 2340 B	Calculation: 2.497 [diss Ca] + 4.118 [diss Mg]	N/A
Hardness (as CaCO3) in Water	APHA 2340 B*	Calculation: 2.497 [total Ca] + 4.118 [total Mg] (Estimated)	N/A
HEPHw in Water	BCMOE LEPH/HEPH	Calculation	N/A
LEPHw in Water	BCMOE LEPH/HEPH	Calculation	N/A
Mercury, dissolved by CVAFS in Water	EPA 245.7*	BrCl2 Oxidation / Cold Vapor Atomic Fluorescence Spectrometry (CVAFS)	Richmond
Mercury, total by CVAFS in Water	EPA 245.7*	BrCl2 Oxidation / Cold Vapor Atomic Fluorescence Spectrometry (CVAFS)	Richmond
Nitrate+Nitrite by Colorimetry in Water	APHA 4500-NO3- F	Automated Colorimetry (Cadmium Reduction)	Kelowna
Nitrite by Colorimetry in Water	APHA 4500-NO3- F	Automated Colorimetry (Cadmium Reduction)	Kelowna
Nitrogen, Total Kjeldahl in Water	APHA 4500-Norg D*	Block Digestion and Flow Injection Analysis	Kelowna
pH in Water	APHA 4500-H+ B	Electrometry	Kelowna
Phosphorus, Total by Colorimetry in Water	APHA 4500-P B.5* / APHA 4500-P F	Persulfate Digestion / Automated Colorimetry (Ascorbic Acid)	Kelowna
Polycyclic Aromatic Hydrocarbons in Water	EPA 3511* / EPA 8270D	Hexane MicroExtraction (Base/Neutral) / GC-MS (SIM)	Richmond
Solids, Total Dissolved in Water	APHA 2540 C*	Gravimetry (Dried at 103-105C)	Kelowna
Solids, Total Suspended in Water	APHA 2540 D*	Gravimetry (Dried at 103-105C)	Kelowna
Total Metals by ICPMS in Water	APHA 3030E* / APHA 3125 B	HNO3+HCl Hot Block Digestion / Inductively Coupled Plasma Mass Spectrometry (ICP-MS)	Richmond
Volatile Organic Compounds in Water	EPA 5030B / EPA 8260B	Purge&Trap / GC-MS (SIM)	Richmond

Note: An asterisk in the Method Reference indicates that the CARO method has been modified from the reference method

Method Reference Descriptions:

APHA	Standard Methods for the Examination of Water and Wastewater, 22nd Edition, American Public Health Association/American Water Works Association/Water Environment Federation
BCMOE	British Columbia Environmental Laboratory Manual, 2015, British Columbia Ministry of Environment
EPA	United States Environmental Protection Agency Test Methods

REPORTED TO	Morrison Hershfield Limited	**WORK ORDER**	6062600
PROJECT	Whistler Landfill - Summer/Winter	**REPORTED**	2016-07-11

CCME Petroleum Hydrocarbon Comments:

CARO's methods comply with the Reference Method for the CWS PHC and are validated for use.

In cases where results for both F4 and F4G are reported, the greater of the two numbers must be used in any application of the CWS PHC guidelines. The gravimetric heavy hydrocarbons cannot be added to the C6 to C50 hydrocarbons.

Unless otherwise qualified, the following quality control criteria were adhered to:

1. All extraction and analysis holding times were met.
2. F1: The C6 and C10 response factors were within 30% of the response factor for toluene.
3. F2-F4: The C10, C16, and C34 response factors were within 10% of their average.
4. F4: The C50 response factor was at least 70% of the average of the C10, C16 and C34 response factors.
5. Linearity of the gasoline and/or diesel+motor oil response was within 15% throughout the calibration range.

Glossary of Terms:

MRL	Method Reporting Limit
<	Less than the Reported Detection Limit (RDL) - the RDL may be higher than the MRL due to various factors such as dilutions, limited sample volume, high moisture, or interferences
mg/L	Milligrams per litre
pH units	pH < 7 = acidic, ph > 7 = basic
µg/L	Micrograms per litre
µS/cm	Microsiemens per centimetre

Standards / Guidelines Referenced in this Report:

BC CSR Schedule 4/5/6/11 Residential/Aquatic Water
Website: http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/375_96_00

Note: In some cases, the values displayed on the report represent the lowest guideline and are to be verified by the end user

SAMPLE ANALYTICAL DATA

REPORTED TO	Morrison Hershfield Limited	**WORK ORDER**	6062600
PROJECT	Whistler Landfill - Summer/Winter	**REPORTED**	2016-07-11

Analyte	Result / *Recovery*	Standard / Guideline	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: MW2S (6062600-01) [Water] Sampled: 2016-06-29 00:00							
Anions							
Bromide	< 0.10	N/A	0.10	mg/L	N/A	2016-07-04	
Chloride	**6.35**	1500	0.10	mg/L	N/A	2016-07-04	
Fluoride	< 0.10	2	0.1	mg/L	N/A	2016-07-04	
Nitrate+Nitrite (as N)	**0.024**	400	0.005	mg/L	N/A	2016-07-05	
Nitrite (as N)	< 0.005	0.2	0.005	mg/L	N/A	2016-07-05	HT1
Sulfate	**53.9**	1000	1.0	mg/L	N/A	2016-07-04	
General Parameters							
Alkalinity, Total (as CaCO3)	**85**	N/A	2	mg/L	N/A	2016-07-04	
Alkalinity, Phenolphthalein (as CaCO3)	< 1	N/A	2	mg/L	N/A	2016-07-04	
Alkalinity, Bicarbonate (as CaCO3)	**85**	N/A	2	mg/L	N/A	2016-07-04	
Alkalinity, Carbonate (as CaCO3)	< 1	N/A	2	mg/L	N/A	2016-07-04	
Alkalinity, Hydroxide (as CaCO3)	< 1	N/A	2	mg/L	N/A	2016-07-04	
Ammonia, Total (as N)	**3.54**	N/A	0.02	mg/L	N/A	2016-07-04	
BOD, 5-day	< 3	N/A	2	mg/L	2016-07-02	2016-07-07	BOD2
Conductivity (EC)	**307**	N/A	2	µS/cm	N/A	2016-07-04	
Nitrogen, Total Kjeldahl	**5.14**	N/A	0.05	mg/L	2016-07-06	2016-07-07	
pH	**6.84**	N/A	0.01	pH units	N/A	2016-07-04	HT2
Phosphorus, Total (as P)	**0.062**	N/A	0.002	mg/L	2016-07-06	2016-07-08	
Solids, Total Dissolved	**178**	N/A	10	mg/L	N/A	2016-07-06	
Solids, Total Suspended	**74**	N/A	2	mg/L	N/A	2016-07-06	
Calculated Parameters							
Hardness, Total (as CaCO3)	**121**	N/A	0.50	mg/L	N/A	N/A	
Nitrate (as N)	**0.024**	400	0.005	mg/L	N/A	N/A	
Nitrogen, Total	**5.16**	N/A	1.00	mg/L	N/A	N/A	
Dissolved Metals							
Aluminum, dissolved	< 0.005	N/A	0.005	mg/L	N/A	2016-07-06	
Antimony, dissolved	< 0.0001	0.2	0.0001	mg/L	N/A	2016-07-06	
Arsenic, dissolved	**0.0080**	0.05	0.0005	mg/L	N/A	2016-07-06	
Barium, dissolved	**0.076**	5	0.005	mg/L	N/A	2016-07-06	
Beryllium, dissolved	< 0.0001	0.053	0.0001	mg/L	N/A	2016-07-06	
Bismuth, dissolved	< 0.0001	N/A	0.0001	mg/L	N/A	2016-07-06	
Boron, dissolved	**0.130**	50	0.004	mg/L	N/A	2016-07-06	
Cadmium, dissolved	**0.00001**	0.0001	0.00001	mg/L	N/A	2016-07-06	
Calcium, dissolved	**36.9**	N/A	0.2	mg/L	N/A	2016-07-06	
Chromium, dissolved	< 0.0005	N/A	0.0005	mg/L	N/A	2016-07-06	
Cobalt, dissolved	**0.00228**	0.04	0.00005	mg/L	N/A	2016-07-06	
Copper, dissolved	< 0.0002	0.02	0.0002	mg/L	N/A	2016-07-06	
Iron, dissolved	**39.2**	N/A	0.010	mg/L	N/A	2016-07-06	
Lead, dissolved	< 0.0001	0.04	0.0001	mg/L	N/A	2016-07-06	
Lithium, dissolved	< 0.0001	N/A	0.0001	mg/L	N/A	2016-07-06	
Magnesium, dissolved	**6.95**	N/A	0.01	mg/L	N/A	2016-07-06	
Manganese, dissolved	**1.80**	N/A	0.0002	mg/L	N/A	2016-07-06	
Mercury, dissolved	< 0.00002	0.001	0.00002	mg/L	2016-07-04	2016-07-04	
Molybdenum, dissolved	**0.0058**	10	0.0001	mg/L	N/A	2016-07-06	

REPORTED TO	Morrison Hershfield Limited	**WORK ORDER**	6062600
PROJECT	Whistler Landfill - Summer/Winter	**REPORTED**	2016-07-11

Analyte	Result / *Recovery*	Standard / Guideline	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: MW2S (6062600-01) [Water] Sampled: 2016-06-29 00:00, Continued							
Dissolved Metals, Continued							
Nickel, dissolved	**0.0007**	0.25	0.0002	mg/L	N/A	2016-07-06	
Phosphorus, dissolved	< 0.02	N/A	0.02	mg/L	N/A	2016-07-06	
Potassium, dissolved	**8.34**	N/A	0.02	mg/L	N/A	2016-07-06	
Selenium, dissolved	< 0.0005	0.01	0.0005	mg/L	N/A	2016-07-06	
Silicon, dissolved	**10.5**	N/A	0.5	mg/L	N/A	2016-07-06	
Silver, dissolved	< 0.00005	0.0005	0.00005	mg/L	N/A	2016-07-06	
Sodium, dissolved	**8.78**	N/A	0.02	mg/L	N/A	2016-07-06	
Strontium, dissolved	**0.200**	N/A	0.001	mg/L	N/A	2016-07-06	
Sulfur, dissolved	**19**	N/A	1	mg/L	N/A	2016-07-06	
Tellurium, dissolved	< 0.0002	N/A	0.0002	mg/L	N/A	2016-07-06	
Thallium, dissolved	< 0.00002	0.003	0.00002	mg/L	N/A	2016-07-06	
Thorium, dissolved	< 0.0001	N/A	0.0001	mg/L	N/A	2016-07-06	
Tin, dissolved	< 0.0002	N/A	0.0002	mg/L	N/A	2016-07-06	
Titanium, dissolved	< 0.005	1	0.005	mg/L	N/A	2016-07-06	
Uranium, dissolved	**0.00003**	3	0.00002	mg/L	N/A	2016-07-06	
Vanadium, dissolved	< 0.001	N/A	0.001	mg/L	N/A	2016-07-06	
Zinc, dissolved	< 0.004	0.075	0.004	mg/L	N/A	2016-07-06	
Zirconium, dissolved	< 0.0001	N/A	0.0001	mg/L	N/A	2016-07-06	
Sample ID: MW2D (6062600-02) [Water] Sampled: 2016-06-29 00:00							
Anions							
Bromide	< 0.10	N/A	0.10	mg/L	N/A	2016-07-04	
Chloride	**31.2**	1500	0.10	mg/L	N/A	2016-07-04	
Fluoride	< 0.10	2	0.1	mg/L	N/A	2016-07-04	
Nitrate+Nitrite (as N)	**0.023**	400	0.005	mg/L	N/A	2016-07-05	
Nitrite (as N)	< 0.005	0.2	0.005	mg/L	N/A	2016-07-05	HT1
Sulfate	**284**	1000	1.0	mg/L	N/A	2016-07-04	
General Parameters							
Alkalinity, Total (as CaCO3)	**240**	N/A	2	mg/L	N/A	2016-07-04	
Alkalinity, Phenolphthalein (as CaCO3)	< 1	N/A	2	mg/L	N/A	2016-07-04	
Alkalinity, Bicarbonate (as CaCO3)	**240**	N/A	2	mg/L	N/A	2016-07-04	
Alkalinity, Carbonate (as CaCO3)	< 1	N/A	2	mg/L	N/A	2016-07-04	
Alkalinity, Hydroxide (as CaCO3)	< 1	N/A	2	mg/L	N/A	2016-07-04	
Ammonia, Total (as N)	**11.9**	N/A	0.02	mg/L	N/A	2016-07-04	
BOD, 5-day	**3**	N/A	2	mg/L	2016-07-02	2016-07-07	
Conductivity (EC)	**1040**	N/A	2	µS/cm	N/A	2016-07-04	
Nitrogen, Total Kjeldahl	**13.1**	N/A	0.05	mg/L	2016-07-06	2016-07-07	
pH	**6.85**	N/A	0.01	pH units	N/A	2016-07-04	HT2
Phosphorus, Total (as P)	**0.918**	N/A	0.002	mg/L	2016-07-06	2016-07-08	
Solids, Total Dissolved	**661**	N/A	10	mg/L	N/A	2016-07-06	
Solids, Total Suspended	**922**	N/A	2	mg/L	N/A	2016-07-06	
Calculated Parameters							
Hardness, Total (as CaCO3)	**459**	N/A	0.50	mg/L	N/A	N/A	

REPORTED TO	Morrison Hershfield Limited	**WORK ORDER**	6062600
PROJECT	Whistler Landfill - Summer/Winter	**REPORTED**	2016-07-11

Analyte	Result / *Recovery*	Standard / Guideline	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: MW2D (6062600-02) [Water] Sampled: 2016-06-29 00:00, Continued							
Calculated Parameters, Continued							
Nitrate (as N)	**0.023**	400	0.005	mg/L	N/A	N/A	
Nitrogen, Total	**13.1**	N/A	0.500	mg/L	N/A	N/A	
Dissolved Metals							
Aluminum, dissolved	< 0.005	N/A	0.005	mg/L	N/A	2016-07-06	
Antimony, dissolved	< 0.0001	0.2	0.0001	mg/L	N/A	2016-07-06	
Arsenic, dissolved	**0.0157**	0.05	0.0005	mg/L	N/A	2016-07-06	
Barium, dissolved	**0.031**	5	0.005	mg/L	N/A	2016-07-06	
Beryllium, dissolved	< 0.0001	0.053	0.0001	mg/L	N/A	2016-07-06	
Bismuth, dissolved	< 0.0001	N/A	0.0001	mg/L	N/A	2016-07-06	
Boron, dissolved	**0.324**	50	0.004	mg/L	N/A	2016-07-06	
Cadmium, dissolved	**0.00001**	0.0001	0.00001	mg/L	N/A	2016-07-06	
Calcium, dissolved	**152**	N/A	0.2	mg/L	N/A	2016-07-06	
Chromium, dissolved	< 0.0005	N/A	0.0005	mg/L	N/A	2016-07-06	
Cobalt, dissolved	**0.0147**	0.04	0.00005	mg/L	N/A	2016-07-06	
Copper, dissolved	< 0.0002	0.02	0.0002	mg/L	N/A	2016-07-06	
Iron, dissolved	**65.5**	N/A	0.010	mg/L	N/A	2016-07-06	
Lead, dissolved	< 0.0001	0.04	0.0001	mg/L	N/A	2016-07-06	
Lithium, dissolved	< 0.0001	N/A	0.0001	mg/L	N/A	2016-07-06	
Magnesium, dissolved	**19.2**	N/A	0.01	mg/L	N/A	2016-07-06	
Manganese, dissolved	**4.11**	N/A	0.0002	mg/L	N/A	2016-07-06	
Mercury, dissolved	< 0.00002	0.001	0.00002	mg/L	2016-07-04	2016-07-04	
Molybdenum, dissolved	**0.0164**	10	0.0001	mg/L	N/A	2016-07-06	
Nickel, dissolved	**0.0031**	0.25	0.0002	mg/L	N/A	2016-07-06	
Phosphorus, dissolved	**0.11**	N/A	0.02	mg/L	N/A	2016-07-06	
Potassium, dissolved	**21.6**	N/A	0.02	mg/L	N/A	2016-07-06	
Selenium, dissolved	< 0.0005	0.01	0.0005	mg/L	N/A	2016-07-06	
Silicon, dissolved	**17.2**	N/A	0.5	mg/L	N/A	2016-07-06	
Silver, dissolved	< 0.00005	0.0005	0.00005	mg/L	N/A	2016-07-06	
Sodium, dissolved	**36.4**	N/A	0.02	mg/L	N/A	2016-07-06	
Strontium, dissolved	**0.585**	N/A	0.001	mg/L	N/A	2016-07-06	
Sulfur, dissolved	**102**	N/A	1	mg/L	N/A	2016-07-06	
Tellurium, dissolved	< 0.0002	N/A	0.0002	mg/L	N/A	2016-07-06	
Thallium, dissolved	< 0.00002	0.003	0.00002	mg/L	N/A	2016-07-06	
Thorium, dissolved	< 0.0001	N/A	0.0001	mg/L	N/A	2016-07-06	
Tin, dissolved	< 0.0002	N/A	0.0002	mg/L	N/A	2016-07-06	
Titanium, dissolved	< 0.005	1	0.005	mg/L	N/A	2016-07-06	
Uranium, dissolved	**0.00020**	3	0.00002	mg/L	N/A	2016-07-06	
Vanadium, dissolved	< 0.001	N/A	0.001	mg/L	N/A	2016-07-06	
Zinc, dissolved	< 0.004	0.075	0.004	mg/L	N/A	2016-07-06	
Zirconium, dissolved	< 0.0001	N/A	0.0001	mg/L	N/A	2016-07-06	
Sample ID: MW3 (6062600-03) [Water] Sampled: 2016-06-29 00:00							
Anions							
Bromide	< 0.10	N/A	0.10	mg/L	N/A	2016-07-04	

REPORTED TO	Morrison Hershfield Limited	**WORK ORDER**	6062600
PROJECT	Whistler Landfill - Summer/Winter	**REPORTED**	2016-07-11

Analyte	Result / *Recovery*	Standard / Guideline	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: MW3 (6062600-03) [Water] Sampled: 2016-06-29 00:00, Continued							
Anions, Continued							
Chloride	**7.08**	1500	0.10	mg/L	N/A	2016-07-04	
Fluoride	< 0.10	2	0.1	mg/L	N/A	2016-07-04	
Nitrate+Nitrite (as N)	**0.110**	400	0.005	mg/L	N/A	2016-07-05	
Nitrite (as N)	< 0.005	0.2	0.005	mg/L	N/A	2016-07-05	HT1
Sulfate	**24.1**	1000	1.0	mg/L	N/A	2016-07-04	
General Parameters							
Alkalinity, Total (as CaCO3)	**34**	N/A	2	mg/L	N/A	2016-07-04	
Alkalinity, Phenolphthalein (as CaCO3)	< 1	N/A	2	mg/L	N/A	2016-07-04	
Alkalinity, Bicarbonate (as CaCO3)	**34**	N/A	2	mg/L	N/A	2016-07-04	
Alkalinity, Carbonate (as CaCO3)	< 1	N/A	2	mg/L	N/A	2016-07-04	
Alkalinity, Hydroxide (as CaCO3)	< 1	N/A	2	mg/L	N/A	2016-07-04	
Ammonia, Total (as N)	**0.261**	N/A	0.02	mg/L	N/A	2016-07-04	
BOD, 5-day	< 3	N/A	2	mg/L	2016-07-02	2016-07-07	BOD2
Conductivity (EC)	**148**	N/A	2	µS/cm	N/A	2016-07-04	
Nitrogen, Total Kjeldahl	**0.35**	N/A	0.05	mg/L	2016-07-06	2016-07-07	
pH	**6.62**	N/A	0.01	pH units	N/A	2016-07-04	HT2
Phosphorus, Total (as P)	**0.019**	N/A	0.002	mg/L	2016-07-06	2016-07-08	
Solids, Total Dissolved	**108**	N/A	10	mg/L	N/A	2016-07-06	
Solids, Total Suspended	**14**	N/A	2	mg/L	N/A	2016-07-06	
Calculated Parameters							
Hardness, Total (as CaCO3)	**43.3**	N/A	0.50	mg/L	N/A	N/A	
Nitrate (as N)	**0.110**	400	0.005	mg/L	N/A	N/A	
Nitrogen, Total	**0.458**	N/A	0.050	mg/L	N/A	N/A	
Dissolved Metals							
Aluminum, dissolved	**0.012**	N/A	0.005	mg/L	N/A	2016-07-06	
Antimony, dissolved	< 0.0001	0.2	0.0001	mg/L	N/A	2016-07-06	
Arsenic, dissolved	< 0.0005	0.05	0.0005	mg/L	N/A	2016-07-06	
Barium, dissolved	**0.060**	5	0.005	mg/L	N/A	2016-07-06	
Beryllium, dissolved	< 0.0001	0.053	0.0001	mg/L	N/A	2016-07-06	
Bismuth, dissolved	< 0.0001	N/A	0.0001	mg/L	N/A	2016-07-06	
Boron, dissolved	**0.015**	50	0.004	mg/L	N/A	2016-07-06	
Cadmium, dissolved	**0.00013**	0.0001	0.00001	mg/L	N/A	2016-07-06	
Calcium, dissolved	**13.5**	N/A	0.2	mg/L	N/A	2016-07-06	
Chromium, dissolved	< 0.0005	N/A	0.0005	mg/L	N/A	2016-07-06	
Cobalt, dissolved	**0.00181**	0.04	0.00005	mg/L	N/A	2016-07-06	
Copper, dissolved	**0.0021**	0.02	0.0002	mg/L	N/A	2016-07-06	
Iron, dissolved	**0.082**	N/A	0.010	mg/L	N/A	2016-07-06	
Lead, dissolved	< 0.0001	0.04	0.0001	mg/L	N/A	2016-07-06	
Lithium, dissolved	**0.0001**	N/A	0.0001	mg/L	N/A	2016-07-06	
Magnesium, dissolved	**2.29**	N/A	0.01	mg/L	N/A	2016-07-06	
Manganese, dissolved	**0.924**	N/A	0.0002	mg/L	N/A	2016-07-06	
Mercury, dissolved	< 0.00002	0.001	0.00002	mg/L	2016-07-04	2016-07-04	
Molybdenum, dissolved	**0.0013**	10	0.0001	mg/L	N/A	2016-07-06	
Nickel, dissolved	**0.0005**	0.25	0.0002	mg/L	N/A	2016-07-06	

REPORTED TO	Morrison Hershfield Limited	**WORK ORDER**	6062600
PROJECT	Whistler Landfill - Summer/Winter	**REPORTED**	2016-07-11

Analyte	Result / *Recovery*	Standard / Guideline	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: MW3 (6062600-03) [Water] Sampled: 2016-06-29 00:00, Continued							
Dissolved Metals, Continued							
Phosphorus, dissolved	< 0.02	N/A	0.02	mg/L	N/A	2016-07-06	
Potassium, dissolved	**3.27**	N/A	0.02	mg/L	N/A	2016-07-06	
Selenium, dissolved	< 0.0005	0.01	0.0005	mg/L	N/A	2016-07-06	
Silicon, dissolved	**8.3**	N/A	0.5	mg/L	N/A	2016-07-06	
Silver, dissolved	< 0.00005	0.0005	0.00005	mg/L	N/A	2016-07-06	
Sodium, dissolved	**10.0**	N/A	0.02	mg/L	N/A	2016-07-06	
Strontium, dissolved	**0.123**	N/A	0.001	mg/L	N/A	2016-07-06	
Sulfur, dissolved	**7**	N/A	1	mg/L	N/A	2016-07-06	
Tellurium, dissolved	< 0.0002	N/A	0.0002	mg/L	N/A	2016-07-06	
Thallium, dissolved	**0.00007**	0.003	0.00002	mg/L	N/A	2016-07-06	
Thorium, dissolved	< 0.0001	N/A	0.0001	mg/L	N/A	2016-07-06	
Tin, dissolved	< 0.0002	N/A	0.0002	mg/L	N/A	2016-07-06	
Titanium, dissolved	< 0.005	1	0.005	mg/L	N/A	2016-07-06	
Uranium, dissolved	< 0.00002	3	0.00002	mg/L	N/A	2016-07-06	
Vanadium, dissolved	< 0.001	N/A	0.001	mg/L	N/A	2016-07-06	
Zinc, dissolved	< 0.004	0.075	0.004	mg/L	N/A	2016-07-06	
Zirconium, dissolved	< 0.0001	N/A	0.0001	mg/L	N/A	2016-07-06	
Sample ID: MW4 (6062600-04) [Water] Sampled: 2016-06-29 00:00							
Anions							
Bromide	< 0.10	N/A	0.10	mg/L	N/A	2016-07-04	
Chloride	**15.1**	1500	0.10	mg/L	N/A	2016-07-04	
Fluoride	< 0.10	2	0.1	mg/L	N/A	2016-07-04	
Nitrate+Nitrite (as N)	**0.018**	400	0.005	mg/L	N/A	2016-07-05	
Nitrite (as N)	< 0.005	0.2	0.005	mg/L	N/A	2016-07-05	HT1
Sulfate	**45.8**	1000	1.0	mg/L	N/A	2016-07-04	
General Parameters							
Alkalinity, Total (as CaCO3)	**112**	N/A	2	mg/L	N/A	2016-07-04	
Alkalinity, Phenolphthalein (as CaCO3)	< 1	N/A	2	mg/L	N/A	2016-07-04	
Alkalinity, Bicarbonate (as CaCO3)	**112**	N/A	2	mg/L	N/A	2016-07-04	
Alkalinity, Carbonate (as CaCO3)	< 1	N/A	2	mg/L	N/A	2016-07-04	
Alkalinity, Hydroxide (as CaCO3)	< 1	N/A	2	mg/L	N/A	2016-07-04	
Ammonia, Total (as N)	**2.09**	N/A	0.02	mg/L	N/A	2016-07-04	
BOD, 5-day	< 3	N/A	2	mg/L	2016-07-02	2016-07-07	BOD2
Conductivity (EC)	**360**	N/A	2	µS/cm	N/A	2016-07-04	
Nitrogen, Total Kjeldahl	**2.82**	N/A	0.05	mg/L	2016-07-06	2016-07-07	
pH	**6.76**	N/A	0.01	pH units	N/A	2016-07-04	HT2
Phosphorus, Total (as P)	**0.216**	N/A	0.002	mg/L	2016-07-06	2016-07-08	
Solids, Total Dissolved	**211**	N/A	10	mg/L	N/A	2016-07-06	
Solids, Total Suspended	**458**	N/A	2	mg/L	N/A	2016-07-06	
Calculated Parameters							
Hardness, Total (as CaCO3)	**136**	N/A	0.50	mg/L	N/A	N/A	
Nitrate (as N)	**0.018**	400	0.005	mg/L	N/A	N/A	

REPORTED TO	Morrison Hershfield Limited	**WORK ORDER**	6062600
PROJECT	Whistler Landfill - Summer/Winter	**REPORTED**	2016-07-11

Analyte	Result / *Recovery*	Standard / Guideline	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: MW4 (6062600-04) [Water] Sampled: 2016-06-29 00:00, Continued							
Calculated Parameters, Continued							
Nitrogen, Total	**2.84**	N/A	0.500	mg/L	N/A	N/A	
Dissolved Metals							
Aluminum, dissolved	< 0.005	N/A	0.005	mg/L	N/A	2016-07-06	
Antimony, dissolved	< 0.0001	0.2	0.0001	mg/L	N/A	2016-07-06	
Arsenic, dissolved	**0.0053**	0.05	0.0005	mg/L	N/A	2016-07-06	
Barium, dissolved	**0.169**	5	0.005	mg/L	N/A	2016-07-06	
Beryllium, dissolved	< 0.0001	0.053	0.0001	mg/L	N/A	2016-07-06	
Bismuth, dissolved	< 0.0001	N/A	0.0001	mg/L	N/A	2016-07-06	
Boron, dissolved	**0.065**	50	0.004	mg/L	N/A	2016-07-06	
Cadmium, dissolved	**0.00046**	0.0001	0.00001	mg/L	N/A	2016-07-06	
Calcium, dissolved	**43.9**	N/A	0.2	mg/L	N/A	2016-07-06	
Chromium, dissolved	< 0.0005	N/A	0.0005	mg/L	N/A	2016-07-06	
Cobalt, dissolved	**0.0313**	0.04	0.00005	mg/L	N/A	2016-07-06	
Copper, dissolved	**0.0009**	0.02	0.0002	mg/L	N/A	2016-07-06	
Iron, dissolved	**41.2**	N/A	0.010	mg/L	N/A	2016-07-06	
Lead, dissolved	< 0.0001	0.04	0.0001	mg/L	N/A	2016-07-06	
Lithium, dissolved	**0.0001**	N/A	0.0001	mg/L	N/A	2016-07-06	
Magnesium, dissolved	**6.46**	N/A	0.01	mg/L	N/A	2016-07-06	
Manganese, dissolved	**3.01**	N/A	0.0002	mg/L	N/A	2016-07-06	
Mercury, dissolved	< 0.00002	0.001	0.00002	mg/L	2016-07-04	2016-07-04	
Molybdenum, dissolved	**0.0159**	10	0.0001	mg/L	N/A	2016-07-06	
Nickel, dissolved	**0.0037**	0.25	0.0002	mg/L	N/A	2016-07-06	
Phosphorus, dissolved	< 0.02	N/A	0.02	mg/L	N/A	2016-07-06	
Potassium, dissolved	**6.50**	N/A	0.02	mg/L	N/A	2016-07-06	
Selenium, dissolved	< 0.0005	0.01	0.0005	mg/L	N/A	2016-07-06	
Silicon, dissolved	**11.7**	N/A	0.5	mg/L	N/A	2016-07-06	
Silver, dissolved	< 0.00005	0.0005	0.00005	mg/L	N/A	2016-07-06	
Sodium, dissolved	**17.8**	N/A	0.02	mg/L	N/A	2016-07-06	
Strontium, dissolved	**0.249**	N/A	0.001	mg/L	N/A	2016-07-06	
Sulfur, dissolved	**17**	N/A	1	mg/L	N/A	2016-07-06	
Tellurium, dissolved	< 0.0002	N/A	0.0002	mg/L	N/A	2016-07-06	
Thallium, dissolved	**0.00004**	0.003	0.00002	mg/L	N/A	2016-07-06	
Thorium, dissolved	< 0.0001	N/A	0.0001	mg/L	N/A	2016-07-06	
Tin, dissolved	< 0.0002	N/A	0.0002	mg/L	N/A	2016-07-06	
Titanium, dissolved	< 0.005	1	0.005	mg/L	N/A	2016-07-06	
Uranium, dissolved	**0.00017**	3	0.00002	mg/L	N/A	2016-07-06	
Vanadium, dissolved	< 0.001	N/A	0.001	mg/L	N/A	2016-07-06	
Zinc, dissolved	**0.006**	0.075	0.004	mg/L	N/A	2016-07-06	
Zirconium, dissolved	< 0.0001	N/A	0.0001	mg/L	N/A	2016-07-06	
Sample ID: MW6 (6062600-05) [Water] Sampled: 2016-06-29 00:00							
Anions							
Bromide	< 0.10	N/A	0.10	mg/L	N/A	2016-07-04	
Chloride	**180**	1500	0.10	mg/L	N/A	2016-07-04	

REPORTED TO	Morrison Hershfield Limited	**WORK ORDER**	6062600
PROJECT	Whistler Landfill - Summer/Winter	**REPORTED**	2016-07-11

Analyte	Result / *Recovery*	Standard / Guideline	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: MW6 (6062600-05) [Water] Sampled: 2016-06-29 00:00, Continued							
Anions, Continued							
Fluoride	< 0.10	2	0.1	mg/L	N/A	2016-07-04	
Nitrate+Nitrite (as N)	**0.040**	400	0.005	mg/L	N/A	2016-07-05	
Nitrite (as N)	< 0.005	0.2	0.005	mg/L	N/A	2016-07-05	HT1
Sulfate	**121**	1000	1.0	mg/L	N/A	2016-07-04	
General Parameters							
Alkalinity, Total (as CaCO3)	**6**	N/A	2	mg/L	N/A	2016-07-04	
Alkalinity, Phenolphthalein (as CaCO3)	< 1	N/A	2	mg/L	N/A	2016-07-04	
Alkalinity, Bicarbonate (as CaCO3)	**6**	N/A	2	mg/L	N/A	2016-07-04	
Alkalinity, Carbonate (as CaCO3)	< 1	N/A	2	mg/L	N/A	2016-07-04	
Alkalinity, Hydroxide (as CaCO3)	< 1	N/A	2	mg/L	N/A	2016-07-04	
Ammonia, Total (as N)	**0.033**	N/A	0.02	mg/L	N/A	2016-07-04	
BOD, 5-day	< 3	N/A	2	mg/L	2016-07-02	2016-07-07	BOD2
Conductivity (EC)	**828**	N/A	2	µS/cm	N/A	2016-07-04	
Nitrogen, Total Kjeldahl	**0.60**	N/A	0.05	mg/L	2016-07-06	2016-07-07	
pH	**5.89**	N/A	0.01	pH units	N/A	2016-07-04	HT2
Phosphorus, Total (as P)	**0.625**	N/A	0.002	mg/L	2016-07-06	2016-07-08	
Solids, Total Dissolved	**486**	N/A	10	mg/L	N/A	2016-07-06	
Solids, Total Suspended	**343**	N/A	2	mg/L	N/A	2016-07-06	
Calculated Parameters							
Hardness, Total (as CaCO3)	**156**	N/A	0.50	mg/L	N/A	N/A	
Nitrate (as N)	**0.040**	400	0.005	mg/L	N/A	N/A	
Nitrogen, Total	**0.645**	N/A	0.050	mg/L	N/A	N/A	
Dissolved Metals							
Aluminum, dissolved	**0.207**	N/A	0.005	mg/L	N/A	2016-07-06	
Antimony, dissolved	< 0.0001	0.2	0.0001	mg/L	N/A	2016-07-06	
Arsenic, dissolved	< 0.0005	0.05	0.0005	mg/L	N/A	2016-07-06	
Barium, dissolved	**0.056**	5	0.005	mg/L	N/A	2016-07-06	
Beryllium, dissolved	< 0.0001	0.053	0.0001	mg/L	N/A	2016-07-06	
Bismuth, dissolved	< 0.0001	N/A	0.0001	mg/L	N/A	2016-07-06	
Boron, dissolved	**0.013**	50	0.004	mg/L	N/A	2016-07-06	
Cadmium, dissolved	**0.00038**	0.0001	0.00001	mg/L	N/A	2016-07-06	
Calcium, dissolved	**50.3**	N/A	0.2	mg/L	N/A	2016-07-06	
Chromium, dissolved	< 0.0005	N/A	0.0005	mg/L	N/A	2016-07-06	
Cobalt, dissolved	**0.00144**	0.04	0.00005	mg/L	N/A	2016-07-06	
Copper, dissolved	**0.0033**	0.02	0.0002	mg/L	N/A	2016-07-06	
Iron, dissolved	**0.080**	N/A	0.010	mg/L	N/A	2016-07-06	
Lead, dissolved	< 0.0001	0.04	0.0001	mg/L	N/A	2016-07-06	
Lithium, dissolved	< 0.0001	N/A	0.0001	mg/L	N/A	2016-07-06	
Magnesium, dissolved	**7.45**	N/A	0.01	mg/L	N/A	2016-07-06	
Manganese, dissolved	**0.622**	N/A	0.0002	mg/L	N/A	2016-07-06	
Mercury, dissolved	< 0.00002	0.001	0.00002	mg/L	2016-07-04	2016-07-04	
Molybdenum, dissolved	< 0.0001	10	0.0001	mg/L	N/A	2016-07-06	
Nickel, dissolved	**0.0033**	0.25	0.0002	mg/L	N/A	2016-07-06	
Phosphorus, dissolved	< 0.02	N/A	0.02	mg/L	N/A	2016-07-06	

REPORTED TO	Morrison Hershfield Limited	**WORK ORDER**	6062600
PROJECT	Whistler Landfill - Summer/Winter	**REPORTED**	2016-07-11

Analyte	Result / *Recovery*	Standard / Guideline	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: MW6 (6062600-05) [Water] Sampled: 2016-06-29 00:00, Continued							
Dissolved Metals, Continued							
Potassium, dissolved	**4.61**	N/A	0.02	mg/L	N/A	2016-07-06	
Selenium, dissolved	< 0.0005	0.01	0.0005	mg/L	N/A	2016-07-06	
Silicon, dissolved	**9.9**	N/A	0.5	mg/L	N/A	2016-07-06	
Silver, dissolved	**0.00006**	0.0005	0.00005	mg/L	N/A	2016-07-06	
Sodium, dissolved	**113**	N/A	0.02	mg/L	N/A	2016-07-06	
Strontium, dissolved	**0.678**	N/A	0.001	mg/L	N/A	2016-07-06	
Sulfur, dissolved	**40**	N/A	1	mg/L	N/A	2016-07-06	
Tellurium, dissolved	< 0.0002	N/A	0.0002	mg/L	N/A	2016-07-06	
Thallium, dissolved	**0.00005**	0.003	0.00002	mg/L	N/A	2016-07-06	
Thorium, dissolved	< 0.0001	N/A	0.0001	mg/L	N/A	2016-07-06	
Tin, dissolved	< 0.0002	N/A	0.0002	mg/L	N/A	2016-07-06	
Titanium, dissolved	< 0.005	1	0.005	mg/L	N/A	2016-07-06	
Uranium, dissolved	**0.00004**	3	0.00002	mg/L	N/A	2016-07-06	
Vanadium, dissolved	< 0.001	N/A	0.001	mg/L	N/A	2016-07-06	
Zinc, dissolved	< 0.004	0.075	0.004	mg/L	N/A	2016-07-06	
Zirconium, dissolved	< 0.0001	N/A	0.0001	mg/L	N/A	2016-07-06	
Sample ID: MW6 Dup (6062600-06) [Water] Sampled: 2016-06-29 00:00							
Anions							
Bromide	< 0.10	N/A	0.10	mg/L	N/A	2016-07-04	
Chloride	**183**	1500	0.10	mg/L	N/A	2016-07-04	
Fluoride	**0.11**	2	0.1	mg/L	N/A	2016-07-04	
Nitrate+Nitrite (as N)	**0.034**	400	0.005	mg/L	N/A	2016-07-05	
Nitrite (as N)	< 0.005	0.2	0.005	mg/L	N/A	2016-07-05	HT1
Sulfate	**118**	1000	1.0	mg/L	N/A	2016-07-04	
General Parameters							
Alkalinity, Total (as CaCO3)	**7**	N/A	2	mg/L	N/A	2016-07-04	
Alkalinity, Phenolphthalein (as CaCO3)	< 1	N/A	2	mg/L	N/A	2016-07-04	
Alkalinity, Bicarbonate (as CaCO3)	**7**	N/A	2	mg/L	N/A	2016-07-04	
Alkalinity, Carbonate (as CaCO3)	< 1	N/A	2	mg/L	N/A	2016-07-04	
Alkalinity, Hydroxide (as CaCO3)	< 1	N/A	2	mg/L	N/A	2016-07-04	
Ammonia, Total (as N)	**0.036**	N/A	0.02	mg/L	N/A	2016-07-04	
BOD, 5-day	< 3	N/A	2	mg/L	2016-07-02	2016-07-07	BOD2
Conductivity (EC)	**832**	N/A	2	µS/cm	N/A	2016-07-04	
Nitrogen, Total Kjeldahl	**0.48**	N/A	0.05	mg/L	2016-07-06	2016-07-07	
pH	**5.77**	N/A	0.01	pH units	N/A	2016-07-04	HT2
Phosphorus, Total (as P)	**0.458**	N/A	0.002	mg/L	2016-07-06	2016-07-08	
Solids, Total Dissolved	**494**	N/A	10	mg/L	N/A	2016-07-06	
Solids, Total Suspended	**328**	N/A	2	mg/L	N/A	2016-07-06	
Calculated Parameters							
Hardness, Total (as CaCO3)	**158**	N/A	0.50	mg/L	N/A	N/A	
Nitrate (as N)	**0.034**	400	0.005	mg/L	N/A	N/A	
Nitrogen, Total	**0.516**	N/A	0.050	mg/L	N/A	N/A	

REPORTED TO	Morrison Hershfield Limited	**WORK ORDER**	6062600
PROJECT	Whistler Landfill - Summer/Winter	**REPORTED**	2016-07-11

Analyte	Result / *Recovery*	Standard / Guideline	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: MW6 Dup (6062600-06) [Water] Sampled: 2016-06-29 00:00, Continued							
Dissolved Metals							
Aluminum, dissolved	**0.199**	N/A	0.005	mg/L	N/A	2016-07-06	
Antimony, dissolved	< 0.0001	0.2	0.0001	mg/L	N/A	2016-07-06	
Arsenic, dissolved	< 0.0005	0.05	0.0005	mg/L	N/A	2016-07-06	
Barium, dissolved	**0.055**	5	0.005	mg/L	N/A	2016-07-06	
Beryllium, dissolved	< 0.0001	0.053	0.0001	mg/L	N/A	2016-07-06	
Bismuth, dissolved	< 0.0001	N/A	0.0001	mg/L	N/A	2016-07-06	
Boron, dissolved	**0.012**	50	0.004	mg/L	N/A	2016-07-06	
Cadmium, dissolved	**0.00038**	0.0001	0.00001	mg/L	N/A	2016-07-06	
Calcium, dissolved	**51.2**	N/A	0.2	mg/L	N/A	2016-07-06	
Chromium, dissolved	**0.0007**	N/A	0.0005	mg/L	N/A	2016-07-06	
Cobalt, dissolved	**0.00140**	0.04	0.00005	mg/L	N/A	2016-07-06	
Copper, dissolved	**0.0031**	0.02	0.0002	mg/L	N/A	2016-07-06	
Iron, dissolved	**0.056**	N/A	0.010	mg/L	N/A	2016-07-06	
Lead, dissolved	< 0.0001	0.04	0.0001	mg/L	N/A	2016-07-06	
Lithium, dissolved	**0.0001**	N/A	0.0001	mg/L	N/A	2016-07-06	
Magnesium, dissolved	**7.39**	N/A	0.01	mg/L	N/A	2016-07-06	
Manganese, dissolved	**0.614**	N/A	0.0002	mg/L	N/A	2016-07-06	
Mercury, dissolved	< 0.00002	0.001	0.00002	mg/L	2016-07-04	2016-07-04	
Molybdenum, dissolved	**0.0001**	10	0.0001	mg/L	N/A	2016-07-06	
Nickel, dissolved	**0.0036**	0.25	0.0002	mg/L	N/A	2016-07-06	
Phosphorus, dissolved	< 0.02	N/A	0.02	mg/L	N/A	2016-07-06	
Potassium, dissolved	**4.58**	N/A	0.02	mg/L	N/A	2016-07-06	
Selenium, dissolved	< 0.0005	0.01	0.0005	mg/L	N/A	2016-07-06	
Silicon, dissolved	**9.9**	N/A	0.5	mg/L	N/A	2016-07-06	
Silver, dissolved	< 0.00005	0.0005	0.00005	mg/L	N/A	2016-07-06	
Sodium, dissolved	**112**	N/A	0.02	mg/L	N/A	2016-07-06	
Strontium, dissolved	**0.672**	N/A	0.001	mg/L	N/A	2016-07-06	
Sulfur, dissolved	**41**	N/A	1	mg/L	N/A	2016-07-06	
Tellurium, dissolved	< 0.0002	N/A	0.0002	mg/L	N/A	2016-07-06	
Thallium, dissolved	**0.00005**	0.003	0.00002	mg/L	N/A	2016-07-06	
Thorium, dissolved	< 0.0001	N/A	0.0001	mg/L	N/A	2016-07-06	
Tin, dissolved	< 0.0002	N/A	0.0002	mg/L	N/A	2016-07-06	
Titanium, dissolved	< 0.005	1	0.005	mg/L	N/A	2016-07-06	
Uranium, dissolved	**0.00003**	3	0.00002	mg/L	N/A	2016-07-06	
Vanadium, dissolved	< 0.001	N/A	0.001	mg/L	N/A	2016-07-06	
Zinc, dissolved	**0.005**	0.075	0.004	mg/L	N/A	2016-07-06	
Zirconium, dissolved	< 0.0001	N/A	0.0001	mg/L	N/A	2016-07-06	
Sample ID: SFC 2 (6062600-07) [Water] Sampled: 2016-06-29 00:00							
Anions							
Bromide	< 0.10	N/A	0.10	mg/L	N/A	2016-07-04	
Chloride	**13.3**	1500	0.10	mg/L	N/A	2016-07-04	
Fluoride	< 0.10	2	0.1	mg/L	N/A	2016-07-04	
Nitrate+Nitrite (as N)	**0.133**	400	0.005	mg/L	N/A	2016-07-05	

REPORTED TO	Morrison Hershfield Limited	**WORK ORDER**	6062600
PROJECT	Whistler Landfill - Summer/Winter	**REPORTED**	2016-07-11

Analyte	Result / *Recovery*	Standard / Guideline	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: SFC 2 (6062600-07) [Water] Sampled: 2016-06-29 00:00, Continued							
Anions, Continued							
Nitrite (as N)	< 0.005	0.2	0.005	mg/L	N/A	2016-07-05	HT1
Sulfate	**57.1**	1000	1.0	mg/L	N/A	2016-07-04	
General Parameters							
Alkalinity, Total (as CaCO3)	**61**	N/A	2	mg/L	N/A	2016-07-04	
Alkalinity, Phenolphthalein (as CaCO3)	< 1	N/A	2	mg/L	N/A	2016-07-04	
Alkalinity, Bicarbonate (as CaCO3)	**61**	N/A	2	mg/L	N/A	2016-07-04	
Alkalinity, Carbonate (as CaCO3)	< 1	N/A	2	mg/L	N/A	2016-07-04	
Alkalinity, Hydroxide (as CaCO3)	< 1	N/A	2	mg/L	N/A	2016-07-04	
Ammonia, Total (as N)	**0.611**	N/A	0.02	mg/L	N/A	2016-07-04	
BOD, 5-day	< 3	N/A	2	mg/L	2016-07-02	2016-07-07	BOD2
Conductivity (EC)	**288**	N/A	2	µS/cm	N/A	2016-07-04	
Nitrogen, Total Kjeldahl	**0.60**	N/A	0.05	mg/L	2016-07-06	2016-07-07	
pH	**6.97**	N/A	0.01	pH units	N/A	2016-07-04	HT2
Phosphorus, Total (as P)	**0.007**	N/A	0.002	mg/L	2016-07-06	2016-07-08	
Solids, Total Dissolved	**175**	N/A	10	mg/L	N/A	2016-07-06	
Solids, Total Suspended	**6**	N/A	2	mg/L	N/A	2016-07-06	
Calculated Parameters							
Hardness, Total (as CaCO3)	**94.7**	N/A	0.50	mg/L	N/A	N/A	
Nitrate (as N)	**0.133**	400	0.025	mg/L	N/A	N/A	
Nitrogen, Total	**0.735**	N/A	0.050	mg/L	N/A	N/A	
Total Metals							
Aluminum, total	**0.173**	N/A	0.005	mg/L	2016-07-04	2016-07-05	
Antimony, total	< 0.0001	0.2	0.0001	mg/L	2016-07-04	2016-07-05	
Arsenic, total	< 0.0005	0.05	0.0005	mg/L	2016-07-04	2016-07-05	
Barium, total	**0.049**	5	0.005	mg/L	2016-07-04	2016-07-05	
Beryllium, total	< 0.0001	0.053	0.0001	mg/L	2016-07-04	2016-07-05	
Bismuth, total	< 0.0001	N/A	0.0001	mg/L	2016-07-04	2016-07-05	
Boron, total	**0.045**	50	0.004	mg/L	2016-07-04	2016-07-05	
Cadmium, total	**0.00004**	0.0001	0.00001	mg/L	2016-07-04	2016-07-05	
Calcium, total	**32.5**	N/A	0.2	mg/L	2016-07-04	2016-07-05	
Chromium, total	**0.0006**	N/A	0.0005	mg/L	2016-07-04	2016-07-05	
Cobalt, total	**0.00731**	0.04	0.00005	mg/L	2016-07-04	2016-07-05	
Copper, total	**0.0034**	0.02	0.0002	mg/L	2016-07-04	2016-07-05	
Iron, total	**4.41**	N/A	0.01	mg/L	2016-07-04	2016-07-05	
Lead, total	< 0.0001	0.04	0.0001	mg/L	2016-07-04	2016-07-05	
Lithium, total	**0.0002**	N/A	0.0001	mg/L	2016-07-04	2016-07-05	
Magnesium, total	**3.28**	N/A	0.01	mg/L	2016-07-04	2016-07-05	
Manganese, total	**1.87**	N/A	0.0002	mg/L	2016-07-04	2016-07-05	
Mercury, total	< 0.00002	0.001	0.00002	mg/L	2016-07-04	2016-07-04	
Molybdenum, total	**0.0022**	10	0.0001	mg/L	2016-07-04	2016-07-05	
Nickel, total	**0.0014**	0.25	0.0002	mg/L	2016-07-04	2016-07-05	
Phosphorus, total	< 0.02	N/A	0.02	mg/L	2016-07-04	2016-07-05	
Potassium, total	**2.58**	N/A	0.02	mg/L	2016-07-04	2016-07-05	
Selenium, total	< 0.0005	0.01	0.0005	mg/L	2016-07-04	2016-07-05	

REPORTED TO	Morrison Hershfield Limited	**WORK ORDER**	6062600
PROJECT	Whistler Landfill - Summer/Winter	**REPORTED**	2016-07-11

Analyte	Result / *Recovery*	Standard / Guideline	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: SFC 2 (6062600-07) [Water] Sampled: 2016-06-29 00:00, Continued							
Total Metals, Continued							
Silicon, total	**5.0**	N/A	0.5	mg/L	2016-07-04	2016-07-05	
Silver, total	< 0.00005	0.0005	0.00005	mg/L	2016-07-04	2016-07-05	
Sodium, total	**11.0**	N/A	0.02	mg/L	2016-07-04	2016-07-05	
Strontium, total	**0.208**	N/A	0.001	mg/L	2016-07-04	2016-07-05	
Sulfur, total	**15**	N/A	1	mg/L	2016-07-04	2016-07-05	
Tellurium, total	< 0.0002	N/A	0.0002	mg/L	2016-07-04	2016-07-05	
Thallium, total	< 0.00002	0.003	0.00002	mg/L	2016-07-04	2016-07-05	
Thorium, total	< 0.0001	N/A	0.0001	mg/L	2016-07-04	2016-07-05	
Tin, total	< 0.0002	N/A	0.0002	mg/L	2016-07-04	2016-07-05	
Titanium, total	< 0.005	1	0.005	mg/L	2016-07-04	2016-07-05	
Uranium, total	< 0.00002	3	0.00002	mg/L	2016-07-04	2016-07-05	
Vanadium, total	< 0.001	N/A	0.001	mg/L	2016-07-04	2016-07-05	
Zinc, total	**0.004**	0.075	0.004	mg/L	2016-07-04	2016-07-05	
Zirconium, total	< 0.0001	N/A	0.0001	mg/L	2016-07-04	2016-07-05	
Sample ID: SFC 2B (6062600-08) [Water] Sampled: 2016-06-29 00:00							
Anions							
Bromide	< 0.10	N/A	0.10	mg/L	N/A	2016-07-04	
Chloride	**15.9**	1500	0.10	mg/L	N/A	2016-07-04	
Fluoride	**0.32**	2	0.1	mg/L	N/A	2016-07-04	
Nitrate+Nitrite (as N)	< 0.005	400	0.005	mg/L	N/A	2016-07-05	
Nitrite (as N)	< 0.005	0.2	0.005	mg/L	N/A	2016-07-05	HT1
Sulfate	**732**	1000	1.0	mg/L	N/A	2016-07-04	
General Parameters							
Alkalinity, Total (as CaCO3)	< 1	N/A	2	mg/L	N/A	2016-07-04	
Alkalinity, Phenolphthalein (as CaCO3)	< 1	N/A	2	mg/L	N/A	2016-07-04	
Alkalinity, Bicarbonate (as CaCO3)	< 1	N/A	2	mg/L	N/A	2016-07-04	
Alkalinity, Carbonate (as CaCO3)	< 1	N/A	2	mg/L	N/A	2016-07-04	
Alkalinity, Hydroxide (as CaCO3)	< 1	N/A	2	mg/L	N/A	2016-07-04	
Ammonia, Total (as N)	**3.02**	N/A	0.02	mg/L	N/A	2016-07-04	
BOD, 5-day	< 2	N/A	2	mg/L	2016-07-04	2016-07-09	HT1
Conductivity (EC)	**1540**	N/A	2	µS/cm	N/A	2016-07-04	
Nitrogen, Total Kjeldahl	**3.47**	N/A	0.05	mg/L	2016-07-06	2016-07-07	
pH	**2.91**	N/A	0.01	pH units	N/A	2016-07-04	HT2
Phosphorus, Total (as P)	**0.038**	N/A	0.002	mg/L	2016-07-06	2016-07-08	
Solids, Total Dissolved	**1020**	N/A	10	mg/L	N/A	2016-07-06	
Solids, Total Suspended	**19**	N/A	2	mg/L	N/A	2016-07-06	
Calculated Parameters							
Hardness, Total (as CaCO3)	**364**	N/A	0.50	mg/L	N/A	N/A	
Nitrate (as N)	< 0.005	400	0.005	mg/L	N/A	N/A	
Nitrogen, Total	**3.47**	N/A	0.500	mg/L	N/A	N/A	
Total Metals							
Aluminum, total	**10.3**	N/A	0.005	mg/L	2016-07-04	2016-07-05	

REPORTED TO	Morrison Hershfield Limited	**WORK ORDER**	6062600
PROJECT	Whistler Landfill - Summer/Winter	**REPORTED**	2016-07-11

Analyte	Result / *Recovery*	Standard / Guideline	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: SFC 2B (6062600-08) [Water] Sampled: 2016-06-29 00:00, Continued							
Total Metals, Continued							
Antimony, total	**0.0002**	0.2	0.0001	mg/L	2016-07-04	2016-07-05	
Arsenic, total	**0.0006**	0.05	0.0005	mg/L	2016-07-04	2016-07-05	
Barium, total	**0.041**	5	0.005	mg/L	2016-07-04	2016-07-05	
Beryllium, total	**0.0005**	0.053	0.0001	mg/L	2016-07-04	2016-07-05	
Bismuth, total	< 0.0001	N/A	0.0001	mg/L	2016-07-04	2016-07-05	
Boron, total	**0.025**	50	0.004	mg/L	2016-07-04	2016-07-05	
Cadmium, total	**0.00020**	0.0001	0.00001	mg/L	2016-07-04	2016-07-05	
Calcium, total	**98.2**	N/A	0.2	mg/L	2016-07-04	2016-07-05	
Chromium, total	**0.0006**	N/A	0.0005	mg/L	2016-07-04	2016-07-05	
Cobalt, total	**0.102**	0.04	0.00005	mg/L	2016-07-04	2016-07-05	
Copper, total	**0.0582**	0.02	0.0002	mg/L	2016-07-04	2016-07-05	
Iron, total	**77.0**	N/A	0.01	mg/L	2016-07-04	2016-07-05	
Lead, total	< 0.0001	0.04	0.0001	mg/L	2016-07-04	2016-07-05	
Lithium, total	**0.0063**	N/A	0.0001	mg/L	2016-07-04	2016-07-05	
Magnesium, total	**28.7**	N/A	0.01	mg/L	2016-07-04	2016-07-05	
Manganese, total	**9.53**	N/A	0.0002	mg/L	2016-07-04	2016-07-05	
Mercury, total	< 0.00002	0.001	0.00002	mg/L	2016-07-04	2016-07-04	
Molybdenum, total	< 0.0001	10	0.0001	mg/L	2016-07-04	2016-07-05	
Nickel, total	**0.0343**	0.25	0.0002	mg/L	2016-07-04	2016-07-05	
Phosphorus, total	< 0.02	N/A	0.02	mg/L	2016-07-04	2016-07-05	
Potassium, total	**3.37**	N/A	0.02	mg/L	2016-07-04	2016-07-05	
Selenium, total	< 0.0005	0.01	0.0005	mg/L	2016-07-04	2016-07-05	
Silicon, total	**13.7**	N/A	0.5	mg/L	2016-07-04	2016-07-05	
Silver, total	< 0.00005	0.0005	0.00005	mg/L	2016-07-04	2016-07-05	
Sodium, total	**12.6**	N/A	0.02	mg/L	2016-07-04	2016-07-05	
Strontium, total	**0.456**	N/A	0.001	mg/L	2016-07-04	2016-07-05	
Sulfur, total	**200**	N/A	1	mg/L	2016-07-04	2016-07-05	
Tellurium, total	< 0.0002	N/A	0.0002	mg/L	2016-07-04	2016-07-05	
Thallium, total	< 0.00002	0.003	0.00002	mg/L	2016-07-04	2016-07-05	
Thorium, total	**0.0003**	N/A	0.0001	mg/L	2016-07-04	2016-07-05	
Tin, total	< 0.0002	N/A	0.0002	mg/L	2016-07-04	2016-07-05	
Titanium, total	< 0.005	1	0.005	mg/L	2016-07-04	2016-07-05	
Uranium, total	**0.00031**	3	0.00002	mg/L	2016-07-04	2016-07-05	
Vanadium, total	< 0.001	N/A	0.001	mg/L	2016-07-04	2016-07-05	
Zinc, total	**0.059**	0.075	0.004	mg/L	2016-07-04	2016-07-05	
Zirconium, total	< 0.0001	N/A	0.0001	mg/L	2016-07-04	2016-07-05	
Sample ID: SFC 3 (6062600-09) [Water] Sampled: 2016-06-29 00:00							
Anions							
Bromide	< 0.10	N/A	0.10	mg/L	N/A	2016-07-04	
Chloride	**11.2**	1500	0.10	mg/L	N/A	2016-07-04	
Fluoride	**0.28**	2	0.1	mg/L	N/A	2016-07-04	
Nitrate+Nitrite (as N)	**0.012**	400	0.005	mg/L	N/A	2016-07-05	
Nitrite (as N)	< 0.005	0.2	0.005	mg/L	N/A	2016-07-05	HT1

REPORTED TO	Morrison Hershfield Limited	**WORK ORDER**	6062600
PROJECT	Whistler Landfill - Summer/Winter	**REPORTED**	2016-07-11

Analyte	Result / *Recovery*	Standard / Guideline	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: SFC 3 (6062600-09) [Water] Sampled: 2016-06-29 00:00, Continued							
Anions, Continued							
Sulfate	**21.0**	1000	1.0	mg/L	N/A	2016-07-04	
General Parameters							
Alkalinity, Total (as CaCO3)	**36**	N/A	2	mg/L	N/A	2016-07-04	
Alkalinity, Phenolphthalein (as CaCO3)	< 1	N/A	2	mg/L	N/A	2016-07-04	
Alkalinity, Bicarbonate (as CaCO3)	**36**	N/A	2	mg/L	N/A	2016-07-04	
Alkalinity, Carbonate (as CaCO3)	< 1	N/A	2	mg/L	N/A	2016-07-04	
Alkalinity, Hydroxide (as CaCO3)	< 1	N/A	2	mg/L	N/A	2016-07-04	
Ammonia, Total (as N)	< 0.020	N/A	0.02	mg/L	N/A	2016-07-04	
BOD, 5-day	< 3	N/A	2	mg/L	2016-07-02	2016-07-07	BOD2
Conductivity (EC)	**128**	N/A	2	µS/cm	N/A	2016-07-04	
Nitrogen, Total Kjeldahl	**0.19**	N/A	0.05	mg/L	2016-07-06	2016-07-07	
pH	**6.92**	N/A	0.01	pH units	N/A	2016-07-04	HT2
Phosphorus, Total (as P)	**0.017**	N/A	0.002	mg/L	2016-07-06	2016-07-08	
Solids, Total Dissolved	**99**	N/A	10	mg/L	N/A	2016-07-06	
Solids, Total Suspended	**86**	N/A	2	mg/L	N/A	2016-07-06	
Calculated Parameters							
Hardness, Total (as CaCO3)	**38.1**	N/A	0.50	mg/L	N/A	N/A	
Nitrate (as N)	**0.012**	400	0.005	mg/L	N/A	N/A	
Nitrogen, Total	**0.201**	N/A	0.050	mg/L	N/A	N/A	
Total Metals							
Aluminum, total	**0.061**	N/A	0.005	mg/L	2016-07-04	2016-07-05	
Antimony, total	< 0.0001	0.2	0.0001	mg/L	2016-07-04	2016-07-05	
Arsenic, total	< 0.0005	0.05	0.0005	mg/L	2016-07-04	2016-07-05	
Barium, total	**0.014**	5	0.005	mg/L	2016-07-04	2016-07-05	
Beryllium, total	< 0.0001	0.053	0.0001	mg/L	2016-07-04	2016-07-05	
Bismuth, total	< 0.0001	N/A	0.0001	mg/L	2016-07-04	2016-07-05	
Boron, total	< 0.004	50	0.004	mg/L	2016-07-04	2016-07-05	
Cadmium, total	**0.00002**	0.0001	0.00001	mg/L	2016-07-04	2016-07-05	
Calcium, total	**12.4**	N/A	0.2	mg/L	2016-07-04	2016-07-05	
Chromium, total	< 0.0005	N/A	0.0005	mg/L	2016-07-04	2016-07-05	
Cobalt, total	**0.00286**	0.04	0.00005	mg/L	2016-07-04	2016-07-05	
Copper, total	**0.0015**	0.02	0.0002	mg/L	2016-07-04	2016-07-05	
Iron, total	**2.00**	N/A	0.01	mg/L	2016-07-04	2016-07-05	
Lead, total	< 0.0001	0.04	0.0001	mg/L	2016-07-04	2016-07-05	
Lithium, total	**0.0002**	N/A	0.0001	mg/L	2016-07-04	2016-07-05	
Magnesium, total	**1.74**	N/A	0.01	mg/L	2016-07-04	2016-07-05	
Manganese, total	**0.306**	N/A	0.0002	mg/L	2016-07-04	2016-07-05	
Mercury, total	< 0.00002	0.001	0.00002	mg/L	2016-07-04	2016-07-04	
Molybdenum, total	**0.0007**	10	0.0001	mg/L	2016-07-04	2016-07-05	
Nickel, total	**0.0007**	0.25	0.0002	mg/L	2016-07-04	2016-07-05	
Phosphorus, total	< 0.02	N/A	0.02	mg/L	2016-07-04	2016-07-05	
Potassium, total	**0.52**	N/A	0.02	mg/L	2016-07-04	2016-07-05	
Selenium, total	< 0.0005	0.01	0.0005	mg/L	2016-07-04	2016-07-05	
Silicon, total	**8.7**	N/A	0.5	mg/L	2016-07-04	2016-07-05	

REPORTED TO	Morrison Hershfield Limited	**WORK ORDER**	6062600
PROJECT	Whistler Landfill - Summer/Winter	**REPORTED**	2016-07-11

Analyte	Result / *Recovery*	Standard / Guideline	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: SFC 3 (6062600-09) [Water] Sampled: 2016-06-29 00:00, Continued							
Total Metals, Continued							
Silver, total	< 0.00005	0.0005	0.00005	mg/L	2016-07-04	2016-07-05	
Sodium, total	**6.81**	N/A	0.02	mg/L	2016-07-04	2016-07-05	
Strontium, total	**0.121**	N/A	0.001	mg/L	2016-07-04	2016-07-05	
Sulfur, total	< 1	N/A	1	mg/L	2016-07-04	2016-07-05	
Tellurium, total	< 0.0002	N/A	0.0002	mg/L	2016-07-04	2016-07-05	
Thallium, total	< 0.00002	0.003	0.00002	mg/L	2016-07-04	2016-07-05	
Thorium, total	< 0.0001	N/A	0.0001	mg/L	2016-07-04	2016-07-05	
Tin, total	< 0.0002	N/A	0.0002	mg/L	2016-07-04	2016-07-05	
Titanium, total	< 0.005	1	0.005	mg/L	2016-07-04	2016-07-05	
Uranium, total	< 0.00002	3	0.00002	mg/L	2016-07-04	2016-07-05	
Vanadium, total	< 0.001	N/A	0.001	mg/L	2016-07-04	2016-07-05	
Zinc, total	< 0.004	0.075	0.004	mg/L	2016-07-04	2016-07-05	
Zirconium, total	< 0.0001	N/A	0.0001	mg/L	2016-07-04	2016-07-05	
Sample ID: SFC 4 (6062600-10) [Water] Sampled: 2016-06-29 00:00							
Anions							
Bromide	< 0.10	N/A	0.10	mg/L	N/A	2016-07-04	
Chloride	**27.4**	1500	0.10	mg/L	N/A	2016-07-04	
Fluoride	**0.11**	2	0.1	mg/L	N/A	2016-07-04	
Nitrate+Nitrite (as N)	**0.199**	400	0.005	mg/L	N/A	2016-07-05	
Nitrite (as N)	< 0.005	0.2	0.005	mg/L	N/A	2016-07-05	HT1
Sulfate	**38.0**	1000	1.0	mg/L	N/A	2016-07-04	
General Parameters							
Alkalinity, Total (as CaCO3)	**38**	N/A	2	mg/L	N/A	2016-07-04	
Alkalinity, Phenolphthalein (as CaCO3)	< 1	N/A	2	mg/L	N/A	2016-07-04	
Alkalinity, Bicarbonate (as CaCO3)	**38**	N/A	2	mg/L	N/A	2016-07-04	
Alkalinity, Carbonate (as CaCO3)	< 1	N/A	2	mg/L	N/A	2016-07-04	
Alkalinity, Hydroxide (as CaCO3)	< 1	N/A	2	mg/L	N/A	2016-07-04	
Ammonia, Total (as N)	< 0.020	N/A	0.02	mg/L	N/A	2016-07-04	
BOD, 5-day	< 3	N/A	2	mg/L	2016-07-02	2016-07-07	BOD2
Conductivity (EC)	**251**	N/A	2	µS/cm	N/A	2016-07-04	
Nitrogen, Total Kjeldahl	**0.07**	N/A	0.05	mg/L	2016-07-06	2016-07-07	
pH	**7.38**	N/A	0.01	pH units	N/A	2016-07-04	HT2
Phosphorus, Total (as P)	**0.005**	N/A	0.002	mg/L	2016-07-06	2016-07-08	
Solids, Total Dissolved	**164**	N/A	10	mg/L	N/A	2016-07-06	
Solids, Total Suspended	< 2	N/A	2	mg/L	N/A	2016-07-06	
Calculated Parameters							
Hardness, Total (as CaCO3)	**71.8**	N/A	0.50	mg/L	N/A	N/A	
Nitrate (as N)	**0.199**	400	0.005	mg/L	N/A	N/A	
Nitrogen, Total	**0.269**	N/A	0.050	mg/L	N/A	N/A	
Total Metals							
Aluminum, total	**0.019**	N/A	0.005	mg/L	2016-07-04	2016-07-05	
Antimony, total	< 0.0001	0.2	0.0001	mg/L	2016-07-04	2016-07-05	

REPORTED TO	Morrison Hershfield Limited	**WORK ORDER**	6062600
PROJECT	Whistler Landfill - Summer/Winter	**REPORTED**	2016-07-11

Analyte	Result / *Recovery*	Standard / Guideline	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: SFC 4 (6062600-10) [Water] Sampled: 2016-06-29 00:00, Continued							
Total Metals, Continued							
Arsenic, total	< 0.0005	0.05	0.0005	mg/L	2016-07-04	2016-07-05	
Barium, total	**0.014**	5	0.005	mg/L	2016-07-04	2016-07-05	
Beryllium, total	< 0.0001	0.053	0.0001	mg/L	2016-07-04	2016-07-05	
Bismuth, total	< 0.0001	N/A	0.0001	mg/L	2016-07-04	2016-07-05	
Boron, total	**0.027**	50	0.004	mg/L	2016-07-04	2016-07-05	
Cadmium, total	< 0.00001	0.0001	0.00001	mg/L	2016-07-04	2016-07-05	
Calcium, total	**24.7**	N/A	0.2	mg/L	2016-07-04	2016-07-05	
Chromium, total	< 0.0005	N/A	0.0005	mg/L	2016-07-04	2016-07-05	
Cobalt, total	**0.00012**	0.04	0.00005	mg/L	2016-07-04	2016-07-05	
Copper, total	**0.0010**	0.02	0.0002	mg/L	2016-07-04	2016-07-05	
Iron, total	**0.09**	N/A	0.01	mg/L	2016-07-04	2016-07-05	
Lead, total	< 0.0001	0.04	0.0001	mg/L	2016-07-04	2016-07-05	
Lithium, total	**0.0005**	N/A	0.0001	mg/L	2016-07-04	2016-07-05	
Magnesium, total	**2.44**	N/A	0.01	mg/L	2016-07-04	2016-07-05	
Manganese, total	**0.0460**	N/A	0.0002	mg/L	2016-07-04	2016-07-05	
Mercury, total	< 0.00002	0.001	0.00002	mg/L	2016-07-04	2016-07-04	
Molybdenum, total	**0.0004**	10	0.0001	mg/L	2016-07-04	2016-07-05	
Nickel, total	**0.0003**	0.25	0.0002	mg/L	2016-07-04	2016-07-05	
Phosphorus, total	< 0.02	N/A	0.02	mg/L	2016-07-04	2016-07-05	
Potassium, total	**1.19**	N/A	0.02	mg/L	2016-07-04	2016-07-05	
Selenium, total	< 0.0005	0.01	0.0005	mg/L	2016-07-04	2016-07-05	
Silicon, total	**6.8**	N/A	0.5	mg/L	2016-07-04	2016-07-05	
Silver, total	< 0.00005	0.0005	0.00005	mg/L	2016-07-04	2016-07-05	
Sodium, total	**11.6**	N/A	0.02	mg/L	2016-07-04	2016-07-05	
Strontium, total	**0.261**	N/A	0.001	mg/L	2016-07-04	2016-07-05	
Sulfur, total	**6**	N/A	1	mg/L	2016-07-04	2016-07-05	
Tellurium, total	< 0.0002	N/A	0.0002	mg/L	2016-07-04	2016-07-05	
Thallium, total	< 0.00002	0.003	0.00002	mg/L	2016-07-04	2016-07-05	
Thorium, total	< 0.0001	N/A	0.0001	mg/L	2016-07-04	2016-07-05	
Tin, total	< 0.0002	N/A	0.0002	mg/L	2016-07-04	2016-07-05	
Titanium, total	< 0.005	1	0.005	mg/L	2016-07-04	2016-07-05	
Uranium, total	< 0.00002	3	0.00002	mg/L	2016-07-04	2016-07-05	
Vanadium, total	< 0.001	N/A	0.001	mg/L	2016-07-04	2016-07-05	
Zinc, total	< 0.004	0.075	0.004	mg/L	2016-07-04	2016-07-05	
Zirconium, total	< 0.0001	N/A	0.0001	mg/L	2016-07-04	2016-07-05	
Sample ID: SFC 11 (6062600-11) [Water] Sampled: 2016-06-29 00:00							
Anions							
Bromide	< 0.10	N/A	0.10	mg/L	N/A	2016-07-04	
Chloride	**12.4**	1500	0.10	mg/L	N/A	2016-07-04	
Fluoride	< 0.10	2	0.1	mg/L	N/A	2016-07-04	
Nitrate+Nitrite (as N)	**0.166**	400	0.005	mg/L	N/A	2016-07-05	
Nitrite (as N)	< 0.005	0.2	0.005	mg/L	N/A	2016-07-05	HT1
Sulfate	**14.3**	1000	1.0	mg/L	N/A	2016-07-04	

REPORTED TO	Morrison Hershfield Limited	**WORK ORDER**	6062600
PROJECT	Whistler Landfill - Summer/Winter	**REPORTED**	2016-07-11

Analyte	Result / *Recovery*	Standard / Guideline	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: SFC 11 (6062600-11) [Water] Sampled: 2016-06-29 00:00, Continued							
General Parameters							
Alkalinity, Total (as CaCO3)	**30**	N/A	2	mg/L	N/A	2016-07-04	
Alkalinity, Phenolphthalein (as CaCO3)	< 1	N/A	2	mg/L	N/A	2016-07-04	
Alkalinity, Bicarbonate (as CaCO3)	**30**	N/A	2	mg/L	N/A	2016-07-04	
Alkalinity, Carbonate (as CaCO3)	< 1	N/A	2	mg/L	N/A	2016-07-04	
Alkalinity, Hydroxide (as CaCO3)	< 1	N/A	2	mg/L	N/A	2016-07-04	
Ammonia, Total (as N)	< 0.020	N/A	0.02	mg/L	N/A	2016-07-04	
BOD, 5-day	< 3	N/A	2	mg/L	2016-07-02	2016-07-07	BOD2
Conductivity (EC)	**131**	N/A	2	µS/cm	N/A	2016-07-04	
Nitrogen, Total Kjeldahl	**0.06**	N/A	0.05	mg/L	2016-07-06	2016-07-07	
pH	**6.95**	N/A	0.01	pH units	N/A	2016-07-04	HT2
Phosphorus, Total (as P)	**0.007**	N/A	0.002	mg/L	2016-07-06	2016-07-08	
Solids, Total Dissolved	**101**	N/A	10	mg/L	N/A	2016-07-06	
Solids, Total Suspended	< 2	N/A	2	mg/L	N/A	2016-07-06	
Calculated Parameters							
Hardness, Total (as CaCO3)	**37.8**	N/A	0.50	mg/L	N/A	N/A	
Nitrate (as N)	**0.166**	400	0.005	mg/L	N/A	N/A	
Nitrogen, Total	**0.231**	N/A	0.050	mg/L	N/A	N/A	
Total Metals							
Aluminum, total	**0.020**	N/A	0.005	mg/L	2016-07-04	2016-07-05	
Antimony, total	< 0.0001	0.2	0.0001	mg/L	2016-07-04	2016-07-05	
Arsenic, total	< 0.0005	0.05	0.0005	mg/L	2016-07-04	2016-07-05	
Barium, total	**0.009**	5	0.005	mg/L	2016-07-04	2016-07-05	
Beryllium, total	< 0.0001	0.053	0.0001	mg/L	2016-07-04	2016-07-05	
Bismuth, total	< 0.0001	N/A	0.0001	mg/L	2016-07-04	2016-07-05	
Boron, total	**0.005**	50	0.004	mg/L	2016-07-04	2016-07-05	
Cadmium, total	**0.00002**	0.0001	0.00001	mg/L	2016-07-04	2016-07-05	
Calcium, total	**12.2**	N/A	0.2	mg/L	2016-07-04	2016-07-05	
Chromium, total	< 0.0005	N/A	0.0005	mg/L	2016-07-04	2016-07-05	
Cobalt, total	< 0.00005	0.04	0.00005	mg/L	2016-07-04	2016-07-05	
Copper, total	**0.0006**	0.02	0.0002	mg/L	2016-07-04	2016-07-05	
Iron, total	**0.04**	N/A	0.01	mg/L	2016-07-04	2016-07-05	
Lead, total	< 0.0001	0.04	0.0001	mg/L	2016-07-04	2016-07-05	
Lithium, total	**0.0005**	N/A	0.0001	mg/L	2016-07-04	2016-07-05	
Magnesium, total	**1.79**	N/A	0.01	mg/L	2016-07-04	2016-07-05	
Manganese, total	**0.0093**	N/A	0.0002	mg/L	2016-07-04	2016-07-05	
Mercury, total	< 0.00002	0.001	0.00002	mg/L	2016-07-04	2016-07-04	
Molybdenum, total	**0.0002**	10	0.0001	mg/L	2016-07-04	2016-07-05	
Nickel, total	**0.0002**	0.25	0.0002	mg/L	2016-07-04	2016-07-05	
Phosphorus, total	< 0.02	N/A	0.02	mg/L	2016-07-04	2016-07-05	
Potassium, total	**0.48**	N/A	0.02	mg/L	2016-07-04	2016-07-05	
Selenium, total	< 0.0005	0.01	0.0005	mg/L	2016-07-04	2016-07-05	
Silicon, total	**9.7**	N/A	0.5	mg/L	2016-07-04	2016-07-05	
Silver, total	< 0.00005	0.0005	0.00005	mg/L	2016-07-04	2016-07-05	
Sodium, total	**6.78**	N/A	0.02	mg/L	2016-07-04	2016-07-05	

REPORTED TO	Morrison Hershfield Limited	**WORK ORDER**	6062600
PROJECT	Whistler Landfill - Summer/Winter	**REPORTED**	2016-07-11

Analyte	Result / *Recovery*	Standard / Guideline	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: SFC 11 (6062600-11) [Water] Sampled: 2016-06-29 00:00, Continued							
Total Metals, Continued							
Strontium, total	**0.160**	N/A	0.001	mg/L	2016-07-04	2016-07-05	
Sulfur, total	< 1	N/A	1	mg/L	2016-07-04	2016-07-05	
Tellurium, total	< 0.0002	N/A	0.0002	mg/L	2016-07-04	2016-07-05	
Thallium, total	< 0.00002	0.003	0.00002	mg/L	2016-07-04	2016-07-05	
Thorium, total	< 0.0001	N/A	0.0001	mg/L	2016-07-04	2016-07-05	
Tin, total	< 0.0002	N/A	0.0002	mg/L	2016-07-04	2016-07-05	
Titanium, total	< 0.005	1	0.005	mg/L	2016-07-04	2016-07-05	
Uranium, total	< 0.00002	3	0.00002	mg/L	2016-07-04	2016-07-05	
Vanadium, total	< 0.001	N/A	0.001	mg/L	2016-07-04	2016-07-05	
Zinc, total	< 0.004	0.075	0.004	mg/L	2016-07-04	2016-07-05	
Zirconium, total	< 0.0001	N/A	0.0001	mg/L	2016-07-04	2016-07-05	
Sample ID: GW Int (6062600-12) [Water] Sampled: 2016-06-29 00:00							
Anions							
Bromide	< 0.10	N/A	0.10	mg/L	N/A	2016-07-04	
Chloride	**73.8**	1500	0.10	mg/L	N/A	2016-07-04	
Fluoride	**0.11**	2	0.1	mg/L	N/A	2016-07-04	
Nitrate+Nitrite (as N)	**0.008**	400	0.005	mg/L	N/A	2016-07-05	
Nitrite (as N)	< 0.005	0.2	0.005	mg/L	N/A	2016-07-05	HT1
Sulfate	**133**	1000	1.0	mg/L	N/A	2016-07-04	
General Parameters							
Alkalinity, Total (as CaCO3)	**118**	N/A	2	mg/L	N/A	2016-07-04	
Alkalinity, Phenolphthalein (as CaCO3)	< 1	N/A	2	mg/L	N/A	2016-07-04	
Alkalinity, Bicarbonate (as CaCO3)	**118**	N/A	2	mg/L	N/A	2016-07-04	
Alkalinity, Carbonate (as CaCO3)	< 1	N/A	2	mg/L	N/A	2016-07-04	
Alkalinity, Hydroxide (as CaCO3)	< 1	N/A	2	mg/L	N/A	2016-07-04	
Ammonia, Total (as N)	**1.23**	N/A	0.02	mg/L	N/A	2016-07-04	
BOD, 5-day	**5**	N/A	2	mg/L	2016-07-02	2016-07-07	
Conductivity (EC)	**691**	N/A	2	µS/cm	N/A	2016-07-04	
Nitrogen, Total Kjeldahl	**3.20**	N/A	0.05	mg/L	2016-07-06	2016-07-07	
pH	**6.60**	N/A	0.01	pH units	N/A	2016-07-04	HT2
Phosphorus, Total (as P)	**0.026**	N/A	0.002	mg/L	2016-07-06	2016-07-08	
Solids, Total Dissolved	**430**	N/A	10	mg/L	N/A	2016-07-06	
Solids, Total Suspended	**37**	N/A	2	mg/L	N/A	2016-07-06	
Calculated Parameters							
Nitrate (as N)	**0.008**	400	0.005	mg/L	N/A	N/A	
Nitrogen, Total	**3.21**	N/A	1.00	mg/L	N/A	N/A	
BCMOE Aggregate Hydrocarbons							S05
EPHw10-19	< 250	5000	250	µg/L	2016-07-04	2016-07-04	
EPHw19-32	< 250	N/A	250	µg/L	2016-07-04	2016-07-04	
LEPHw	< 250	500	250	µg/L	N/A	N/A	
HEPHw	< 250	N/A	250	µg/L	N/A	N/A	

REPORTED TO	Morrison Hershfield Limited	**WORK ORDER**	6062600
PROJECT	Whistler Landfill - Summer/Winter	**REPORTED**	2016-07-11

Analyte	Result / *Recovery*	Standard / Guideline	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: GW Int (6062600-12) [Water] Sampled: 2016-06-29 00:00, Continued							
CCME CWS Petroleum Hydrocarbons							
CCME PHC F2 (C10-C16)	< 0.40	N/A	0.40	mg/L	2016-07-04	2016-07-05	
CCME PHC F3 (C16-C34)	< 0.40	N/A	0.40	mg/L	2016-07-04	2016-07-05	
CCME PHC F4 (C34-C50)	< 0.40	N/A	0.40	mg/L	2016-07-04	2016-07-05	
Reached Baseline at nC50	**YES**	N/A		mg/L	2016-07-04	2016-07-05	
Polycyclic Aromatic Hydrocarbons (PAH)							
Acenaphthene	**0.92**	60	0.05	µg/L	2016-07-04	2016-07-05	
Acenaphthylene	< 0.20	N/A	0.20	µg/L	2016-07-04	2016-07-05	
Acridine	< 0.10	0.5	0.10	µg/L	2016-07-04	2016-07-05	
Anthracene	**0.03**	1	0.01	µg/L	2016-07-04	2016-07-05	
Benz (a) anthracene	< 0.01	1	0.01	µg/L	2016-07-04	2016-07-05	
Benzo (a) pyrene	< 0.01	0.1	0.01	µg/L	2016-07-04	2016-07-05	
Benzo (b) fluoranthene	< 0.05	N/A	0.05	µg/L	2016-07-04	2016-07-05	
Benzo (g,h,i) perylene	< 0.05	N/A	0.05	µg/L	2016-07-04	2016-07-05	
Benzo (k) fluoranthene	< 0.05	N/A	0.05	µg/L	2016-07-04	2016-07-05	
Chrysene	< 0.05	1	0.05	µg/L	2016-07-04	2016-07-05	
Dibenz (a,h) anthracene	< 0.05	N/A	0.05	µg/L	2016-07-04	2016-07-05	
Fluoranthene	**0.16**	2	0.03	µg/L	2016-07-04	2016-07-05	
Fluorene	**0.22**	120	0.05	µg/L	2016-07-04	2016-07-05	
Indeno (1,2,3-cd) pyrene	< 0.05	N/A	0.05	µg/L	2016-07-04	2016-07-05	
Naphthalene	< 0.20	10	0.20	µg/L	2016-07-04	2016-07-05	
Phenanthrene	< 0.10	3	0.10	µg/L	2016-07-04	2016-07-05	
Pyrene	**0.08**	0.2	0.02	µg/L	2016-07-04	2016-07-05	
Quinoline	< 0.10	34	0.10	µg/L	2016-07-04	2016-07-05	
Surrogate: Acridine-d9	*78*		*60-140*	%	*2016-07-04*	*2016-07-05*	
Surrogate: Naphthalene-d8	*94*		*60-140*	%	*2016-07-04*	*2016-07-05*	
Surrogate: Perylene-d12	*110*		*60-140*	%	*2016-07-04*	*2016-07-05*	
Volatile Organic Compounds (VOC)							
Benzene	< 0.5	1000	0.5	µg/L	N/A	2016-07-01	
Bromodichloromethane	< 1.0	N/A	1.0	µg/L	N/A	2016-07-01	
Bromoform	< 1.0	N/A	1.0	µg/L	N/A	2016-07-01	
Carbon tetrachloride	< 1.0	130	1.0	µg/L	N/A	2016-07-01	
Chlorobenzene	< 1.0	13	1.0	µg/L	N/A	2016-07-01	
Chloroethane	< 2.0	N/A	2.0	µg/L	N/A	2016-07-01	
Chloroform	< 1.0	20	1.0	µg/L	N/A	2016-07-01	
Dibromochloromethane	< 1.0	N/A	1.0	µg/L	N/A	2016-07-01	
1,2-Dibromoethane	< 0.3	N/A	0.3	µg/L	N/A	2016-07-01	
Dibromomethane	< 1.0	N/A	1.0	µg/L	N/A	2016-07-01	
1,2-Dichlorobenzene	< 0.5	7	0.5	µg/L	N/A	2016-07-01	
1,3-Dichlorobenzene	< 1.0	1500	1.0	µg/L	N/A	2016-07-01	
1,4-Dichlorobenzene	< 1.0	260	1.0	µg/L	N/A	2016-07-01	
1,1-Dichloroethane	< 1.0	N/A	1.0	µg/L	N/A	2016-07-01	
1,2-Dichloroethane	< 1.0	1000	1.0	µg/L	N/A	2016-07-01	
1,1-Dichloroethene	< 1.0	N/A	1.0	µg/L	N/A	2016-07-01	
cis-1,2-Dichloroethene	< 1.0	N/A	1.0	µg/L	N/A	2016-07-01	

REPORTED TO	Morrison Hershfield Limited	**WORK ORDER**	6062600
PROJECT	Whistler Landfill - Summer/Winter	**REPORTED**	2016-07-11

Analyte	Result / *Recovery*	Standard / Guideline	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: GW Int (6062600-12) [Water] Sampled: 2016-06-29 00:00, Continued							
Volatile Organic Compounds (VOC), Continued							
trans-1,2-Dichloroethene	< 1.0	N/A	1.0	µg/L	N/A	2016-07-01	
1,2-Dichloropropane	< 1.0	N/A	1.0	µg/L	N/A	2016-07-01	
1,3-Dichloropropene	< 1.0	N/A	1.0	µg/L	N/A	2016-07-01	
Ethylbenzene	< 1.0	2000	1.0	µg/L	N/A	2016-07-01	
Methyl tert-butyl ether	< 1.0	34000	1.0	µg/L	N/A	2016-07-01	
Methylene chloride	< 3.0	980	3.0	µg/L	N/A	2016-07-01	
Styrene	< 1.0	720	1.0	µg/L	N/A	2016-07-01	
1,1,2,2-Tetrachloroethane	< 1.0	1100	1.0	µg/L	N/A	2016-07-01	
Tetrachloroethene	< 1.0	N/A	1.0	µg/L	N/A	2016-07-01	
Toluene	< 1.0	390	1.0	µg/L	N/A	2016-07-01	
1,1,1-Trichloroethane	< 1.0	N/A	1.0	µg/L	N/A	2016-07-01	
1,1,2-Trichloroethane	< 1.0	N/A	1.0	µg/L	N/A	2016-07-01	
Trichloroethene	< 1.0	200	1.0	µg/L	N/A	2016-07-01	
Trichlorofluoromethane	< 1.0	N/A	1.0	µg/L	N/A	2016-07-01	
Vinyl chloride	< 2.0	N/A	2.0	µg/L	N/A	2016-07-01	
Xylenes (total)	< 2.0	N/A	2.0	µg/L	N/A	2016-07-01	
Surrogate: Toluene-d8	*103*		*70-130*	%	*N/A*	*2016-07-01*	
Surrogate: 4-Bromofluorobenzene	*109*		*70-130*	%	*N/A*	*2016-07-01*	
Surrogate: 1,4-Dichlorobenzene-d4	*105*		*70-130*	%	*N/A*	*2016-07-01*	
Sample ID: Trip Blank (6062600-13) [Water] Sampled: 2016-06-29 00:00							
Anions							
Bromide	< 0.10	N/A	0.10	mg/L	N/A	2016-07-04	
Chloride	< 0.10	1500	0.10	mg/L	N/A	2016-07-04	
Fluoride	< 0.10	2	0.1	mg/L	N/A	2016-07-04	
Nitrate+Nitrite (as N)	< 0.005	400	0.005	mg/L	N/A	2016-07-05	
Nitrite (as N)	< 0.005	0.2	0.005	mg/L	N/A	2016-07-05	HT1
Sulfate	< 1.0	1000	1.0	mg/L	N/A	2016-07-04	
General Parameters							
Alkalinity, Total (as CaCO3)	< 1	N/A	2	mg/L	N/A	2016-07-04	
Alkalinity, Phenolphthalein (as CaCO3)	< 1	N/A	2	mg/L	N/A	2016-07-04	
Alkalinity, Bicarbonate (as CaCO3)	< 1	N/A	2	mg/L	N/A	2016-07-04	
Alkalinity, Carbonate (as CaCO3)	< 1	N/A	2	mg/L	N/A	2016-07-04	
Alkalinity, Hydroxide (as CaCO3)	< 1	N/A	2	mg/L	N/A	2016-07-04	
Ammonia, Total (as N)	< 0.020	N/A	0.02	mg/L	N/A	2016-07-04	
BOD, 5-day	< 3	N/A	2	mg/L	2016-07-02	2016-07-07	BOD2
Conductivity (EC)	< 2	N/A	2	µS/cm	N/A	2016-07-04	
Nitrogen, Total Kjeldahl	**0.07**	N/A	0.05	mg/L	2016-07-06	2016-07-07	
pH	**5.00**	N/A	0.01	pH units	N/A	2016-07-04	HT2
Phosphorus, Total (as P)	**0.002**	N/A	0.002	mg/L	2016-07-06	2016-07-08	
Solids, Total Dissolved	< 10	N/A	10	mg/L	N/A	2016-07-06	
Solids, Total Suspended	< 2	N/A	2	mg/L	N/A	2016-07-06	
Calculated Parameters							

REPORTED TO	Morrison Hershfield Limited	**WORK ORDER**	6062600
PROJECT	Whistler Landfill - Summer/Winter	**REPORTED**	2016-07-11

Analyte	Result / *Recovery*	Standard / Guideline	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: Trip Blank (6062600-13) [Water] Sampled: 2016-06-29 00:00, Continued							
Calculated Parameters, Continued							
Hardness, Total (as CaCO3)	< 0.50	N/A	0.50	mg/L	N/A	N/A	
Nitrate (as N)	< 0.005	400	0.005	mg/L	N/A	N/A	
Nitrogen, Total	**0.074**	N/A	0.050	mg/L	N/A	N/A	
Dissolved Metals							
Aluminum, dissolved	< 0.005	N/A	0.005	mg/L	N/A	2016-07-06	
Antimony, dissolved	< 0.0001	0.2	0.0001	mg/L	N/A	2016-07-06	
Arsenic, dissolved	< 0.0005	0.05	0.0005	mg/L	N/A	2016-07-06	
Barium, dissolved	< 0.005	5	0.005	mg/L	N/A	2016-07-06	
Beryllium, dissolved	< 0.0001	0.053	0.0001	mg/L	N/A	2016-07-06	
Bismuth, dissolved	< 0.0001	N/A	0.0001	mg/L	N/A	2016-07-06	
Boron, dissolved	< 0.004	50	0.004	mg/L	N/A	2016-07-06	
Cadmium, dissolved	< 0.00001	0.0001	0.00001	mg/L	N/A	2016-07-06	
Calcium, dissolved	< 0.2	N/A	0.2	mg/L	N/A	2016-07-06	
Chromium, dissolved	< 0.0005	N/A	0.0005	mg/L	N/A	2016-07-06	
Cobalt, dissolved	< 0.00005	0.04	0.00005	mg/L	N/A	2016-07-06	
Copper, dissolved	< 0.0002	0.02	0.0002	mg/L	N/A	2016-07-06	
Iron, dissolved	< 0.010	N/A	0.010	mg/L	N/A	2016-07-06	
Lead, dissolved	< 0.0001	0.04	0.0001	mg/L	N/A	2016-07-06	
Lithium, dissolved	< 0.0001	N/A	0.0001	mg/L	N/A	2016-07-06	
Magnesium, dissolved	< 0.01	N/A	0.01	mg/L	N/A	2016-07-06	
Manganese, dissolved	**0.0007**	N/A	0.0002	mg/L	N/A	2016-07-06	
Mercury, dissolved	< 0.00002	0.001	0.00002	mg/L	2016-07-05	2016-07-05	
Molybdenum, dissolved	< 0.0001	10	0.0001	mg/L	N/A	2016-07-06	
Nickel, dissolved	< 0.0002	0.25	0.0002	mg/L	N/A	2016-07-06	
Phosphorus, dissolved	< 0.02	N/A	0.02	mg/L	N/A	2016-07-06	
Potassium, dissolved	< 0.02	N/A	0.02	mg/L	N/A	2016-07-06	
Selenium, dissolved	< 0.0005	0.01	0.0005	mg/L	N/A	2016-07-06	
Silicon, dissolved	< 0.5	N/A	0.5	mg/L	N/A	2016-07-06	
Silver, dissolved	< 0.00005	0.0005	0.00005	mg/L	N/A	2016-07-06	
Sodium, dissolved	**0.03**	N/A	0.02	mg/L	N/A	2016-07-06	
Strontium, dissolved	< 0.001	N/A	0.001	mg/L	N/A	2016-07-06	
Sulfur, dissolved	< 1	N/A	1	mg/L	N/A	2016-07-06	
Tellurium, dissolved	< 0.0002	N/A	0.0002	mg/L	N/A	2016-07-06	
Thallium, dissolved	< 0.00002	0.003	0.00002	mg/L	N/A	2016-07-06	
Thorium, dissolved	< 0.0001	N/A	0.0001	mg/L	N/A	2016-07-06	
Tin, dissolved	< 0.0002	N/A	0.0002	mg/L	N/A	2016-07-06	
Titanium, dissolved	< 0.005	1	0.005	mg/L	N/A	2016-07-06	
Uranium, dissolved	< 0.00002	3	0.00002	mg/L	N/A	2016-07-06	
Vanadium, dissolved	< 0.001	N/A	0.001	mg/L	N/A	2016-07-06	
Zinc, dissolved	< 0.004	0.075	0.004	mg/L	N/A	2016-07-06	
Zirconium, dissolved	< 0.0001	N/A	0.0001	mg/L	N/A	2016-07-06	

REPORTED TO	Morrison Hershfield Limited	**WORK ORDER**	6062600
PROJECT	Whistler Landfill - Summer/Winter	**REPORTED**	2016-07-11

Sample / Analysis Qualifiers:

BOD2	The sample dilutions set-up for the BOD analysis did not meet the oxygen depletion criterion of at least 2 mg/L.
HT1	The sample was prepared and/or analyzed past the recommended holding time.
HT2	The 15 minute recommended holding time (from sampling to analysis) has been exceeded - field analysis is recommended.
S05	The surrogate recoveries for this sample are not available.

REPORTED TO	Morrison Hershfield Limited	**WORK ORDER**	6062600
PROJECT	Whistler Landfill - Summer/Winter	**REPORTED**	2016-07-11

The following section displays the quality control (QC) data that is associated with your sample data. Groups of samples are prepared in "batches" and analyzed in conjunction with QC samples that ensure your data is of the highest quality. Common QC types include:

- **Method Blank (Blk)**: Laboratory reagent water is carried through sample preparation and analysis steps. Method Blanks indicate that results are free from contamination, i.e. not biased high from sources such as the sample container or the laboratory environment
- **Duplicate (Dup)**: Preparation and analysis of a replicate aliquot of a sample. Duplicates provide a measure of the analytical method's precision, i.e. how reproducible a result is. Duplicates are only reported if they are associated with your sample data.
- **Blank Spike (BS)**: A known amount of standard is carried through sample preparation and analysis steps. Blank Spikes, also known as laboratory control samples (LCS), are prepared from a different source of standard than used for the calibration. They ensure that the calibration is acceptable (i.e. not biased high or low) and also provide a measure of the analytical method's accuracy (i.e. closeness of the result to a target value).
- **Standard Reference Material (SRM)**: A material of similar matrix to the samples, externally certified for the parameter(s) listed. Standard Reference Materials ensure that the preparation steps in the method are adequate to achieve acceptable recoveries of the parameter(s) tested.

Each QC type is analyzed at a 5-10% frequency, i.e. one blank/duplicate/spike for every 10 samples. For all types of QC, the specified recovery (% Rec) and relative percent difference (RPD) limits are derived from long-term method performance averages and/or prescribed by the reference method.

Analyte	Result	MRL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Notes
Anions, Batch B6G0066										
Blank (B6G0066-BLK1)				Prepared: 2016-07-04, Analyzed: 2016-07-04						
Bromide	< 0.10	0.10	mg/L							
Chloride	< 0.10	0.10	mg/L							
Fluoride	< 0.10	0.01	mg/L							
Sulfate	< 1.0	1.0	mg/L							
Blank (B6G0066-BLK2)				Prepared: 2016-07-04, Analyzed: 2016-07-04						
Bromide	< 0.10	0.10	mg/L							
Chloride	< 0.10	0.10	mg/L							
Fluoride	< 0.10	0.01	mg/L							
Sulfate	< 1.0	1.0	mg/L							
LCS (B6G0066-BS1)				Prepared: 2016-07-04, Analyzed: 2016-07-04						
Bromide	3.94	0.10	mg/L	4.00		99	85-115			
Chloride	16.5	0.10	mg/L	16.0		103	90-110			
Fluoride	3.85	0.01	mg/L	4.00		96	88-108			
Sulfate	17.0	1.0	mg/L	16.0		106	91-109			
LCS (B6G0066-BS2)				Prepared: 2016-07-04, Analyzed: 2016-07-04						
Bromide	4.14	0.10	mg/L	4.00		103	85-115			
Chloride	17.2	0.10	mg/L	16.0		107	90-110			
Fluoride	4.01	0.01	mg/L	4.00		100	88-108			
Sulfate	16.5	1.0	mg/L	16.0		103	91-109			
Anions, Batch B6G0130										
Blank (B6G0130-BLK1)				Prepared: 2016-07-05, Analyzed: 2016-07-05						
Nitrite (as N)	< 0.005	0.005	mg/L							HT1
LCS (B6G0130-BS1)				Prepared: 2016-07-05, Analyzed: 2016-07-05						
Nitrite (as N)	0.522	0.005	mg/L	0.500		104	90-110			HT1

REPORTED TO	Morrison Hershfield Limited	**WORK ORDER**	6062600
PROJECT	Whistler Landfill - Summer/Winter	**REPORTED**	2016-07-11

Analyte	Result	MRL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Notes
Anions, Batch B6G0130, Continued										
Matrix Spike (B6G0130-MS1)		**Source: 6062600-03**		Prepared: 2016-07-05, Analyzed: 2016-07-05						
Nitrite (as N)	0.129	0.005	mg/L	0.125	< 0.005	102	80-120			HT1
Anions, Batch B6G0136										
Blank (B6G0136-BLK1)				Prepared: 2016-07-05, Analyzed: 2016-07-05						
Nitrate+Nitrite (as N)	< 0.005	0.005	mg/L							
LCS (B6G0136-BS1)				Prepared: 2016-07-05, Analyzed: 2016-07-05						
Nitrate+Nitrite (as N)	0.511	0.005	mg/L	0.500		102	91-108			
Duplicate (B6G0136-DUP1)		**Source: 6062600-03**		Prepared: 2016-07-05, Analyzed: 2016-07-05						
Nitrate+Nitrite (as N)	0.109	0.005	mg/L		0.110			< 1	15	
Matrix Spike (B6G0136-MS1)		**Source: 6062600-03**		Prepared: 2016-07-05, Analyzed: 2016-07-05						
Nitrate+Nitrite (as N)	0.236	0.005	mg/L	0.125	0.110	101	81-118			
BCMOE Aggregate Hydrocarbons, Batch B6G0072										
Blank (B6G0072-BLK1)				Prepared: 2016-07-04, Analyzed: 2016-07-04						S05
EPHw10-19	< 250	250	µg/L							
EPHw19-32	< 250	250	µg/L							
LCS (B6G0072-BS2)				Prepared: 2016-07-04, Analyzed: 2016-07-04						S05
EPHw10-19	16600	250	µg/L	15800		105	70-130			
EPHw19-32	19400	250	µg/L	22200		87	70-130			
CCME CWS Petroleum Hydrocarbons, Batch B6G0072										
Blank (B6G0072-BLK1)				Prepared: 2016-07-04, Analyzed: 2016-07-05						
CCME PHC F2 (C10-C16)	< 0.40	0.40	mg/L							
CCME PHC F3 (C16-C34)	< 0.40	0.40	mg/L							
CCME PHC F4 (C34-C50)	< 0.40	0.40	mg/L							
Reached Baseline at nC50	YES		mg/L							
LCS (B6G0072-BS2)				Prepared: 2016-07-04, Analyzed: 2016-07-05						
CCME PHC F2 (C10-C16)	8.30	0.40	mg/L	9.33		89	60-130			
CCME PHC F3 (C16-C34)	25.3	0.40	mg/L	33.6		76	60-130			
CCME PHC F4 (C34-C50)	2.27	0.40	mg/L	2.24		101	60-130			
Dissolved Metals, Batch B6G0040										
Blank (B6G0040-BLK1)				Prepared: 2016-07-04, Analyzed: 2016-07-04						
Mercury, dissolved	< 0.00002	0.00002	mg/L							
Duplicate (B6G0040-DUP1)		**Source: 6062600-04**		Prepared: 2016-07-04, Analyzed: 2016-07-04						
Mercury, dissolved	< 0.00002	0.00002	mg/L		< 0.00002				20	
Matrix Spike (B6G0040-MS1)		**Source: 6062600-05**		Prepared: 2016-07-04, Analyzed: 2016-07-04						
Mercury, dissolved	0.00024	0.00002	mg/L	0.000250	< 0.00002	95	70-130			
Reference (B6G0040-SRM1)				Prepared: 2016-07-04, Analyzed: 2016-07-04						
Mercury, dissolved	0.00350	0.00002	mg/L	0.00456		77	50-150			
Dissolved Metals, Batch B6G0184										

REPORTED TO	Morrison Hershfield Limited	**WORK ORDER**	6062600
PROJECT	Whistler Landfill - Summer/Winter	**REPORTED**	2016-07-11

Analyte	Result	MRL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Notes
Dissolved Metals, Batch B6G0184, Continued										
Blank (B6G0184-BLK1)				Prepared: 2016-07-05, Analyzed: 2016-07-05						
Mercury, dissolved	< 0.00002	0.00002	mg/L							
Duplicate (B6G0184-DUP1)				**Source: 6062600-13**	Prepared: 2016-07-05, Analyzed: 2016-07-05					
Mercury, dissolved	< 0.00002	0.00002	mg/L		< 0.00002				20	
Reference (B6G0184-SRM1)				Prepared: 2016-07-05, Analyzed: 2016-07-05						
Mercury, dissolved	0.00357	0.00002	mg/L	0.00456		78	50-150			
Dissolved Metals, Batch B6G0212										
Blank (B6G0212-BLK1)				Prepared: 2016-07-06, Analyzed: 2016-07-06						
Aluminum, dissolved	< 0.005	0.005	mg/L							
Antimony, dissolved	< 0.0001	0.0001	mg/L							
Arsenic, dissolved	< 0.0005	0.0005	mg/L							
Barium, dissolved	< 0.005	0.005	mg/L							
Beryllium, dissolved	< 0.0001	0.0001	mg/L							
Bismuth, dissolved	< 0.0001	0.0001	mg/L							
Boron, dissolved	< 0.004	0.004	mg/L							
Cadmium, dissolved	< 0.00001	0.00001	mg/L							
Calcium, dissolved	< 0.2	0.2	mg/L							
Chromium, dissolved	< 0.0005	0.0005	mg/L							
Cobalt, dissolved	< 0.00005	0.00005	mg/L							
Copper, dissolved	< 0.0002	0.0002	mg/L							
Iron, dissolved	< 0.010	0.010	mg/L							
Lead, dissolved	< 0.0001	0.0001	mg/L							
Lithium, dissolved	< 0.0001	0.0001	mg/L							
Magnesium, dissolved	< 0.01	0.01	mg/L							
Manganese, dissolved	< 0.0002	0.0002	mg/L							
Molybdenum, dissolved	< 0.0001	0.0001	mg/L							
Nickel, dissolved	< 0.0002	0.0002	mg/L							
Phosphorus, dissolved	< 0.02	0.02	mg/L							
Potassium, dissolved	< 0.02	0.02	mg/L							
Selenium, dissolved	< 0.0005	0.0005	mg/L							
Silicon, dissolved	< 0.5	0.5	mg/L							
Silver, dissolved	< 0.00005	0.00005	mg/L							
Sodium, dissolved	< 0.02	0.02	mg/L							
Strontium, dissolved	< 0.001	0.001	mg/L							
Sulfur, dissolved	< 1	1	mg/L							
Tellurium, dissolved	< 0.0002	0.0002	mg/L							
Thallium, dissolved	< 0.00002	0.00002	mg/L							
Thorium, dissolved	< 0.0001	0.0001	mg/L							
Tin, dissolved	< 0.0002	0.0002	mg/L							
Titanium, dissolved	< 0.005	0.005	mg/L							
Uranium, dissolved	< 0.00002	0.00002	mg/L							
Vanadium, dissolved	< 0.001	0.001	mg/L							
Zinc, dissolved	< 0.004	0.004	mg/L							
Zirconium, dissolved	< 0.0001	0.0001	mg/L							
Duplicate (B6G0212-DUP1)				**Source: 6062600-01**	Prepared: 2016-07-06, Analyzed: 2016-07-06					
Aluminum, dissolved	< 0.005	0.005	mg/L		< 0.005				11	
Antimony, dissolved	< 0.0001	0.0001	mg/L		< 0.0001				44	
Arsenic, dissolved	0.0079	0.0005	mg/L		0.0080			1	8	
Barium, dissolved	0.076	0.005	mg/L		0.076			< 1	7	
Beryllium, dissolved	< 0.0001	0.0001	mg/L		< 0.0001				14	
Bismuth, dissolved	< 0.0001	0.0001	mg/L		< 0.0001				20	
Boron, dissolved	0.126	0.004	mg/L		0.130			4	13	

REPORTED TO Morrison Hershfield Limited
PROJECT Whistler Landfill - Summer/Winter

WORK ORDER 6062600
REPORTED 2016-07-11

Analyte	Result	MRL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Notes
Dissolved Metals, Batch B6G0212, Continued										
Duplicate (B6G0212-DUP1), Continued		**Source: 6062600-01**		Prepared: 2016-07-06, Analyzed: 2016-07-06						
Cadmium, dissolved	0.00001	0.00001	mg/L		0.00001				27	
Calcium, dissolved	34.5	0.2	mg/L		36.9			7	8	
Chromium, dissolved	< 0.0005	0.0005	mg/L		< 0.0005				14	
Cobalt, dissolved	0.00223	0.00005	mg/L		0.00228			2	10	
Copper, dissolved	< 0.0002	0.0002	mg/L		< 0.0002				28	
Iron, dissolved	38.2	0.010	mg/L		39.2			2	14	
Lead, dissolved	< 0.0001	0.0001	mg/L		< 0.0001				26	
Lithium, dissolved	< 0.0001	0.0001	mg/L		< 0.0001				14	
Magnesium, dissolved	6.85	0.01	mg/L		6.95			1	6	
Manganese, dissolved	1.77	0.0002	mg/L		1.80			2	9	
Molybdenum, dissolved	0.0058	0.0001	mg/L		0.0058			< 1	19	
Nickel, dissolved	0.0007	0.0002	mg/L		0.0007				21	
Phosphorus, dissolved	0.03	0.02	mg/L		0.02				14	
Potassium, dissolved	8.17	0.02	mg/L		8.34			2	8	
Selenium, dissolved	< 0.0005	0.0005	mg/L		< 0.0005				36	
Silicon, dissolved	10.4	0.5	mg/L		10.5			< 1	12	
Silver, dissolved	< 0.00005	0.00005	mg/L		< 0.00005				20	
Sodium, dissolved	8.74	0.02	mg/L		8.78			< 1	6	
Strontium, dissolved	0.199	0.001	mg/L		0.200			< 1	6	
Sulfur, dissolved	20	1	mg/L		19			5	26	
Tellurium, dissolved	< 0.0002	0.0002	mg/L		< 0.0002				20	
Thallium, dissolved	< 0.00002	0.00002	mg/L		< 0.00002				13	
Thorium, dissolved	< 0.0001	0.0001	mg/L		< 0.0001				30	
Tin, dissolved	< 0.0002	0.0002	mg/L		< 0.0002				6	
Titanium, dissolved	< 0.005	0.005	mg/L		< 0.005				20	
Uranium, dissolved	0.00003	0.00002	mg/L		0.00003				14	
Vanadium, dissolved	< 0.001	0.001	mg/L		< 0.001				20	
Zinc, dissolved	< 0.004	0.004	mg/L		< 0.004				11	
Zirconium, dissolved	< 0.0001	0.0001	mg/L		< 0.0001				36	
Matrix Spike (B6G0212-MS1)		**Source: 6062600-02**		Prepared: 2016-07-06, Analyzed: 2016-07-06						
Antimony, dissolved	0.400	0.0001	mg/L	0.400	< 0.0001	100	76-114			
Arsenic, dissolved	0.212	0.0005	mg/L	0.200	0.0157	98	81-115			
Barium, dissolved	0.962	0.005	mg/L	1.00	0.031	93	80-113			
Beryllium, dissolved	0.0936	0.0001	mg/L	0.100	< 0.0001	94	69-109			
Cadmium, dissolved	0.0938	0.00001	mg/L	0.100	0.00001	94	83-110			
Chromium, dissolved	0.400	0.0005	mg/L	0.400	< 0.0005	100	85-115			
Cobalt, dissolved	0.409	0.00005	mg/L	0.400	0.0147	99	86-114			
Copper, dissolved	0.396	0.0002	mg/L	0.400	< 0.0002	99	82-119			
Iron, dissolved	61.7	0.010	mg/L	2.00	65.5	NR	80-116			SPK1
Lead, dissolved	0.196	0.0001	mg/L	0.200	< 0.0001	98	83-112			
Manganese, dissolved	4.10	0.0002	mg/L	0.400	4.11	NR	62-131			SPK1
Nickel, dissolved	0.389	0.0002	mg/L	0.400	0.0031	96	81-115			
Selenium, dissolved	0.103	0.0005	mg/L	0.100	< 0.0005	103	79-115			
Silver, dissolved	0.102	0.00005	mg/L	0.100	< 0.00005	102	69-121			
Thallium, dissolved	0.0988	0.00002	mg/L	0.100	< 0.00002	99	84-115			
Vanadium, dissolved	0.430	0.001	mg/L	0.400	< 0.001	107	83-113			
Zinc, dissolved	0.571	0.004	mg/L	0.600	< 0.004	95	82-115			
Reference (B6G0212-SRM1)				Prepared: 2016-07-06, Analyzed: 2016-07-06						
Aluminum, dissolved	0.227	0.005	mg/L	0.233		98	58-142			
Antimony, dissolved	0.0465	0.0001	mg/L	0.0430		108	75-125			
Arsenic, dissolved	0.446	0.0005	mg/L	0.438		102	81-119			
Barium, dissolved	3.30	0.005	mg/L	3.35		99	83-117			
Beryllium, dissolved	0.219	0.0001	mg/L	0.213		103	80-120			
Boron, dissolved	1.78	0.004	mg/L	1.74		102	74-117			
Cadmium, dissolved	0.222	0.00001	mg/L	0.224		99	83-117			

REPORTED TO Morrison Hershfield Limited
PROJECT Whistler Landfill - Summer/Winter

WORK ORDER 6062600
REPORTED 2016-07-11

Analyte	Result	MRL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Notes
Dissolved Metals, Batch B6G0212, Continued										
Reference (B6G0212-SRM1), Continued				Prepared: 2016-07-06, Analyzed: 2016-07-06						
Calcium, dissolved	8.6	0.2	mg/L	7.69		111	76-124			
Chromium, dissolved	0.459	0.0005	mg/L	0.437		105	81-119			
Cobalt, dissolved	0.138	0.00005	mg/L	0.128		108	76-124			
Copper, dissolved	0.901	0.0002	mg/L	0.844		107	84-116			
Iron, dissolved	1.37	0.010	mg/L	1.29		106	74-126			
Lead, dissolved	0.117	0.0001	mg/L	0.112		105	72-128			
Lithium, dissolved	0.105	0.0001	mg/L	0.104		101	60-140			
Magnesium, dissolved	7.32	0.01	mg/L	6.92		106	81-119			
Manganese, dissolved	0.348	0.0002	mg/L	0.345		101	84-116			
Molybdenum, dissolved	0.459	0.0001	mg/L	0.426		108	83-117			
Nickel, dissolved	0.894	0.0002	mg/L	0.840		106	74-126			
Phosphorus, dissolved	0.49	0.02	mg/L	0.495		99	68-132			
Potassium, dissolved	3.31	0.02	mg/L	3.19		104	74-126			
Selenium, dissolved	0.0354	0.0005	mg/L	0.0331		107	70-130			
Sodium, dissolved	20.2	0.02	mg/L	19.1		106	72-128			
Strontium, dissolved	0.897	0.001	mg/L	0.916		98	84-113			
Thallium, dissolved	0.0403	0.00002	mg/L	0.0393		103	57-143			
Uranium, dissolved	0.270	0.00002	mg/L	0.266		102	85-115			
Vanadium, dissolved	0.890	0.001	mg/L	0.869		102	87-113			
Zinc, dissolved	0.889	0.004	mg/L	0.881		101	72-128			
General Parameters, Batch B6F2058										
Blank (B6F2058-BLK1)				Prepared: 2016-07-02, Analyzed: 2016-07-07						
BOD, 5-day	< 2	2	mg/L							
LCS (B6F2058-BS1)				Prepared: 2016-07-02, Analyzed: 2016-07-07						
BOD, 5-day	188	2	mg/L	198		95	85-115			
Duplicate (B6F2058-DUP1)			**Source: 6062600-05**	Prepared: 2016-07-02, Analyzed: 2016-07-07						
BOD, 5-day	107	2	mg/L		< 3				23	
Reference (B6F2058-SRM1)				Prepared: 2016-07-02, Analyzed: 2016-07-07						
BOD, 5-day	200	2	mg/L	198		101	66-136			
General Parameters, Batch B6G0016										
Blank (B6G0016-BLK1)				Prepared: 2016-07-04, Analyzed: 2016-07-04						
Ammonia, Total (as N)	< 0.020	0.005	mg/L							
LCS (B6G0016-BS1)				Prepared: 2016-07-04, Analyzed: 2016-07-04						
Ammonia, Total (as N)	0.959	0.005	mg/L	1.00		96	86-111			
Duplicate (B6G0016-DUP1)			**Source: 6062600-03**	Prepared: 2016-07-04, Analyzed: 2016-07-04						
Ammonia, Total (as N)	0.252	0.005	mg/L		0.261			4	15	
Matrix Spike (B6G0016-MS1)			**Source: 6062600-03**	Prepared: 2016-07-04, Analyzed: 2016-07-04						
Ammonia, Total (as N)	0.492	0.005	mg/L	0.250	0.261	93	76-121			
General Parameters, Batch B6G0090										
Blank (B6G0090-BLK1)				Prepared: 2016-07-04, Analyzed: 2016-07-09						
BOD, 5-day	< 2	2	mg/L							
LCS (B6G0090-BS1)				Prepared: 2016-07-04, Analyzed: 2016-07-09						
BOD, 5-day	199	2	mg/L	198		100	85-115			

REPORTED TO Morrison Hershfield Limited
PROJECT Whistler Landfill - Summer/Winter

WORK ORDER 6062600
REPORTED 2016-07-11

Analyte	Result	MRL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Notes
General Parameters, Batch B6G0090, Continued										
Duplicate (B6G0090-DUP1)	**Source: 6062600-08**			Prepared: 2016-07-04, Analyzed: 2016-07-09						
BOD, 5-day	< 2	2	mg/L		< 2				20	
General Parameters, Batch B6G0104										
Blank (B6G0104-BLK1)				Prepared: 2016-07-04, Analyzed: 2016-07-04						
Alkalinity, Total (as CaCO3)	< 1	2	mg/L							
Alkalinity, Phenolphthalein (as CaCO3)	< 1	2	mg/L							
Alkalinity, Bicarbonate (as CaCO3)	< 1	2	mg/L							
Alkalinity, Carbonate (as CaCO3)	< 1	2	mg/L							
Alkalinity, Hydroxide (as CaCO3)	< 1	2	mg/L							
Conductivity (EC)	< 2	2	µS/cm							
Blank (B6G0104-BLK2)				Prepared: 2016-07-04, Analyzed: 2016-07-04						
Alkalinity, Total (as CaCO3)	< 1	2	mg/L							
Alkalinity, Phenolphthalein (as CaCO3)	< 1	2	mg/L							
Alkalinity, Bicarbonate (as CaCO3)	< 1	2	mg/L							
Alkalinity, Carbonate (as CaCO3)	< 1	2	mg/L							
Alkalinity, Hydroxide (as CaCO3)	< 1	2	mg/L							
Conductivity (EC)	< 2	2	µS/cm							
LCS (B6G0104-BS1)				Prepared: 2016-07-04, Analyzed: 2016-07-04						
Alkalinity, Total (as CaCO3)	103	2	mg/L	100		103	96-108			
LCS (B6G0104-BS2)				Prepared: 2016-07-04, Analyzed: 2016-07-04						
Alkalinity, Total (as CaCO3)	102	2	mg/L	100		102	96-108			
LCS (B6G0104-BS3)				Prepared: 2016-07-04, Analyzed: 2016-07-04						
Conductivity (EC)	1390	2	µS/cm	1410		98	95-104			
LCS (B6G0104-BS4)				Prepared: 2016-07-04, Analyzed: 2016-07-04						
Conductivity (EC)	1410	2	µS/cm	1410		100	95-104			
Reference (B6G0104-SRM1)				Prepared: 2016-07-04, Analyzed: 2016-07-04						
pH	6.94	0.01	pH units	7.00		99	98-102			
Reference (B6G0104-SRM2)				Prepared: 2016-07-04, Analyzed: 2016-07-04						
pH	6.94	0.01	pH units	7.00		99	98-102			
General Parameters, Batch B6G0253										
Blank (B6G0253-BLK1)				Prepared: 2016-07-06, Analyzed: 2016-07-07						
Nitrogen, Total Kjeldahl	< 0.05	0.05	mg/L							
Blank (B6G0253-BLK2)				Prepared: 2016-07-06, Analyzed: 2016-07-07						
Nitrogen, Total Kjeldahl	< 0.05	0.05	mg/L							
LCS (B6G0253-BS1)				Prepared: 2016-07-06, Analyzed: 2016-07-07						
Nitrogen, Total Kjeldahl	11.6	0.05	mg/L	10.0		116	80-120			
LCS (B6G0253-BS2)				Prepared: 2016-07-06, Analyzed: 2016-07-07						
Nitrogen, Total Kjeldahl	10.2	0.05	mg/L	10.0		102	80-120			
Duplicate (B6G0253-DUP2)	**Source: 6062600-02**			Prepared: 2016-07-06, Analyzed: 2016-07-07						
Nitrogen, Total Kjeldahl	12.3	0.05	mg/L		13.1			7	16	
Matrix Spike (B6G0253-MS2)	**Source: 6062600-02**			Prepared: 2016-07-06, Analyzed: 2016-07-07						
Nitrogen, Total Kjeldahl	21.5	0.05	mg/L	10.0	13.1	83	65-135			

REPORTED TO Morrison Hershfield Limited
PROJECT Whistler Landfill - Summer/Winter

WORK ORDER 6062600
REPORTED 2016-07-11

Analyte	Result	MRL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Notes
General Parameters, Batch B6G0284										
Blank (B6G0284-BLK1)				Prepared: 2016-07-06, Analyzed: 2016-07-08						
Phosphorus, Total (as P)	< 0.002	0.002	mg/L							
Blank (B6G0284-BLK2)				Prepared: 2016-07-06, Analyzed: 2016-07-08						
Phosphorus, Total (as P)	< 0.002	0.002	mg/L							
LCS (B6G0284-BS1)				Prepared: 2016-07-06, Analyzed: 2016-07-08						
Phosphorus, Total (as P)	0.095	0.002	mg/L	0.100		95	75-112			
LCS (B6G0284-BS2)				Prepared: 2016-07-06, Analyzed: 2016-07-08						
Phosphorus, Total (as P)	0.095	0.002	mg/L	0.100		95	75-112			
General Parameters, Batch B6G0297										
Blank (B6G0297-BLK1)				Prepared: 2016-07-06, Analyzed: 2016-07-06						
Solids, Total Suspended	< 1	2	mg/L							
LCS (B6G0297-BS1)				Prepared: 2016-07-06, Analyzed: 2016-07-06						
Solids, Total Suspended	48	2	mg/L	50.0		97	85-110			
Duplicate (B6G0297-DUP1)		**Source: 6062600-12**		Prepared: 2016-07-06, Analyzed: 2016-07-06						
Solids, Total Suspended	39	2	mg/L		37			6	20	
General Parameters, Batch B6G0299										
Blank (B6G0299-BLK1)				Prepared: 2016-07-06, Analyzed: 2016-07-06						
Solids, Total Dissolved	< 10	10	mg/L							
Duplicate (B6G0299-DUP1)		**Source: 6062600-11**		Prepared: 2016-07-06, Analyzed: 2016-07-06						
Solids, Total Dissolved	99	10	mg/L		101			2	16	
Reference (B6G0299-SRM1)				Prepared: 2016-07-06, Analyzed: 2016-07-06						
Solids, Total Dissolved	244	10	mg/L	240		102	85-115			
Polycyclic Aromatic Hydrocarbons (PAH), Batch B6G0072										
Blank (B6G0072-BLK1)				Prepared: 2016-07-04, Analyzed: 2016-07-05						
Acenaphthene	< 0.05	0.05	µg/L							
Acenaphthylene	< 0.20	0.20	µg/L							
Acridine	< 0.10	0.10	µg/L							
Anthracene	< 0.01	0.01	µg/L							
Benz (a) anthracene	< 0.01	0.01	µg/L							
Benzo (a) pyrene	< 0.01	0.01	µg/L							
Benzo (b) fluoranthene	< 0.05	0.05	µg/L							
Benzo (g,h,i) perylene	< 0.05	0.05	µg/L							
Benzo (k) fluoranthene	< 0.05	0.05	µg/L							
Chrysene	< 0.05	0.05	µg/L							
Dibenz (a,h) anthracene	< 0.05	0.05	µg/L							
Fluoranthene	< 0.03	0.03	µg/L							
Fluorene	< 0.05	0.05	µg/L							
Indeno (1,2,3-cd) pyrene	< 0.05	0.05	µg/L							
Naphthalene	< 0.20	0.20	µg/L							
Phenanthrene	< 0.10	0.10	µg/L							
Pyrene	< 0.02	0.02	µg/L							
Quinoline	< 0.10	0.10	µg/L							
Surrogate: Acridine-d9	*3.96*		*µg/L*	4.44		*89*	*60-140*			

REPORTED TO Morrison Hershfield Limited
PROJECT Whistler Landfill - Summer/Winter

WORK ORDER 6062600
REPORTED 2016-07-11

Analyte	Result	MRL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Notes
Polycyclic Aromatic Hydrocarbons (PAH), Batch B6G0072, Continued										
Blank (B6G0072-BLK1), Continued				Prepared: 2016-07-04, Analyzed: 2016-07-05						
Surrogate: Naphthalene-d8	*5.35*		*µg/L*	4.44		*120*	*60-140*			
Surrogate: Perylene-d12	*4.86*		*µg/L*	4.44		*109*	*60-140*			
LCS (B6G0072-BS1)				Prepared: 2016-07-04, Analyzed: 2016-07-05						
Acenaphthene	3.57	0.05	µg/L	4.44		80	70-130			
Acenaphthylene	3.61	0.20	µg/L	4.44		81	70-130			
Acridine	3.27	0.10	µg/L	4.44		74	60-140			
Anthracene	3.78	0.01	µg/L	4.44		85	70-130			
Benz (a) anthracene	3.14	0.01	µg/L	4.44		71	70-130			
Benzo (a) pyrene	3.62	0.01	µg/L	4.44		82	70-130			
Benzo (b) fluoranthene	3.17	0.05	µg/L	4.44		71	70-130			
Benzo (g,h,i) perylene	3.67	0.05	µg/L	4.44		83	70-130			
Benzo (k) fluoranthene	3.23	0.05	µg/L	4.44		73	70-130			
Chrysene	3.30	0.05	µg/L	4.44		74	70-130			
Dibenz (a,h) anthracene	3.35	0.05	µg/L	4.44		75	70-130			
Fluoranthene	3.76	0.03	µg/L	4.44		85	70-130			
Fluorene	3.35	0.05	µg/L	4.44		75	70-130			
Indeno (1,2,3-cd) pyrene	3.53	0.05	µg/L	4.44		79	70-130			
Naphthalene	3.96	0.20	µg/L	4.44		89	70-130			
Phenanthrene	3.74	0.10	µg/L	4.44		84	70-130			
Pyrene	3.84	0.02	µg/L	4.44		86	70-130			
Quinoline	4.18	0.10	µg/L	4.44		94	70-130			
Surrogate: Acridine-d9	*3.83*		*µg/L*	4.44		*86*	*60-140*			
Surrogate: Naphthalene-d8	*4.11*		*µg/L*	4.44		*93*	*60-140*			
Surrogate: Perylene-d12	*4.75*		*µg/L*	4.44		*107*	*60-140*			
LCS Dup (B6G0072-BSD1)				Prepared: 2016-07-04, Analyzed: 2016-07-05						
Acenaphthene	3.99	0.05	µg/L	4.44		90	70-130	11	20	
Acenaphthylene	4.03	0.20	µg/L	4.44		91	70-130	11	20	
Acridine	3.18	0.10	µg/L	4.44		72	60-140	3	20	
Anthracene	3.70	0.01	µg/L	4.44		83	70-130	2	20	
Benz (a) anthracene	3.23	0.01	µg/L	4.44		73	70-130	3	20	
Benzo (a) pyrene	3.59	0.01	µg/L	4.44		81	70-130	1	20	
Benzo (b) fluoranthene	3.24	0.05	µg/L	4.44		73	70-130	2	20	
Benzo (g,h,i) perylene	3.66	0.05	µg/L	4.44		82	70-130	< 1	20	
Benzo (k) fluoranthene	3.31	0.05	µg/L	4.44		75	70-130	2	20	
Chrysene	3.34	0.05	µg/L	4.44		75	70-130	1	20	
Dibenz (a,h) anthracene	3.42	0.05	µg/L	4.44		77	70-130	2	20	
Fluoranthene	4.32	0.03	µg/L	4.44		97	70-130	14	20	
Fluorene	3.91	0.05	µg/L	4.44		88	70-130	15	20	
Indeno (1,2,3-cd) pyrene	3.55	0.05	µg/L	4.44		80	70-130	< 1	20	
Naphthalene	4.70	0.20	µg/L	4.44		106	70-130	17	20	
Phenanthrene	3.66	0.10	µg/L	4.44		82	70-130	2	20	
Pyrene	4.55	0.02	µg/L	4.44		102	70-130	17	20	
Quinoline	4.10	0.10	µg/L	4.44		92	70-130	2	20	
Surrogate: Acridine-d9	*3.84*		*µg/L*	4.44		*86*	*60-140*			
Surrogate: Naphthalene-d8	*4.92*		*µg/L*	4.44		*111*	*60-140*			
Surrogate: Perylene-d12	*4.78*		*µg/L*	4.44		*107*	*60-140*			
Total Metals, Batch B6G0041										
Blank (B6G0041-BLK1)				Prepared: 2016-07-04, Analyzed: 2016-07-04						
Mercury, total	< 0.00002	0.00002	mg/L							
Duplicate (B6G0041-DUP1)			**Source: 6062600-09**	Prepared: 2016-07-04, Analyzed: 2016-07-04						
Mercury, total	< 0.00002	0.00002	mg/L		< 0.00002				20	

REPORTED TO Morrison Hershfield Limited
PROJECT Whistler Landfill - Summer/Winter

WORK ORDER 6062600
REPORTED 2016-07-11

Analyte	Result	MRL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Notes
Total Metals, Batch B6G0041, Continued										
Matrix Spike (B6G0041-MS1)		**Source: 6062600-11**		Prepared: 2016-07-04, Analyzed: 2016-07-04						
Mercury, total	0.00024	0.00002	mg/L	0.000250	< 0.00002	96	70-130			
Reference (B6G0041-SRM1)				Prepared: 2016-07-04, Analyzed: 2016-07-04						
Mercury, total	0.00367	0.00002	mg/L	0.00456		80	50-150			
Total Metals, Batch B6G0076										
Blank (B6G0076-BLK1)				Prepared: 2016-07-04, Analyzed: 2016-07-05						
Aluminum, total	< 0.005	0.005	mg/L							
Antimony, total	< 0.0001	0.0001	mg/L							
Arsenic, total	< 0.0005	0.0005	mg/L							
Barium, total	< 0.005	0.005	mg/L							
Beryllium, total	< 0.0001	0.0001	mg/L							
Bismuth, total	< 0.0001	0.0001	mg/L							
Boron, total	< 0.004	0.004	mg/L							
Cadmium, total	< 0.00001	0.00001	mg/L							
Calcium, total	< 0.2	0.2	mg/L							
Chromium, total	< 0.0005	0.0005	mg/L							
Cobalt, total	< 0.00005	0.00005	mg/L							
Copper, total	< 0.0002	0.0002	mg/L							
Iron, total	< 0.01	0.01	mg/L							
Lead, total	< 0.0001	0.0001	mg/L							
Lithium, total	< 0.0001	0.0001	mg/L							
Magnesium, total	< 0.01	0.01	mg/L							
Manganese, total	< 0.0002	0.0002	mg/L							
Molybdenum, total	< 0.0001	0.0001	mg/L							
Nickel, total	< 0.0002	0.0002	mg/L							
Phosphorus, total	< 0.02	0.02	mg/L							
Potassium, total	< 0.02	0.02	mg/L							
Selenium, total	< 0.0005	0.0005	mg/L							
Silicon, total	< 0.5	0.5	mg/L							
Silver, total	< 0.00005	0.00005	mg/L							
Sodium, total	< 0.02	0.02	mg/L							
Strontium, total	< 0.001	0.001	mg/L							
Sulfur, total	< 1	1	mg/L							
Tellurium, total	< 0.0002	0.0002	mg/L							
Thallium, total	< 0.00002	0.00002	mg/L							
Thorium, total	< 0.0001	0.0001	mg/L							
Tin, total	< 0.0002	0.0002	mg/L							
Titanium, total	< 0.005	0.005	mg/L							
Uranium, total	< 0.00002	0.00002	mg/L							
Vanadium, total	< 0.001	0.001	mg/L							
Zinc, total	< 0.004	0.004	mg/L							
Zirconium, total	< 0.0001	0.0001	mg/L							
Reference (B6G0076-SRM1)				Prepared: 2016-07-04, Analyzed: 2016-07-05						
Aluminum, total	0.330	0.005	mg/L	0.296		112	81-129			
Antimony, total	0.0478	0.0001	mg/L	0.0505		95	88-114			
Arsenic, total	0.115	0.0005	mg/L	0.122		94	88-114			
Barium, total	0.681	0.005	mg/L	0.777		88	72-104			
Beryllium, total	0.0562	0.0001	mg/L	0.0488		115	76-131			
Boron, total	3.97	0.004	mg/L	3.40		117	75-121			
Cadmium, total	0.0446	0.00001	mg/L	0.0490		91	89-111			
Calcium, total	11.5	0.2	mg/L	10.2		113	86-121			
Chromium, total	0.263	0.0005	mg/L	0.242		109	89-114			
Cobalt, total	0.0398	0.00005	mg/L	0.0366		109	91-113			

REPORTED TO Morrison Hershfield Limited
PROJECT Whistler Landfill - Summer/Winter

WORK ORDER 6062600
REPORTED 2016-07-11

Analyte	Result	MRL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Notes
Total Metals, Batch B6G0076, Continued										
Reference (B6G0076-SRM1), Continued				Prepared: 2016-07-04, Analyzed: 2016-07-05						
Copper, total	0.508	0.0002	mg/L	0.487		104	91-115			
Iron, total	0.53	0.01	mg/L	0.469		113	77-124			
Lead, total	0.183	0.0001	mg/L	0.193		95	92-113			
Lithium, total	0.446	0.0001	mg/L	0.390		114	85-115			
Magnesium, total	3.96	0.01	mg/L	3.31		120	78-120			
Manganese, total	0.112	0.0002	mg/L	0.109		103	90-114			
Molybdenum, total	0.189	0.0001	mg/L	0.197		96	90-111			
Nickel, total	0.253	0.0002	mg/L	0.242		104	90-111			
Phosphorus, total	0.23	0.02	mg/L	0.233		100	85-115			
Potassium, total	6.68	0.02	mg/L	5.93		113	84-113			
Selenium, total	0.115	0.0005	mg/L	0.115		100	85-115			
Sodium, total	8.59	0.02	mg/L	7.64		112	82-123			
Strontium, total	0.357	0.001	mg/L	0.363		98	88-112			
Thallium, total	0.0735	0.00002	mg/L	0.0794		93	91-114			
Uranium, total	0.0215	0.00002	mg/L	0.0192		112	85-120			
Vanadium, total	0.395	0.001	mg/L	0.376		105	86-111			
Zinc, total	2.47	0.004	mg/L	2.42		102	85-111			
Volatile Organic Compounds (VOC), Batch B6F2053										
Blank (B6F2053-BLK1)				Prepared: 2016-06-30, Analyzed: 2016-06-30						
Benzene	< 0.5	0.5	µg/L							
Bromodichloromethane	< 1.0	1.0	µg/L							
Bromoform	< 1.0	1.0	µg/L							
Carbon tetrachloride	< 1.0	1.0	µg/L							
Chlorobenzene	< 1.0	1.0	µg/L							
Chloroethane	< 2.0	2.0	µg/L							
Chloroform	< 1.0	1.0	µg/L							
Dibromochloromethane	< 1.0	1.0	µg/L							
1,2-Dibromoethane	< 0.3	0.3	µg/L							
Dibromomethane	< 1.0	1.0	µg/L							
1,2-Dichlorobenzene	< 0.5	0.5	µg/L							
1,3-Dichlorobenzene	< 1.0	1.0	µg/L							
1,4-Dichlorobenzene	< 1.0	1.0	µg/L							
1,1-Dichloroethane	< 1.0	1.0	µg/L							
1,2-Dichloroethane	< 1.0	1.0	µg/L							
1,1-Dichloroethene	< 1.0	1.0	µg/L							
cis-1,2-Dichloroethene	< 1.0	1.0	µg/L							
trans-1,2-Dichloroethene	< 1.0	1.0	µg/L							
1,2-Dichloropropane	< 1.0	1.0	µg/L							
1,3-Dichloropropene	< 1.0	1.0	µg/L							
Ethylbenzene	< 1.0	1.0	µg/L							
Methyl tert-butyl ether	< 1.0	1.0	µg/L							
Methylene chloride	< 3.0	3.0	µg/L							
Styrene	< 1.0	1.0	µg/L							
1,1,2,2-Tetrachloroethane	< 1.0	1.0	µg/L							
Tetrachloroethene	< 1.0	1.0	µg/L							
Toluene	< 1.0	1.0	µg/L							
1,1,1-Trichloroethane	< 1.0	1.0	µg/L							
1,1,2-Trichloroethane	< 1.0	1.0	µg/L							
Trichloroethene	< 1.0	1.0	µg/L							
Trichlorofluoromethane	< 1.0	1.0	µg/L							
Vinyl chloride	< 2.0	2.0	µg/L							
Xylenes (total)	< 2.0	2.0	µg/L							
Surrogate: Toluene-d8	*25.3*		*µg/L*	25.0		*101*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*26.8*		*µg/L*	25.0		*107*	*70-130*			

REPORTED TO Morrison Hershfield Limited
PROJECT Whistler Landfill - Summer/Winter

WORK ORDER 6062600
REPORTED 2016-07-11

Analyte	Result	MRL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Notes
Volatile Organic Compounds (VOC), Batch B6F2053, Continued										
Blank (B6F2053-BLK1), Continued				Prepared: 2016-06-30, Analyzed: 2016-06-30						
Surrogate: 1,4-Dichlorobenzene-d4	*26.3*		*µg/L*	25.0		*105*	*70-130*			
LCS (B6F2053-BS1)				Prepared: 2016-06-30, Analyzed: 2016-06-30						
Benzene	21.9	0.5	µg/L	20.0		110	70-130			
Bromodichloromethane	20.3	1.0	µg/L	20.0		102	70-130			
Bromoform	21.1	1.0	µg/L	20.0		105	70-130			
Carbon tetrachloride	20.1	1.0	µg/L	20.0		101	70-130			
Chlorobenzene	21.8	1.0	µg/L	20.0		109	70-130			
Chloroethane	22.5	2.0	µg/L	20.0		113	70-130			
Chloroform	22.2	1.0	µg/L	20.0		111	70-130			
Dibromochloromethane	19.9	1.0	µg/L	20.0		99	70-130			
1,2-Dibromoethane	20.3	0.3	µg/L	20.0		102	70-130			
Dibromomethane	21.4	1.0	µg/L	20.0		107	70-130			
1,2-Dichlorobenzene	22.4	0.5	µg/L	20.0		112	70-130			
1,3-Dichlorobenzene	22.1	1.0	µg/L	20.0		111	70-130			
1,4-Dichlorobenzene	22.1	1.0	µg/L	20.0		111	70-130			
1,1-Dichloroethane	22.3	1.0	µg/L	20.0		112	70-130			
1,2-Dichloroethane	21.3	1.0	µg/L	20.0		107	70-130			
1,1-Dichloroethene	21.4	1.0	µg/L	20.0		107	70-130			
cis-1,2-Dichloroethene	21.1	1.0	µg/L	20.0		106	70-130			
trans-1,2-Dichloroethene	20.6	1.0	µg/L	20.0		103	70-130			
1,2-Dichloropropane	20.8	1.0	µg/L	20.0		104	70-130			
1,3-Dichloropropene	45.3	1.0	µg/L	40.0		113	70-130			
Ethylbenzene	21.8	1.0	µg/L	20.0		109	70-130			
Methyl tert-butyl ether	21.2	1.0	µg/L	20.0		106	70-130			
Methylene chloride	21.1	3.0	µg/L	20.0		106	70-130			
Styrene	21.6	1.0	µg/L	20.0		108	70-130			
1,1,2,2-Tetrachloroethane	21.1	1.0	µg/L	20.0		106	70-130			
Tetrachloroethene	20.2	1.0	µg/L	20.0		101	70-130			
Toluene	22.7	1.0	µg/L	20.0		114	70-130			
1,1,1-Trichloroethane	22.0	1.0	µg/L	20.0		110	70-130			
1,1,2-Trichloroethane	21.7	1.0	µg/L	20.0		108	70-130			
Trichloroethene	22.6	1.0	µg/L	20.0		113	70-130			
Trichlorofluoromethane	22.2	1.0	µg/L	20.0		111	70-130			
Vinyl chloride	23.5	2.0	µg/L	20.0		118	70-130			
Xylenes (total)	65.1	2.0	µg/L	60.0		109	70-130			
Surrogate: Toluene-d8	*26.6*		*µg/L*	25.0		*106*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*28.0*		*µg/L*	25.0		*112*	*70-130*			
Surrogate: 1,4-Dichlorobenzene-d4	*30.9*		*µg/L*	25.0		*124*	*70-130*			

QC Qualifiers:

HT1	The sample was prepared and/or analyzed past the recommended holding time.
S05	The surrogate recoveries for this sample are not available.
SPK1	The recovery of this analyte was outside of established control limits. The data was accepted based on performance of other batch QC.

CERTIFICATE OF ANALYSIS

REPORTED TO	Morrison Hershfield Limited - Burnaby 310 - 4321 Still Creek Drive Burnaby, BC V5C 6S7	**TEL** **FAX**	(604) 454-0402 (604) 454-0403
ATTENTION	Josie Gilson	**WORK ORDER**	6091660
PO NUMBER		**RECEIVED / TEMP**	2016-09-22 15:42 / 12°C
PROJECT	Whistler Landfill - Spring/Fall	**REPORTED**	2016-09-30
PROJECT INFO	5104016	**COC NUMBER**	B35948

General Comments:

CARO Analytical Services employs methods which are conducted according to procedures accepted by appropriate regulatory agencies, and/or are conducted in accordance with recognized professional standards using accepted testing methodologies and quality control efforts, except where otherwise agreed to by the client.

The results in this report apply to the samples analyzed in accordance with the Chain of Custody or Sample Requisition document. This analytical report must be reproduced in its entirety. CARO is not responsible for any loss or damage resulting directly or indirectly from error or omission in the conduct of testing. Liability is limited to the cost of analysis. Samples will be disposed of 30 days after the test report has been issued unless otherwise agreed to in writing.

Authorized By: **Brent Coates, B.Sc.**
Division Manager, Richmond

If you have any questions or concerns, please contact your Account Manager:
Jeffery Lopes (jlopes@caro.ca)

Locations:

#110 4011 Viking Way
Richmond, BC V6V 2K9
Tel: 604-279-1499 Fax: 604-279-1599

#102 3677 Highway 97N
Kelowna, BC V1X 5C3
Tel: 250-765-9646 Fax: 250-765-3893

17225 109 Avenue
Edmonton, AB T5S 1H7
Tel: 780-489-9100 Fax: 780-489-9700

www.caro.ca

ANALYSIS INFORMATION

REPORTED TO	Morrison Hershfield Limited - Burnaby	**WORK ORDER**	6091660
PROJECT	Whistler Landfill - Spring/Fall	**REPORTED**	2016-09-30

Analysis Description	Method Reference	Technique	Location
Alkalinity in Water	APHA 2320 B*	Titration with H2SO4	Kelowna
Ammonia, Total in Water	APHA 4500-NH3 G*	Automated Colorimetry (Phenate)	Kelowna
Anions by IC in Water	APHA 4110 B	Ion Chromatography with Chemical Suppression of Eluent Conductivity	Kelowna
Chemical Oxygen Demand in Water	APHA 5220 D*	Closed Reflux, Colorimetry	Kelowna
Conductivity in Water	APHA 2510 B	Conductivity Meter	Richmond
Dissolved Metals by ICPMS in Water	APHA 3030 B / APHA 3125 B	0.45 µm Filtration / Inductively Coupled Plasma Mass Spectrometry (ICP-MS)	Richmond
EPH in Water	EPA 3511* / BCMOE EPHw	Hexane MicroExtraction (Base/Neutral) / Gas Chromatography (GC-FID)	Richmond
Hardness (as CaCO3) in Water	APHA 2340 B	Calculation: 2.497 [diss Ca] + 4.118 [diss Mg]	N/A
Hardness (as CaCO3) in Water	APHA 2340 B*	Calculation: 2.497 [total Ca] + 4.118 [total Mg] (Estimated)	N/A
HEPHw in Water	BCMOE LEPH/HEPH	Calculation	N/A
LEPHw in Water	BCMOE LEPH/HEPH	Calculation	N/A
Mercury, dissolved by CVAFS in Water	EPA 245.7*	BrCl2 Oxidation / Cold Vapor Atomic Fluorescence Spectrometry (CVAFS)	Richmond
Mercury, total by CVAFS in Water	EPA 245.7*	BrCl2 Oxidation / Cold Vapor Atomic Fluorescence Spectrometry (CVAFS)	Richmond
Nitrate+Nitrite by Colorimetry in Water	APHA 4500-NO3- F	Automated Colorimetry (Cadmium Reduction)	Kelowna
Nitrite by Colorimetry in Water	APHA 4500-NO3- F	Automated Colorimetry (Cadmium Reduction)	Kelowna
Nitrogen, Total Kjeldahl in Water	APHA 4500-Norg D*	Block Digestion and Flow Injection Analysis	Kelowna
pH in Water	APHA 4500-H+ B	Electrometry	Richmond
Polycyclic Aromatic Hydrocarbons in Water	EPA 3511* / EPA 8270D	Hexane MicroExtraction (Base/Neutral) / GC-MS (SIM)	Richmond
Solids, Total Suspended in Water	APHA 2540 D*	Gravimetry (Dried at 103-105C)	Richmond
Total Metals by ICPMS in Water	APHA 3030E* / APHA 3125 B	HNO3+HCl Hot Block Digestion / Inductively Coupled Plasma Mass Spectrometry (ICP-MS)	Richmond
VH in Water	EPA 5030B / BCMOE VHw	Purge&Trap / Gas Chromatography (GC-FID)	Richmond
Volatile Organic Compounds in Water	EPA 5030B / EPA 8260B	Purge&Trap / GC-MS (SIM)	Richmond
VPHw in Water	BCMOE VPH	Calculation: VH - (Benzene + Toluene + Ethylbenzene + Xylenes + Styrene)	N/A

Note: An asterisk in the Method Reference indicates that the CARO method has been modified from the reference method

Method Reference Descriptions:

APHA	Standard Methods for the Examination of Water and Wastewater, 22nd Edition, American Public Health Association/American Water Works Association/Water Environment Federation
BCMOE	British Columbia Environmental Laboratory Manual, 2015, British Columbia Ministry of Environment
EPA	United States Environmental Protection Agency Test Methods

ANALYSIS INFORMATION

REPORTED TO	Morrison Hershfield Limited - Burnaby	**WORK ORDER**	6091660
PROJECT	Whistler Landfill - Spring/Fall	**REPORTED**	2016-09-30

Glossary of Terms:

MRL	Method Reporting Limit
<	Less than the Reported Detection Limit (RDL) - the RDL may be higher than the MRL due to various factors such as dilutions, limited sample volume, high moisture, or interferences
mg/L	Milligrams per litre
pH units	pH < 7 = acidic, ph > 7 = basic
µg/L	Micrograms per litre
µS/cm	Microsiemens per centimetre

Standards / Guidelines Referenced in this Report:

BC CSR Schedule 4/5/6/11 Residential/Aquatic Water

Website: http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/375_96_00

Note: In some cases, the values displayed on the report represent the lowest guideline and are to be verified by the end user

REPORTED TO	Morrison Hershfield Limited - Burnaby	**WORK ORDER**	6091660
PROJECT	Whistler Landfill - Spring/Fall	**REPORTED**	2016-09-30

Analyte	Result / *Recovery*	Standard / Guideline	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: MW-4 (6091660-01) [Water] Sampled: 2016-09-21 10:00							
Anions							
Bromide	< 0.10	N/A	0.10	mg/L	N/A	2016-09-24	
Chloride	**8.58**	1500	0.10	mg/L	N/A	2016-09-24	
Fluoride	< 0.10	2	0.1	mg/L	N/A	2016-09-24	
Nitrite (as N)	**0.003**	0.2	0.001	mg/L	N/A	2016-09-28	HT1
Nitrate+Nitrite (as N)	**0.034**	400	0.005	mg/L	N/A	2016-09-28	
Sulfate	**23.6**	1000	1.0	mg/L	N/A	2016-09-24	
General Parameters							
pH	**6.48**	N/A	0.01	pH units	N/A	2016-09-23	HT2
Conductivity (EC)	**253**	N/A	2	µS/cm	N/A	2016-09-23	
Ammonia, Total (as N)	**1.63**	N/A	0.02	mg/L	N/A	2016-09-27	
Nitrogen, Total Kjeldahl	**1.65**	N/A	0.05	mg/L	2016-09-28	2016-09-28	
Alkalinity, Total (as CaCO3)	**70**	N/A	2	mg/L	N/A	2016-09-26	
Alkalinity, Phenolphthalein (as CaCO3)	< 1	N/A	2	mg/L	N/A	2016-09-26	
Alkalinity, Bicarbonate (as CaCO3)	**70**	N/A	2	mg/L	N/A	2016-09-26	
Alkalinity, Carbonate (as CaCO3)	< 1	N/A	2	mg/L	N/A	2016-09-26	
Alkalinity, Hydroxide (as CaCO3)	< 1	N/A	2	mg/L	N/A	2016-09-26	
Chemical Oxygen Demand	**7**	N/A	20	mg/L	N/A	2016-09-27	
Solids, Total Suspended	**488**	N/A	2	mg/L	N/A	2016-09-27	
Calculated Parameters							
Hardness, Total (as CaCO3)	**69.8**	N/A	0.50	mg/L	N/A	N/A	
Nitrate (as N)	**0.032**	400	0.005	mg/L	N/A	N/A	
Nitrogen, Total	**1.68**	N/A	0.050	mg/L	N/A	N/A	
Dissolved Metals							
Aluminum, dissolved	< 0.005	N/A	0.005	mg/L	N/A	2016-09-24	
Antimony, dissolved	< 0.0001	0.2	0.0001	mg/L	N/A	2016-09-24	
Arsenic, dissolved	**0.0051**	0.05	0.0005	mg/L	N/A	2016-09-24	
Barium, dissolved	**0.085**	5	0.005	mg/L	N/A	2016-09-24	
Beryllium, dissolved	< 0.0001	0.053	0.0001	mg/L	N/A	2016-09-24	
Bismuth, dissolved	< 0.0001	N/A	0.0001	mg/L	N/A	2016-09-24	
Boron, dissolved	**0.035**	50	0.004	mg/L	N/A	2016-09-24	
Cadmium, dissolved	**0.00012**	0.0001	0.00001	mg/L	N/A	2016-09-24	
Calcium, dissolved	**22.7**	N/A	0.2	mg/L	N/A	2016-09-24	
Chromium, dissolved	< 0.0005	N/A	0.0005	mg/L	N/A	2016-09-24	
Cobalt, dissolved	**0.0160**	0.04	0.00005	mg/L	N/A	2016-09-24	
Copper, dissolved	**0.0004**	0.02	0.0002	mg/L	N/A	2016-09-24	
Iron, dissolved	**27.9**	N/A	0.010	mg/L	N/A	2016-09-24	
Lead, dissolved	< 0.0001	0.04	0.0001	mg/L	N/A	2016-09-24	
Lithium, dissolved	< 0.0001	N/A	0.0001	mg/L	N/A	2016-09-24	
Magnesium, dissolved	**3.16**	N/A	0.01	mg/L	N/A	2016-09-24	
Manganese, dissolved	**1.45**	N/A	0.0002	mg/L	N/A	2016-09-24	
Mercury, dissolved	< 0.00002	0.001	0.00002	mg/L	2016-09-27	2016-09-28	
Molybdenum, dissolved	**0.0191**	10	0.0001	mg/L	N/A	2016-09-24	
Nickel, dissolved	**0.0017**	0.25	0.0002	mg/L	N/A	2016-09-24	
Phosphorus, dissolved	< 0.02	N/A	0.02	mg/L	N/A	2016-09-24	

REPORTED TO	Morrison Hershfield Limited - Burnaby	**WORK ORDER**	6091660
PROJECT	Whistler Landfill - Spring/Fall	**REPORTED**	2016-09-30

Analyte	Result / *Recovery*	Standard / Guideline	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: MW-4 (6091660-01) [Water] Sampled: 2016-09-21 10:00, Continued							
Dissolved Metals, Continued							
Potassium, dissolved	**3.95**	N/A	0.02	mg/L	N/A	2016-09-24	
Selenium, dissolved	< 0.0005	0.01	0.0005	mg/L	N/A	2016-09-24	
Silicon, dissolved	**9.2**	N/A	0.5	mg/L	N/A	2016-09-24	
Silver, dissolved	< 0.00005	0.0005	0.00005	mg/L	N/A	2016-09-24	
Sodium, dissolved	**10.6**	N/A	0.02	mg/L	N/A	2016-09-24	
Strontium, dissolved	**0.133**	N/A	0.001	mg/L	N/A	2016-09-24	
Sulfur, dissolved	**8**	N/A	1	mg/L	N/A	2016-09-24	
Tellurium, dissolved	< 0.0002	N/A	0.0002	mg/L	N/A	2016-09-24	
Thallium, dissolved	< 0.00002	0.003	0.00002	mg/L	N/A	2016-09-24	
Thorium, dissolved	< 0.0001	N/A	0.0001	mg/L	N/A	2016-09-24	
Tin, dissolved	< 0.0002	N/A	0.0002	mg/L	N/A	2016-09-24	
Titanium, dissolved	< 0.005	1	0.005	mg/L	N/A	2016-09-24	
Uranium, dissolved	**0.00007**	3	0.00002	mg/L	N/A	2016-09-24	
Vanadium, dissolved	< 0.001	N/A	0.001	mg/L	N/A	2016-09-24	
Zinc, dissolved	**0.013**	0.075	0.004	mg/L	N/A	2016-09-24	
Zirconium, dissolved	< 0.0001	N/A	0.0001	mg/L	N/A	2016-09-24	
BCMOE Aggregate Hydrocarbons							
VPHw	< 100	1500	100	µg/L	N/A	N/A	
EPHw10-19	< 250	5000	250	µg/L	2016-09-27	2016-09-27	
EPHw19-32	< 250	N/A	250	µg/L	2016-09-27	2016-09-27	
LEPHw	< 250	500	250	µg/L	N/A	N/A	
HEPHw	< 250	N/A	250	µg/L	N/A	N/A	
VHw (6-10)	< 100	15000	100	µg/L	N/A	2016-09-24	
Surrogate: 2-Methylnonane	*78*		*60-140*	%	*2016-09-27*	*2016-09-27*	
Polycyclic Aromatic Hydrocarbons (PAH)							
Acenaphthene	< 0.05	60	0.05	µg/L	2016-09-27	2016-09-27	
Acenaphthylene	< 0.20	N/A	0.20	µg/L	2016-09-27	2016-09-27	
Acridine	< 0.10	0.5	0.10	µg/L	2016-09-27	2016-09-27	
Anthracene	< 0.01	1	0.01	µg/L	2016-09-27	2016-09-27	
Benz (a) anthracene	< 0.01	1	0.01	µg/L	2016-09-27	2016-09-27	
Benzo (a) pyrene	< 0.01	0.1	0.01	µg/L	2016-09-27	2016-09-27	
Benzo (b) fluoranthene	< 0.05	N/A	0.05	µg/L	2016-09-27	2016-09-27	
Benzo (g,h,i) perylene	< 0.05	N/A	0.05	µg/L	2016-09-27	2016-09-27	
Benzo (k) fluoranthene	< 0.05	N/A	0.05	µg/L	2016-09-27	2016-09-27	
Chrysene	< 0.05	1	0.05	µg/L	2016-09-27	2016-09-27	
Dibenz (a,h) anthracene	< 0.05	N/A	0.05	µg/L	2016-09-27	2016-09-27	
Fluoranthene	< 0.03	2	0.03	µg/L	2016-09-27	2016-09-27	
Fluorene	< 0.05	120	0.05	µg/L	2016-09-27	2016-09-27	
Indeno (1,2,3-cd) pyrene	< 0.05	N/A	0.05	µg/L	2016-09-27	2016-09-27	
Naphthalene	< 0.20	10	0.20	µg/L	2016-09-27	2016-09-27	
Phenanthrene	< 0.10	3	0.10	µg/L	2016-09-27	2016-09-27	
Pyrene	< 0.02	0.2	0.02	µg/L	2016-09-27	2016-09-27	
Quinoline	< 0.10	34	0.10	µg/L	2016-09-27	2016-09-27	
Surrogate: Acridine-d9	*69*		*60-130*	%	*2016-09-27*	*2016-09-27*	

REPORTED TO	Morrison Hershfield Limited - Burnaby	**WORK ORDER**	6091660
PROJECT	Whistler Landfill - Spring/Fall	**REPORTED**	2016-09-30

Analyte	Result / *Recovery*	Standard / Guideline	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: MW-4 (6091660-01) [Water] Sampled: 2016-09-21 10:00, Continued							
Polycyclic Aromatic Hydrocarbons (PAH), Continued							
Surrogate: Naphthalene-d8	*89*		*60-130*	%	*2016-09-27*	*2016-09-27*	
Surrogate: Perylene-d12	*113*		*60-130*	%	*2016-09-27*	*2016-09-27*	
Volatile Organic Compounds (VOC)							
Acetone	< 10.0	N/A	10.0	µg/L	N/A	2016-09-24	
Benzene	< 0.5	1000	0.5	µg/L	N/A	2016-09-24	
Bromodichloromethane	< 1.0	N/A	1.0	µg/L	N/A	2016-09-24	
Bromoform	< 1.0	N/A	1.0	µg/L	N/A	2016-09-24	
Bromomethane	< 2.0	N/A	2.0	µg/L	N/A	2016-09-24	
2-Butanone (MEK)	< 5.0	N/A	5.0	µg/L	N/A	2016-09-24	
Carbon tetrachloride	< 1.0	130	1.0	µg/L	N/A	2016-09-24	
Chlorobenzene	< 1.0	13	1.0	µg/L	N/A	2016-09-24	
Chloroethane	< 2.0	N/A	2.0	µg/L	N/A	2016-09-24	
Chloroform	< 1.0	20	1.0	µg/L	N/A	2016-09-24	
Chloromethane	< 2.0	N/A	2.0	µg/L	N/A	2016-09-24	
Dibromochloromethane	< 1.0	N/A	1.0	µg/L	N/A	2016-09-24	
Dibromomethane	< 1.0	N/A	1.0	µg/L	N/A	2016-09-24	
1,3-Dichlorobenzene	< 1.0	1500	1.0	µg/L	N/A	2016-09-24	
1,4-Dichlorobenzene	< 1.0	260	1.0	µg/L	N/A	2016-09-24	
1,1-Dichloroethane	< 1.0	N/A	1.0	µg/L	N/A	2016-09-24	
1,2-Dichloroethane	< 1.0	1000	1.0	µg/L	N/A	2016-09-24	
1,1-Dichloroethene	< 1.0	N/A	1.0	µg/L	N/A	2016-09-24	
cis-1,2-Dichloroethene	< 1.0	N/A	1.0	µg/L	N/A	2016-09-24	
trans-1,2-Dichloroethene	< 1.0	N/A	1.0	µg/L	N/A	2016-09-24	
1,2-Dichloropropane	< 1.0	N/A	1.0	µg/L	N/A	2016-09-24	
cis-1,3-Dichloropropene	< 1.0	N/A	1.0	µg/L	N/A	2016-09-24	
trans-1,3-Dichloropropene	< 1.0	N/A	1.0	µg/L	N/A	2016-09-24	
Ethylbenzene	< 1.0	2000	1.0	µg/L	N/A	2016-09-24	
Methyl tert-butyl ether	< 1.0	34000	1.0	µg/L	N/A	2016-09-24	
Methylene chloride	< 3.0	980	3.0	µg/L	N/A	2016-09-24	
4-Methyl-2-Pentanone (MIBK)	< 10.0	N/A	10.0	µg/L	N/A	2016-09-24	
Styrene	< 1.0	720	1.0	µg/L	N/A	2016-09-24	
1,1,1,2-Tetrachloroethane	< 1.0	N/A	1.0	µg/L	N/A	2016-09-24	
1,1,2,2-Tetrachloroethane	< 1.0	1100	1.0	µg/L	N/A	2016-09-24	
Tetrachloroethene	< 1.0	N/A	1.0	µg/L	N/A	2016-09-24	
Toluene	< 1.0	390	1.0	µg/L	N/A	2016-09-24	
1,1,1-Trichloroethane	< 1.0	N/A	1.0	µg/L	N/A	2016-09-24	
1,1,2-Trichloroethane	< 1.0	N/A	1.0	µg/L	N/A	2016-09-24	
Trichloroethene	< 1.0	200	1.0	µg/L	N/A	2016-09-24	
Trichlorofluoromethane	< 1.0	N/A	1.0	µg/L	N/A	2016-09-24	
Vinyl chloride	< 2.0	N/A	2.0	µg/L	N/A	2016-09-24	
m,p-Xylene	< 1.0	N/A	1.0	µg/L	N/A	2016-09-24	
o-Xylene	< 1.0	N/A	1.0	µg/L	N/A	2016-09-24	
Xylenes (total)	< 2.0	N/A	2.0	µg/L	N/A	2016-09-24	
1,2-Dibromoethane	< 0.3	N/A	0.3	µg/L	N/A	2016-09-24	
1,2-Dichlorobenzene	< 0.5	7	0.5	µg/L	N/A	2016-09-24	

REPORTED TO	Morrison Hershfield Limited - Burnaby	**WORK ORDER**	6091660
PROJECT	Whistler Landfill - Spring/Fall	**REPORTED**	2016-09-30

Analyte	Result / *Recovery*	Standard / Guideline	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: MW-4 (6091660-01) [Water] Sampled: 2016-09-21 10:00, Continued							
Volatile Organic Compounds (VOC), Continued							
Surrogate: Toluene-d8	*87*		*70-130*	%	*N/A*	*2016-09-24*	
Surrogate: 4-Bromofluorobenzene	*89*		*70-130*	%	*N/A*	*2016-09-24*	
Surrogate: 1,4-Dichlorobenzene-d4	*88*		*70-130*	%	*N/A*	*2016-09-24*	
Sample ID: MW-2D (6091660-02) [Water] Sampled: 2016-09-21 11:00							
Anions							
Bromide	< 0.10	N/A	0.10	mg/L	N/A	2016-09-26	
Chloride	**31.2**	1500	0.10	mg/L	N/A	2016-09-26	
Fluoride	< 0.10	2	0.1	mg/L	N/A	2016-09-26	
Nitrite (as N)	**0.003**	0.2	0.001	mg/L	N/A	2016-09-28	HT1
Nitrate+Nitrite (as N)	**0.021**	400	0.005	mg/L	N/A	2016-09-28	
Sulfate	**257**	1000	1.0	mg/L	N/A	2016-09-26	
General Parameters							
pH	**6.48**	N/A	0.01	pH units	N/A	2016-09-23	HT2
Conductivity (EC)	**1100**	N/A	2	µS/cm	N/A	2016-09-23	
Ammonia, Total (as N)	**9.59**	N/A	0.02	mg/L	N/A	2016-09-27	
Nitrogen, Total Kjeldahl	**10.9**	N/A	0.05	mg/L	2016-09-28	2016-09-28	
Alkalinity, Total (as CaCO3)	**248**	N/A	2	mg/L	N/A	2016-09-26	
Alkalinity, Phenolphthalein (as CaCO3)	< 1	N/A	2	mg/L	N/A	2016-09-26	
Alkalinity, Bicarbonate (as CaCO3)	**248**	N/A	2	mg/L	N/A	2016-09-26	
Alkalinity, Carbonate (as CaCO3)	< 1	N/A	2	mg/L	N/A	2016-09-26	
Alkalinity, Hydroxide (as CaCO3)	< 1	N/A	2	mg/L	N/A	2016-09-26	
Chemical Oxygen Demand	**38**	N/A	20	mg/L	N/A	2016-09-27	
Solids, Total Suspended	**654**	N/A	2	mg/L	N/A	2016-09-27	
Calculated Parameters							
Hardness, Total (as CaCO3)	**377**	N/A	0.50	mg/L	N/A	N/A	
Nitrate (as N)	**0.018**	400	0.005	mg/L	N/A	N/A	
Nitrogen, Total	**10.9**	N/A	0.500	mg/L	N/A	N/A	
Dissolved Metals							
Aluminum, dissolved	< 0.005	N/A	0.005	mg/L	N/A	2016-09-24	
Antimony, dissolved	< 0.0001	0.2	0.0001	mg/L	N/A	2016-09-24	
Arsenic, dissolved	**0.0141**	0.05	0.0005	mg/L	N/A	2016-09-24	
Barium, dissolved	**0.029**	5	0.005	mg/L	N/A	2016-09-24	
Beryllium, dissolved	< 0.0001	0.053	0.0001	mg/L	N/A	2016-09-24	
Bismuth, dissolved	< 0.0001	N/A	0.0001	mg/L	N/A	2016-09-24	
Boron, dissolved	**0.243**	50	0.004	mg/L	N/A	2016-09-24	
Cadmium, dissolved	< 0.00001	0.0001	0.00001	mg/L	N/A	2016-09-24	
Calcium, dissolved	**124**	N/A	0.2	mg/L	N/A	2016-09-24	
Chromium, dissolved	< 0.0005	N/A	0.0005	mg/L	N/A	2016-09-24	
Cobalt, dissolved	**0.0130**	0.04	0.00005	mg/L	N/A	2016-09-24	
Copper, dissolved	< 0.0002	0.02	0.0002	mg/L	N/A	2016-09-24	
Iron, dissolved	**58.3**	N/A	0.010	mg/L	N/A	2016-09-24	
Lead, dissolved	< 0.0001	0.04	0.0001	mg/L	N/A	2016-09-24	

REPORTED TO	Morrison Hershfield Limited - Burnaby	**WORK ORDER**	6091660
PROJECT	Whistler Landfill - Spring/Fall	**REPORTED**	2016-09-30

Analyte	Result / *Recovery*	Standard / Guideline	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: MW-2D (6091660-02) [Water] Sampled: 2016-09-21 11:00, Continued							
Dissolved Metals, Continued							
Lithium, dissolved	< 0.0001	N/A	0.0001	mg/L	N/A	2016-09-24	
Magnesium, dissolved	**16.5**	N/A	0.01	mg/L	N/A	2016-09-24	
Manganese, dissolved	**3.93**	N/A	0.0002	mg/L	N/A	2016-09-24	
Mercury, dissolved	< 0.00002	0.001	0.00002	mg/L	2016-09-27	2016-09-28	
Molybdenum, dissolved	**0.0132**	10	0.0001	mg/L	N/A	2016-09-24	
Nickel, dissolved	**0.0026**	0.25	0.0002	mg/L	N/A	2016-09-24	
Phosphorus, dissolved	**0.08**	N/A	0.02	mg/L	N/A	2016-09-24	
Potassium, dissolved	**18.3**	N/A	0.02	mg/L	N/A	2016-09-24	
Selenium, dissolved	< 0.0005	0.01	0.0005	mg/L	N/A	2016-09-24	
Silicon, dissolved	**14.5**	N/A	0.5	mg/L	N/A	2016-09-24	
Silver, dissolved	< 0.00005	0.0005	0.00005	mg/L	N/A	2016-09-24	
Sodium, dissolved	**30.3**	N/A	0.02	mg/L	N/A	2016-09-24	
Strontium, dissolved	**0.509**	N/A	0.001	mg/L	N/A	2016-09-24	
Sulfur, dissolved	**87**	N/A	1	mg/L	N/A	2016-09-24	
Tellurium, dissolved	< 0.0002	N/A	0.0002	mg/L	N/A	2016-09-24	
Thallium, dissolved	< 0.00002	0.003	0.00002	mg/L	N/A	2016-09-24	
Thorium, dissolved	< 0.0001	N/A	0.0001	mg/L	N/A	2016-09-24	
Tin, dissolved	< 0.0002	N/A	0.0002	mg/L	N/A	2016-09-24	
Titanium, dissolved	< 0.005	1	0.005	mg/L	N/A	2016-09-24	
Uranium, dissolved	**0.00018**	3	0.00002	mg/L	N/A	2016-09-24	
Vanadium, dissolved	< 0.001	N/A	0.001	mg/L	N/A	2016-09-24	
Zinc, dissolved	**0.007**	0.075	0.004	mg/L	N/A	2016-09-24	
Zirconium, dissolved	< 0.0001	N/A	0.0001	mg/L	N/A	2016-09-24	
BCMOE Aggregate Hydrocarbons							
VPHw	< 100	1500	100	µg/L	N/A	N/A	
EPHw10-19	< 250	5000	250	µg/L	2016-09-27	2016-09-27	
EPHw19-32	< 250	N/A	250	µg/L	2016-09-27	2016-09-27	
LEPHw	< 250	500	250	µg/L	N/A	N/A	
HEPHw	< 250	N/A	250	µg/L	N/A	N/A	
VHw (6-10)	< 100	15000	100	µg/L	N/A	2016-09-24	
Surrogate: 2-Methylnonane	*83*		*60-140*	%	*2016-09-27*	*2016-09-27*	
Polycyclic Aromatic Hydrocarbons (PAH)							
Acenaphthene	< 0.05	60	0.05	µg/L	2016-09-27	2016-09-27	
Acenaphthylene	< 0.20	N/A	0.20	µg/L	2016-09-27	2016-09-27	
Acridine	< 0.10	0.5	0.10	µg/L	2016-09-27	2016-09-27	
Anthracene	< 0.01	1	0.01	µg/L	2016-09-27	2016-09-27	
Benz (a) anthracene	< 0.01	1	0.01	µg/L	2016-09-27	2016-09-27	
Benzo (a) pyrene	< 0.01	0.1	0.01	µg/L	2016-09-27	2016-09-27	
Benzo (b) fluoranthene	< 0.05	N/A	0.05	µg/L	2016-09-27	2016-09-27	
Benzo (g,h,i) perylene	< 0.05	N/A	0.05	µg/L	2016-09-27	2016-09-27	
Benzo (k) fluoranthene	< 0.05	N/A	0.05	µg/L	2016-09-27	2016-09-27	
Chrysene	< 0.05	1	0.05	µg/L	2016-09-27	2016-09-27	
Dibenz (a,h) anthracene	< 0.05	N/A	0.05	µg/L	2016-09-27	2016-09-27	
Fluoranthene	< 0.03	2	0.03	µg/L	2016-09-27	2016-09-27	

REPORTED TO	Morrison Hershfield Limited - Burnaby	**WORK ORDER**	6091660
PROJECT	Whistler Landfill - Spring/Fall	**REPORTED**	2016-09-30

Analyte	Result / *Recovery*	Standard / Guideline	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: MW-2D (6091660-02) [Water] Sampled: 2016-09-21 11:00, Continued							
Polycyclic Aromatic Hydrocarbons (PAH), Continued							
Fluorene	< 0.05	120	0.05	µg/L	2016-09-27	2016-09-27	
Indeno (1,2,3-cd) pyrene	< 0.05	N/A	0.05	µg/L	2016-09-27	2016-09-27	
Naphthalene	< 0.20	10	0.20	µg/L	2016-09-27	2016-09-27	
Phenanthrene	< 0.10	3	0.10	µg/L	2016-09-27	2016-09-27	
Pyrene	< 0.02	0.2	0.02	µg/L	2016-09-27	2016-09-27	
Quinoline	< 0.10	34	0.10	µg/L	2016-09-27	2016-09-27	
Surrogate: Acridine-d9	*79*		*60-130*	%	*2016-09-27*	*2016-09-27*	
Surrogate: Naphthalene-d8	*91*		*60-130*	%	*2016-09-27*	*2016-09-27*	
Surrogate: Perylene-d12	*53*		*60-130*	%	*2016-09-27*	*2016-09-27*	S09
Volatile Organic Compounds (VOC)							
Acetone	< 10.0	N/A	10.0	µg/L	N/A	2016-09-24	
Benzene	< 0.5	1000	0.5	µg/L	N/A	2016-09-24	
Bromodichloromethane	< 1.0	N/A	1.0	µg/L	N/A	2016-09-24	
Bromoform	< 1.0	N/A	1.0	µg/L	N/A	2016-09-24	
Bromomethane	< 2.0	N/A	2.0	µg/L	N/A	2016-09-24	
2-Butanone (MEK)	< 5.0	N/A	5.0	µg/L	N/A	2016-09-24	
Carbon tetrachloride	< 1.0	130	1.0	µg/L	N/A	2016-09-24	
Chlorobenzene	< 1.6	13	1.0	µg/L	N/A	2016-09-24	RA1
Chloroethane	< 2.0	N/A	2.0	µg/L	N/A	2016-09-24	
Chloroform	< 1.0	20	1.0	µg/L	N/A	2016-09-24	
Chloromethane	< 2.0	N/A	2.0	µg/L	N/A	2016-09-24	
Dibromochloromethane	< 1.0	N/A	1.0	µg/L	N/A	2016-09-24	
Dibromomethane	< 1.0	N/A	1.0	µg/L	N/A	2016-09-24	
1,3-Dichlorobenzene	< 1.0	1500	1.0	µg/L	N/A	2016-09-24	
1,4-Dichlorobenzene	< 1.0	260	1.0	µg/L	N/A	2016-09-24	
1,1-Dichloroethane	< 1.0	N/A	1.0	µg/L	N/A	2016-09-24	
1,2-Dichloroethane	< 1.0	1000	1.0	µg/L	N/A	2016-09-24	
1,1-Dichloroethene	< 1.0	N/A	1.0	µg/L	N/A	2016-09-24	
cis-1,2-Dichloroethene	< 1.0	N/A	1.0	µg/L	N/A	2016-09-24	
trans-1,2-Dichloroethene	< 1.0	N/A	1.0	µg/L	N/A	2016-09-24	
1,2-Dichloropropane	< 1.0	N/A	1.0	µg/L	N/A	2016-09-24	
cis-1,3-Dichloropropene	< 1.0	N/A	1.0	µg/L	N/A	2016-09-24	
trans-1,3-Dichloropropene	< 1.0	N/A	1.0	µg/L	N/A	2016-09-24	
Ethylbenzene	< 1.0	2000	1.0	µg/L	N/A	2016-09-24	
Methyl tert-butyl ether	< 1.0	34000	1.0	µg/L	N/A	2016-09-24	
Methylene chloride	< 3.0	980	3.0	µg/L	N/A	2016-09-24	
4-Methyl-2-Pentanone (MIBK)	< 10.0	N/A	10.0	µg/L	N/A	2016-09-24	
Styrene	< 1.0	720	1.0	µg/L	N/A	2016-09-24	
1,1,1,2-Tetrachloroethane	< 1.0	N/A	1.0	µg/L	N/A	2016-09-24	
1,1,2,2-Tetrachloroethane	< 1.0	1100	1.0	µg/L	N/A	2016-09-24	
Tetrachloroethene	< 1.0	N/A	1.0	µg/L	N/A	2016-09-24	
Toluene	< 1.0	390	1.0	µg/L	N/A	2016-09-24	
1,1,1-Trichloroethane	< 1.0	N/A	1.0	µg/L	N/A	2016-09-24	
1,1,2-Trichloroethane	< 1.0	N/A	1.0	µg/L	N/A	2016-09-24	
Trichloroethene	< 1.0	200	1.0	µg/L	N/A	2016-09-24	

REPORTED TO	Morrison Hershfield Limited - Burnaby	**WORK ORDER**	6091660
PROJECT	Whistler Landfill - Spring/Fall	**REPORTED**	2016-09-30

Analyte	Result / *Recovery*	Standard / Guideline	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: MW-2D (6091660-02) [Water] Sampled: 2016-09-21 11:00, Continued							
Volatile Organic Compounds (VOC), Continued							
Trichlorofluoromethane	< 1.0	N/A	1.0	µg/L	N/A	2016-09-24	
Vinyl chloride	< 2.0	N/A	2.0	µg/L	N/A	2016-09-24	
m,p-Xylene	< 1.0	N/A	1.0	µg/L	N/A	2016-09-24	
o-Xylene	< 1.0	N/A	1.0	µg/L	N/A	2016-09-24	
Xylenes (total)	< 2.0	N/A	2.0	µg/L	N/A	2016-09-24	
1,2-Dibromoethane	< 0.3	N/A	0.3	µg/L	N/A	2016-09-24	
1,2-Dichlorobenzene	< 0.5	7	0.5	µg/L	N/A	2016-09-24	
Surrogate: Toluene-d8	*85*		*70-130*	%	*N/A*	*2016-09-24*	
Surrogate: 4-Bromofluorobenzene	*86*		*70-130*	%	*N/A*	*2016-09-24*	
Surrogate: 1,4-Dichlorobenzene-d4	*86*		*70-130*	%	*N/A*	*2016-09-24*	
Sample ID: MW-2S (6091660-03) [Water] Sampled: 2016-09-21 11:00							
Anions							
Bromide	< 0.10	N/A	0.10	mg/L	N/A	2016-09-24	
Chloride	**7.02**	1500	0.10	mg/L	N/A	2016-09-24	
Fluoride	< 0.10	2	0.1	mg/L	N/A	2016-09-24	
Nitrite (as N)	**0.003**	0.2	0.001	mg/L	N/A	2016-09-28	HT1
Nitrate+Nitrite (as N)	**0.015**	400	0.005	mg/L	N/A	2016-09-28	
Sulfate	**64.0**	1000	1.0	mg/L	N/A	2016-09-24	
General Parameters							
pH	**6.60**	N/A	0.01	pH units	N/A	2016-09-23	HT2
Conductivity (EC)	**370**	N/A	2	µS/cm	N/A	2016-09-23	
Ammonia, Total (as N)	**2.97**	N/A	0.02	mg/L	N/A	2016-09-27	
Nitrogen, Total Kjeldahl	**3.55**	N/A	0.05	mg/L	2016-09-28	2016-09-28	
Alkalinity, Total (as CaCO3)	**92**	N/A	2	mg/L	N/A	2016-09-26	
Alkalinity, Phenolphthalein (as CaCO3)	< 1	N/A	2	mg/L	N/A	2016-09-26	
Alkalinity, Bicarbonate (as CaCO3)	**92**	N/A	2	mg/L	N/A	2016-09-26	
Alkalinity, Carbonate (as CaCO3)	< 1	N/A	2	mg/L	N/A	2016-09-26	
Alkalinity, Hydroxide (as CaCO3)	< 1	N/A	2	mg/L	N/A	2016-09-26	
Chemical Oxygen Demand	**20**	N/A	20	mg/L	N/A	2016-09-27	
Solids, Total Suspended	**220**	N/A	2	mg/L	N/A	2016-09-27	
Calculated Parameters							
Hardness, Total (as CaCO3)	**114**	N/A	0.50	mg/L	N/A	N/A	
Nitrate (as N)	**0.012**	400	0.005	mg/L	N/A	N/A	
Nitrogen, Total	**3.57**	N/A	0.500	mg/L	N/A	N/A	
Dissolved Metals							
Aluminum, dissolved	< 0.005	N/A	0.005	mg/L	N/A	2016-09-24	
Antimony, dissolved	< 0.0001	0.2	0.0001	mg/L	N/A	2016-09-24	
Arsenic, dissolved	**0.0077**	0.05	0.0005	mg/L	N/A	2016-09-24	
Barium, dissolved	**0.080**	5	0.005	mg/L	N/A	2016-09-24	
Beryllium, dissolved	< 0.0001	0.053	0.0001	mg/L	N/A	2016-09-24	
Bismuth, dissolved	< 0.0001	N/A	0.0001	mg/L	N/A	2016-09-24	
Boron, dissolved	**0.100**	50	0.004	mg/L	N/A	2016-09-24	

REPORTED TO	Morrison Hershfield Limited - Burnaby	**WORK ORDER**	6091660
PROJECT	Whistler Landfill - Spring/Fall	**REPORTED**	2016-09-30

Analyte	Result / *Recovery*	Standard / Guideline	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: MW-2S (6091660-03) [Water] Sampled: 2016-09-21 11:00, Continued							
Dissolved Metals, Continued							
Cadmium, dissolved	< 0.00001	0.0001	0.00001	mg/L	N/A	2016-09-24	
Calcium, dissolved	**34.4**	N/A	0.2	mg/L	N/A	2016-09-24	
Chromium, dissolved	< 0.0005	N/A	0.0005	mg/L	N/A	2016-09-24	
Cobalt, dissolved	**0.00254**	0.04	0.00005	mg/L	N/A	2016-09-24	
Copper, dissolved	< 0.0002	0.02	0.0002	mg/L	N/A	2016-09-24	
Iron, dissolved	**39.2**	N/A	0.010	mg/L	N/A	2016-09-24	
Lead, dissolved	< 0.0001	0.04	0.0001	mg/L	N/A	2016-09-24	
Lithium, dissolved	< 0.0001	N/A	0.0001	mg/L	N/A	2016-09-24	
Magnesium, dissolved	**6.74**	N/A	0.01	mg/L	N/A	2016-09-24	
Manganese, dissolved	**1.77**	N/A	0.0002	mg/L	N/A	2016-09-24	
Mercury, dissolved	< 0.00002	0.001	0.00002	mg/L	2016-09-27	2016-09-28	
Molybdenum, dissolved	**0.0058**	10	0.0001	mg/L	N/A	2016-09-24	
Nickel, dissolved	**0.0007**	0.25	0.0002	mg/L	N/A	2016-09-24	
Phosphorus, dissolved	**0.03**	N/A	0.02	mg/L	N/A	2016-09-24	
Potassium, dissolved	**7.88**	N/A	0.02	mg/L	N/A	2016-09-24	
Selenium, dissolved	< 0.0005	0.01	0.0005	mg/L	N/A	2016-09-24	
Silicon, dissolved	**9.2**	N/A	0.5	mg/L	N/A	2016-09-24	
Silver, dissolved	< 0.00005	0.0005	0.00005	mg/L	N/A	2016-09-24	
Sodium, dissolved	**8.75**	N/A	0.02	mg/L	N/A	2016-09-24	
Strontium, dissolved	**0.205**	N/A	0.001	mg/L	N/A	2016-09-24	
Sulfur, dissolved	**22**	N/A	1	mg/L	N/A	2016-09-24	
Tellurium, dissolved	< 0.0002	N/A	0.0002	mg/L	N/A	2016-09-24	
Thallium, dissolved	< 0.00002	0.003	0.00002	mg/L	N/A	2016-09-24	
Thorium, dissolved	< 0.0001	N/A	0.0001	mg/L	N/A	2016-09-24	
Tin, dissolved	< 0.0002	N/A	0.0002	mg/L	N/A	2016-09-24	
Titanium, dissolved	< 0.005	1	0.005	mg/L	N/A	2016-09-24	
Uranium, dissolved	**0.00003**	3	0.00002	mg/L	N/A	2016-09-24	
Vanadium, dissolved	< 0.001	N/A	0.001	mg/L	N/A	2016-09-24	
Zinc, dissolved	**0.013**	0.075	0.004	mg/L	N/A	2016-09-24	
Zirconium, dissolved	< 0.0001	N/A	0.0001	mg/L	N/A	2016-09-24	
BCMOE Aggregate Hydrocarbons							
VPHw	< 100	1500	100	µg/L	N/A	N/A	
EPHw10-19	< 250	5000	250	µg/L	2016-09-27	2016-09-27	
EPHw19-32	< 250	N/A	250	µg/L	2016-09-27	2016-09-27	
LEPHw	< 250	500	250	µg/L	N/A	N/A	
HEPHw	< 250	N/A	250	µg/L	N/A	N/A	
VHw (6-10)	< 100	15000	100	µg/L	N/A	2016-09-24	
Surrogate: 2-Methylnonane	*83*		*60-140*	%	*2016-09-27*	*2016-09-27*	
Polycyclic Aromatic Hydrocarbons (PAH)							
Acenaphthene	< 0.05	60	0.05	µg/L	2016-09-27	2016-09-27	
Acenaphthylene	< 0.20	N/A	0.20	µg/L	2016-09-27	2016-09-27	
Acridine	< 0.10	0.5	0.10	µg/L	2016-09-27	2016-09-27	
Anthracene	< 0.01	1	0.01	µg/L	2016-09-27	2016-09-27	
Benz (a) anthracene	< 0.01	1	0.01	µg/L	2016-09-27	2016-09-27	

REPORTED TO	Morrison Hershfield Limited - Burnaby	**WORK ORDER**	6091660
PROJECT	Whistler Landfill - Spring/Fall	**REPORTED**	2016-09-30

Analyte	Result / *Recovery*	Standard / Guideline	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: MW-2S (6091660-03) [Water] Sampled: 2016-09-21 11:00, Continued							
Polycyclic Aromatic Hydrocarbons (PAH), Continued							
Benzo (a) pyrene	< 0.01	0.1	0.01	µg/L	2016-09-27	2016-09-27	
Benzo (b) fluoranthene	< 0.05	N/A	0.05	µg/L	2016-09-27	2016-09-27	
Benzo (g,h,i) perylene	< 0.05	N/A	0.05	µg/L	2016-09-27	2016-09-27	
Benzo (k) fluoranthene	< 0.05	N/A	0.05	µg/L	2016-09-27	2016-09-27	
Chrysene	< 0.05	1	0.05	µg/L	2016-09-27	2016-09-27	
Dibenz (a,h) anthracene	< 0.05	N/A	0.05	µg/L	2016-09-27	2016-09-27	
Fluoranthene	< 0.03	2	0.03	µg/L	2016-09-27	2016-09-27	
Fluorene	< 0.05	120	0.05	µg/L	2016-09-27	2016-09-27	
Indeno (1,2,3-cd) pyrene	< 0.05	N/A	0.05	µg/L	2016-09-27	2016-09-27	
Naphthalene	< 0.20	10	0.20	µg/L	2016-09-27	2016-09-27	
Phenanthrene	< 0.10	3	0.10	µg/L	2016-09-27	2016-09-27	
Pyrene	< 0.02	0.2	0.02	µg/L	2016-09-27	2016-09-27	
Quinoline	< 0.10	34	0.10	µg/L	2016-09-27	2016-09-27	
Surrogate: Acridine-d9	*64*		*60-130*	%	*2016-09-27*	*2016-09-27*	
Surrogate: Naphthalene-d8	*88*		*60-130*	%	*2016-09-27*	*2016-09-27*	
Surrogate: Perylene-d12	*116*		*60-130*	%	*2016-09-27*	*2016-09-27*	
Volatile Organic Compounds (VOC)							
Acetone	< 10.0	N/A	10.0	µg/L	N/A	2016-09-24	
Benzene	< 0.5	1000	0.5	µg/L	N/A	2016-09-24	
Bromodichloromethane	< 1.0	N/A	1.0	µg/L	N/A	2016-09-24	
Bromoform	< 1.0	N/A	1.0	µg/L	N/A	2016-09-24	
Bromomethane	< 2.0	N/A	2.0	µg/L	N/A	2016-09-24	
2-Butanone (MEK)	< 5.0	N/A	5.0	µg/L	N/A	2016-09-24	
Carbon tetrachloride	< 1.0	130	1.0	µg/L	N/A	2016-09-24	
Chlorobenzene	< 1.0	13	1.0	µg/L	N/A	2016-09-24	
Chloroethane	< 2.0	N/A	2.0	µg/L	N/A	2016-09-24	
Chloroform	< 1.0	20	1.0	µg/L	N/A	2016-09-24	
Chloromethane	< 2.0	N/A	2.0	µg/L	N/A	2016-09-24	
Dibromochloromethane	< 1.0	N/A	1.0	µg/L	N/A	2016-09-24	
Dibromomethane	< 1.0	N/A	1.0	µg/L	N/A	2016-09-24	
1,3-Dichlorobenzene	< 1.0	1500	1.0	µg/L	N/A	2016-09-24	
1,4-Dichlorobenzene	< 1.0	260	1.0	µg/L	N/A	2016-09-24	
1,1-Dichloroethane	< 1.0	N/A	1.0	µg/L	N/A	2016-09-24	
1,2-Dichloroethane	< 1.0	1000	1.0	µg/L	N/A	2016-09-24	
1,1-Dichloroethene	< 1.0	N/A	1.0	µg/L	N/A	2016-09-24	
cis-1,2-Dichloroethene	< 1.0	N/A	1.0	µg/L	N/A	2016-09-24	
trans-1,2-Dichloroethene	< 1.0	N/A	1.0	µg/L	N/A	2016-09-24	
1,2-Dichloropropane	< 1.0	N/A	1.0	µg/L	N/A	2016-09-24	
cis-1,3-Dichloropropene	< 1.0	N/A	1.0	µg/L	N/A	2016-09-24	
trans-1,3-Dichloropropene	< 1.0	N/A	1.0	µg/L	N/A	2016-09-24	
Ethylbenzene	< 1.0	2000	1.0	µg/L	N/A	2016-09-24	
Methyl tert-butyl ether	< 1.0	34000	1.0	µg/L	N/A	2016-09-24	
Methylene chloride	< 3.0	980	3.0	µg/L	N/A	2016-09-24	
4-Methyl-2-Pentanone (MIBK)	< 10.0	N/A	10.0	µg/L	N/A	2016-09-24	
Styrene	< 1.0	720	1.0	µg/L	N/A	2016-09-24	

REPORTED TO	Morrison Hershfield Limited - Burnaby	**WORK ORDER**	6091660
PROJECT	Whistler Landfill - Spring/Fall	**REPORTED**	2016-09-30

Analyte	Result / *Recovery*	Standard / Guideline	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: MW-2S (6091660-03) [Water] Sampled: 2016-09-21 11:00, Continued							
Volatile Organic Compounds (VOC), Continued							
1,1,1,2-Tetrachloroethane	< 1.0	N/A	1.0	µg/L	N/A	2016-09-24	
1,1,2,2-Tetrachloroethane	< 1.0	1100	1.0	µg/L	N/A	2016-09-24	
Tetrachloroethene	< 1.0	N/A	1.0	µg/L	N/A	2016-09-24	
Toluene	< 1.0	390	1.0	µg/L	N/A	2016-09-24	
1,1,1-Trichloroethane	< 1.0	N/A	1.0	µg/L	N/A	2016-09-24	
1,1,2-Trichloroethane	< 1.0	N/A	1.0	µg/L	N/A	2016-09-24	
Trichloroethene	< 1.0	200	1.0	µg/L	N/A	2016-09-24	
Trichlorofluoromethane	< 1.0	N/A	1.0	µg/L	N/A	2016-09-24	
Vinyl chloride	< 2.0	N/A	2.0	µg/L	N/A	2016-09-24	
m,p-Xylene	< 1.0	N/A	1.0	µg/L	N/A	2016-09-24	
o-Xylene	< 1.0	N/A	1.0	µg/L	N/A	2016-09-24	
Xylenes (total)	< 2.0	N/A	2.0	µg/L	N/A	2016-09-24	
1,2-Dibromoethane	< 0.3	N/A	0.3	µg/L	N/A	2016-09-24	
1,2-Dichlorobenzene	< 0.5	7	0.5	µg/L	N/A	2016-09-24	
Surrogate: Toluene-d8	*88*		*70-130*	%	*N/A*	*2016-09-24*	
Surrogate: 4-Bromofluorobenzene	*87*		*70-130*	%	*N/A*	*2016-09-24*	
Surrogate: 1,4-Dichlorobenzene-d4	*86*		*70-130*	%	*N/A*	*2016-09-24*	
Sample ID: MW-3 (6091660-04) [Water] Sampled: 2016-09-21 12:30							
Anions							
Bromide	< 0.10	N/A	0.10	mg/L	N/A	2016-09-24	
Chloride	**4.63**	1500	0.10	mg/L	N/A	2016-09-24	
Fluoride	< 0.10	2	0.1	mg/L	N/A	2016-09-24	
Nitrite (as N)	**0.002**	0.2	0.001	mg/L	N/A	2016-09-28	HT1
Nitrate+Nitrite (as N)	**0.007**	400	0.005	mg/L	N/A	2016-09-28	
Sulfate	**20.6**	1000	1.0	mg/L	N/A	2016-09-24	
General Parameters							
pH	**6.40**	N/A	0.01	pH units	N/A	2016-09-23	HT2
Conductivity (EC)	**148**	N/A	2	µS/cm	N/A	2016-09-23	
Ammonia, Total (as N)	**0.392**	N/A	0.02	mg/L	N/A	2016-09-27	
Nitrogen, Total Kjeldahl	**0.40**	N/A	0.05	mg/L	2016-09-28	2016-09-28	
Alkalinity, Total (as CaCO3)	**34**	N/A	2	mg/L	N/A	2016-09-26	
Alkalinity, Phenolphthalein (as CaCO3)	< 1	N/A	2	mg/L	N/A	2016-09-26	
Alkalinity, Bicarbonate (as CaCO3)	**34**	N/A	2	mg/L	N/A	2016-09-26	
Alkalinity, Carbonate (as CaCO3)	< 1	N/A	2	mg/L	N/A	2016-09-26	
Alkalinity, Hydroxide (as CaCO3)	< 1	N/A	2	mg/L	N/A	2016-09-26	
Chemical Oxygen Demand	< 5	N/A	20	mg/L	N/A	2016-09-27	
Solids, Total Suspended	**3**	N/A	2	mg/L	N/A	2016-09-27	
Calculated Parameters							
Hardness, Total (as CaCO3)	**39.0**	N/A	0.50	mg/L	N/A	N/A	
Nitrate (as N)	**0.005**	400	0.005	mg/L	N/A	N/A	
Nitrogen, Total	**0.404**	N/A	0.050	mg/L	N/A	N/A	
Dissolved Metals							

REPORTED TO	Morrison Hershfield Limited - Burnaby	**WORK ORDER**	6091660
PROJECT	Whistler Landfill - Spring/Fall	**REPORTED**	2016-09-30

Analyte	Result / *Recovery*	Standard / Guideline	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: MW-3 (6091660-04) [Water] Sampled: 2016-09-21 12:30, Continued							
Dissolved Metals, Continued							
Aluminum, dissolved	**0.009**	N/A	0.005	mg/L	N/A	2016-09-24	
Antimony, dissolved	< 0.0001	0.2	0.0001	mg/L	N/A	2016-09-24	
Arsenic, dissolved	< 0.0005	0.05	0.0005	mg/L	N/A	2016-09-24	
Barium, dissolved	**0.061**	5	0.005	mg/L	N/A	2016-09-24	
Beryllium, dissolved	< 0.0001	0.053	0.0001	mg/L	N/A	2016-09-24	
Bismuth, dissolved	< 0.0001	N/A	0.0001	mg/L	N/A	2016-09-24	
Boron, dissolved	**0.009**	50	0.004	mg/L	N/A	2016-09-24	
Cadmium, dissolved	**0.00011**	0.0001	0.00001	mg/L	N/A	2016-09-24	
Calcium, dissolved	**11.7**	N/A	0.2	mg/L	N/A	2016-09-24	
Chromium, dissolved	< 0.0005	N/A	0.0005	mg/L	N/A	2016-09-24	
Cobalt, dissolved	**0.00222**	0.04	0.00005	mg/L	N/A	2016-09-24	
Copper, dissolved	**0.0017**	0.02	0.0002	mg/L	N/A	2016-09-24	
Iron, dissolved	**0.159**	N/A	0.010	mg/L	N/A	2016-09-24	
Lead, dissolved	< 0.0001	0.04	0.0001	mg/L	N/A	2016-09-24	
Lithium, dissolved	< 0.0001	N/A	0.0001	mg/L	N/A	2016-09-24	
Magnesium, dissolved	**2.39**	N/A	0.01	mg/L	N/A	2016-09-24	
Manganese, dissolved	**1.24**	N/A	0.0002	mg/L	N/A	2016-09-24	
Mercury, dissolved	< 0.00002	0.001	0.00002	mg/L	2016-09-27	2016-09-28	
Molybdenum, dissolved	**0.0012**	10	0.0001	mg/L	N/A	2016-09-24	
Nickel, dissolved	**0.0004**	0.25	0.0002	mg/L	N/A	2016-09-24	
Phosphorus, dissolved	< 0.02	N/A	0.02	mg/L	N/A	2016-09-24	
Potassium, dissolved	**3.06**	N/A	0.02	mg/L	N/A	2016-09-24	
Selenium, dissolved	< 0.0005	0.01	0.0005	mg/L	N/A	2016-09-24	
Silicon, dissolved	**7.7**	N/A	0.5	mg/L	N/A	2016-09-24	
Silver, dissolved	< 0.00005	0.0005	0.00005	mg/L	N/A	2016-09-24	
Sodium, dissolved	**8.21**	N/A	0.02	mg/L	N/A	2016-09-24	
Strontium, dissolved	**0.122**	N/A	0.001	mg/L	N/A	2016-09-24	
Sulfur, dissolved	**7**	N/A	1	mg/L	N/A	2016-09-24	
Tellurium, dissolved	< 0.0002	N/A	0.0002	mg/L	N/A	2016-09-24	
Thallium, dissolved	**0.00006**	0.003	0.00002	mg/L	N/A	2016-09-24	
Thorium, dissolved	< 0.0001	N/A	0.0001	mg/L	N/A	2016-09-24	
Tin, dissolved	< 0.0002	N/A	0.0002	mg/L	N/A	2016-09-24	
Titanium, dissolved	< 0.005	1	0.005	mg/L	N/A	2016-09-24	
Uranium, dissolved	< 0.00002	3	0.00002	mg/L	N/A	2016-09-24	
Vanadium, dissolved	< 0.001	N/A	0.001	mg/L	N/A	2016-09-24	
Zinc, dissolved	**0.007**	0.075	0.004	mg/L	N/A	2016-09-24	
Zirconium, dissolved	< 0.0001	N/A	0.0001	mg/L	N/A	2016-09-24	
BCMOE Aggregate Hydrocarbons							
VPHw	< 100	1500	100	µg/L	N/A	N/A	
EPHw10-19	< 250	5000	250	µg/L	2016-09-27	2016-09-27	
EPHw19-32	< 250	N/A	250	µg/L	2016-09-27	2016-09-27	
LEPHw	< 250	500	250	µg/L	N/A	N/A	
HEPHw	< 250	N/A	250	µg/L	N/A	N/A	
VHw (6-10)	< 100	15000	100	µg/L	N/A	2016-09-24	
Surrogate: 2-Methylnonane	*79*		*60-140*	%	*2016-09-27*	*2016-09-27*	

REPORTED TO	Morrison Hershfield Limited - Burnaby	**WORK ORDER**	6091660
PROJECT	Whistler Landfill - Spring/Fall	**REPORTED**	2016-09-30

Analyte	Result / *Recovery*	Standard / Guideline	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: MW-3 (6091660-04) [Water] Sampled: 2016-09-21 12:30, Continued							
Polycyclic Aromatic Hydrocarbons (PAH)							
Acenaphthene	< 0.05	60	0.05	µg/L	2016-09-27	2016-09-27	
Acenaphthylene	< 0.20	N/A	0.20	µg/L	2016-09-27	2016-09-27	
Acridine	< 0.10	0.5	0.10	µg/L	2016-09-27	2016-09-27	
Anthracene	< 0.01	1	0.01	µg/L	2016-09-27	2016-09-27	
Benz (a) anthracene	< 0.01	1	0.01	µg/L	2016-09-27	2016-09-27	
Benzo (a) pyrene	< 0.01	0.1	0.01	µg/L	2016-09-27	2016-09-27	
Benzo (b) fluoranthene	< 0.05	N/A	0.05	µg/L	2016-09-27	2016-09-27	
Benzo (g,h,i) perylene	< 0.05	N/A	0.05	µg/L	2016-09-27	2016-09-27	
Benzo (k) fluoranthene	< 0.05	N/A	0.05	µg/L	2016-09-27	2016-09-27	
Chrysene	< 0.05	1	0.05	µg/L	2016-09-27	2016-09-27	
Dibenz (a,h) anthracene	< 0.05	N/A	0.05	µg/L	2016-09-27	2016-09-27	
Fluoranthene	< 0.03	2	0.03	µg/L	2016-09-27	2016-09-27	
Fluorene	< 0.05	120	0.05	µg/L	2016-09-27	2016-09-27	
Indeno (1,2,3-cd) pyrene	< 0.05	N/A	0.05	µg/L	2016-09-27	2016-09-27	
Naphthalene	< 0.20	10	0.20	µg/L	2016-09-27	2016-09-27	
Phenanthrene	< 0.10	3	0.10	µg/L	2016-09-27	2016-09-27	
Pyrene	< 0.02	0.2	0.02	µg/L	2016-09-27	2016-09-27	
Quinoline	< 0.10	34	0.10	µg/L	2016-09-27	2016-09-27	
Surrogate: Acridine-d9	*68*		*60-130*	%	*2016-09-27*	*2016-09-27*	
Surrogate: Naphthalene-d8	*87*		*60-130*	%	*2016-09-27*	*2016-09-27*	
Surrogate: Perylene-d12	*125*		*60-130*	%	*2016-09-27*	*2016-09-27*	
Volatile Organic Compounds (VOC)							
Acetone	< 10.0	N/A	10.0	µg/L	N/A	2016-09-24	
Benzene	< 0.5	1000	0.5	µg/L	N/A	2016-09-24	
Bromodichloromethane	< 1.0	N/A	1.0	µg/L	N/A	2016-09-24	
Bromoform	< 1.0	N/A	1.0	µg/L	N/A	2016-09-24	
Bromomethane	< 2.0	N/A	2.0	µg/L	N/A	2016-09-24	
2-Butanone (MEK)	< 5.0	N/A	5.0	µg/L	N/A	2016-09-24	
Carbon tetrachloride	< 1.0	130	1.0	µg/L	N/A	2016-09-24	
Chlorobenzene	< 1.0	13	1.0	µg/L	N/A	2016-09-24	
Chloroethane	< 2.0	N/A	2.0	µg/L	N/A	2016-09-24	
Chloroform	< 1.0	20	1.0	µg/L	N/A	2016-09-24	
Chloromethane	< 2.0	N/A	2.0	µg/L	N/A	2016-09-24	
Dibromochloromethane	< 1.0	N/A	1.0	µg/L	N/A	2016-09-24	
Dibromomethane	< 1.0	N/A	1.0	µg/L	N/A	2016-09-24	
1,3-Dichlorobenzene	< 1.0	1500	1.0	µg/L	N/A	2016-09-24	
1,4-Dichlorobenzene	< 1.0	260	1.0	µg/L	N/A	2016-09-24	
1,1-Dichloroethane	< 1.0	N/A	1.0	µg/L	N/A	2016-09-24	
1,2-Dichloroethane	< 1.0	1000	1.0	µg/L	N/A	2016-09-24	
1,1-Dichloroethene	< 1.0	N/A	1.0	µg/L	N/A	2016-09-24	
cis-1,2-Dichloroethene	< 1.0	N/A	1.0	µg/L	N/A	2016-09-24	
trans-1,2-Dichloroethene	< 1.0	N/A	1.0	µg/L	N/A	2016-09-24	
1,2-Dichloropropane	< 1.0	N/A	1.0	µg/L	N/A	2016-09-24	
cis-1,3-Dichloropropene	< 1.0	N/A	1.0	µg/L	N/A	2016-09-24	
trans-1,3-Dichloropropene	< 1.0	N/A	1.0	µg/L	N/A	2016-09-24	

REPORTED TO	Morrison Hershfield Limited - Burnaby	**WORK ORDER**	6091660
PROJECT	Whistler Landfill - Spring/Fall	**REPORTED**	2016-09-30

Analyte	Result / *Recovery*	Standard / Guideline	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: MW-3 (6091660-04) [Water] Sampled: 2016-09-21 12:30, Continued							
Volatile Organic Compounds (VOC), Continued							
Ethylbenzene	< 1.0	2000	1.0	µg/L	N/A	2016-09-24	
Methyl tert-butyl ether	< 1.0	34000	1.0	µg/L	N/A	2016-09-24	
Methylene chloride	< 3.0	980	3.0	µg/L	N/A	2016-09-24	
4-Methyl-2-Pentanone (MIBK)	< 10.0	N/A	10.0	µg/L	N/A	2016-09-24	
Styrene	< 1.0	720	1.0	µg/L	N/A	2016-09-24	
1,1,1,2-Tetrachloroethane	< 1.0	N/A	1.0	µg/L	N/A	2016-09-24	
1,1,2,2-Tetrachloroethane	< 1.0	1100	1.0	µg/L	N/A	2016-09-24	
Tetrachloroethene	< 1.0	N/A	1.0	µg/L	N/A	2016-09-24	
Toluene	< 1.0	390	1.0	µg/L	N/A	2016-09-24	
1,1,1-Trichloroethane	< 1.0	N/A	1.0	µg/L	N/A	2016-09-24	
1,1,2-Trichloroethane	< 1.0	N/A	1.0	µg/L	N/A	2016-09-24	
Trichloroethene	< 1.0	200	1.0	µg/L	N/A	2016-09-24	
Trichlorofluoromethane	< 1.0	N/A	1.0	µg/L	N/A	2016-09-24	
Vinyl chloride	< 2.0	N/A	2.0	µg/L	N/A	2016-09-24	
m,p-Xylene	< 1.0	N/A	1.0	µg/L	N/A	2016-09-24	
o-Xylene	< 1.0	N/A	1.0	µg/L	N/A	2016-09-24	
Xylenes (total)	< 2.0	N/A	2.0	µg/L	N/A	2016-09-24	
1,2-Dibromoethane	< 0.3	N/A	0.3	µg/L	N/A	2016-09-24	
1,2-Dichlorobenzene	< 0.5	7	0.5	µg/L	N/A	2016-09-24	
Surrogate: Toluene-d8	*88*		*70-130*	%	*N/A*	*2016-09-24*	
Surrogate: 4-Bromofluorobenzene	*88*		*70-130*	%	*N/A*	*2016-09-24*	
Surrogate: 1,4-Dichlorobenzene-d4	*88*		*70-130*	%	*N/A*	*2016-09-24*	
Sample ID: SFC-2 (6091660-05) [Water] Sampled: 2016-09-21 13:30							
Anions							
Bromide	< 0.10	N/A	0.10	mg/L	N/A	2016-09-24	
Chloride	**11.1**	1500	0.10	mg/L	N/A	2016-09-24	
Fluoride	< 0.10	2	0.1	mg/L	N/A	2016-09-24	
Nitrite (as N)	**0.003**	0.2	0.001	mg/L	N/A	2016-09-28	HT1
Nitrate+Nitrite (as N)	**0.098**	400	0.005	mg/L	N/A	2016-09-28	
Sulfate	**54.9**	1000	1.0	mg/L	N/A	2016-09-24	
General Parameters							
pH	**6.79**	N/A	0.01	pH units	N/A	2016-09-23	HT2
Conductivity (EC)	**312**	N/A	2	µS/cm	N/A	2016-09-23	
Ammonia, Total (as N)	**0.570**	N/A	0.02	mg/L	N/A	2016-09-27	
Nitrogen, Total Kjeldahl	**0.58**	N/A	0.05	mg/L	2016-09-28	2016-09-28	
Alkalinity, Total (as CaCO3)	**62**	N/A	2	mg/L	N/A	2016-09-26	
Alkalinity, Phenolphthalein (as CaCO3)	< 1	N/A	2	mg/L	N/A	2016-09-26	
Alkalinity, Bicarbonate (as CaCO3)	**62**	N/A	2	mg/L	N/A	2016-09-26	
Alkalinity, Carbonate (as CaCO3)	< 1	N/A	2	mg/L	N/A	2016-09-26	
Alkalinity, Hydroxide (as CaCO3)	< 1	N/A	2	mg/L	N/A	2016-09-26	
Chemical Oxygen Demand	< 5	N/A	20	mg/L	N/A	2016-09-27	
Solids, Total Suspended	< 2	N/A	2	mg/L	N/A	2016-09-27	

REPORTED TO	Morrison Hershfield Limited - Burnaby	**WORK ORDER**	6091660
PROJECT	Whistler Landfill - Spring/Fall	**REPORTED**	2016-09-30

Analyte	Result / *Recovery*	Standard / Guideline	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: SFC-2 (6091660-05) [Water] Sampled: 2016-09-21 13:30, Continued							
Calculated Parameters							
Hardness, Total (as CaCO3)	**107**	N/A	0.50	mg/L	N/A	N/A	
Nitrate (as N)	**0.095**	400	0.005	mg/L	N/A	N/A	
Nitrogen, Total	**0.677**	N/A	0.050	mg/L	N/A	N/A	
Total Metals							
Aluminum, total	**0.057**	N/A	0.005	mg/L	2016-09-23	2016-09-24	
Antimony, total	< 0.0001	0.2	0.0001	mg/L	2016-09-23	2016-09-24	
Arsenic, total	< 0.0005	0.05	0.0005	mg/L	2016-09-23	2016-09-24	
Barium, total	**0.061**	5	0.005	mg/L	2016-09-23	2016-09-24	
Beryllium, total	< 0.0001	0.053	0.0001	mg/L	2016-09-23	2016-09-24	
Bismuth, total	< 0.0001	N/A	0.0001	mg/L	2016-09-23	2016-09-24	
Boron, total	**0.042**	50	0.004	mg/L	2016-09-23	2016-09-24	
Cadmium, total	**0.00005**	0.0001	0.00001	mg/L	2016-09-23	2016-09-24	
Calcium, total	**35.3**	N/A	0.2	mg/L	2016-09-23	2016-09-24	
Chromium, total	< 0.0005	N/A	0.0005	mg/L	2016-09-23	2016-09-24	
Cobalt, total	**0.00855**	0.04	0.00005	mg/L	2016-09-23	2016-09-24	
Copper, total	**0.0015**	0.02	0.0002	mg/L	2016-09-23	2016-09-24	
Iron, total	**3.96**	N/A	0.01	mg/L	2016-09-23	2016-09-24	
Lead, total	< 0.0001	0.04	0.0001	mg/L	2016-09-23	2016-09-24	
Lithium, total	**0.0002**	N/A	0.0001	mg/L	2016-09-23	2016-09-24	
Magnesium, total	**4.51**	N/A	0.01	mg/L	2016-09-23	2016-09-24	
Manganese, total	**2.41**	N/A	0.0002	mg/L	2016-09-23	2016-09-24	
Mercury, total	< 0.00002	0.001	0.00002	mg/L	2016-09-27	2016-09-28	
Molybdenum, total	**0.0021**	10	0.0001	mg/L	2016-09-23	2016-09-24	
Nickel, total	**0.0016**	0.25	0.0002	mg/L	2016-09-23	2016-09-24	
Phosphorus, total	< 0.02	N/A	0.02	mg/L	2016-09-23	2016-09-24	
Potassium, total	**3.54**	N/A	0.02	mg/L	2016-09-23	2016-09-24	
Selenium, total	< 0.0005	0.01	0.0005	mg/L	2016-09-23	2016-09-24	
Silicon, total	**5.8**	N/A	0.5	mg/L	2016-09-23	2016-09-24	
Silver, total	< 0.00005	0.0005	0.00005	mg/L	2016-09-23	2016-09-24	
Sodium, total	**12.2**	N/A	0.02	mg/L	2016-09-23	2016-09-24	
Strontium, total	**0.261**	N/A	0.001	mg/L	2016-09-23	2016-09-24	
Sulfur, total	**23**	N/A	1	mg/L	2016-09-23	2016-09-24	
Tellurium, total	< 0.0002	N/A	0.0002	mg/L	2016-09-23	2016-09-24	
Thallium, total	**0.00002**	0.003	0.00002	mg/L	2016-09-23	2016-09-24	
Thorium, total	< 0.0001	N/A	0.0001	mg/L	2016-09-23	2016-09-24	
Tin, total	< 0.0002	N/A	0.0002	mg/L	2016-09-23	2016-09-24	
Titanium, total	< 0.005	1	0.005	mg/L	2016-09-23	2016-09-24	
Uranium, total	< 0.00002	3	0.00002	mg/L	2016-09-23	2016-09-24	
Vanadium, total	< 0.001	N/A	0.001	mg/L	2016-09-23	2016-09-24	
Zinc, total	**0.013**	0.075	0.004	mg/L	2016-09-23	2016-09-24	
Zirconium, total	< 0.0001	N/A	0.0001	mg/L	2016-09-23	2016-09-24	
Sample ID: SFC-11 (6091660-06) [Water] Sampled: 2016-09-21 14:30							
Anions							

REPORTED TO	Morrison Hershfield Limited - Burnaby	**WORK ORDER**	6091660
PROJECT	Whistler Landfill - Spring/Fall	**REPORTED**	2016-09-30

Analyte	Result / *Recovery*	Standard / Guideline	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: SFC-11 (6091660-06) [Water] Sampled: 2016-09-21 14:30, Continued							
Anions, Continued							
Bromide	< 0.10	N/A	0.10	mg/L	N/A	2016-09-24	
Chloride	**11.5**	1500	0.10	mg/L	N/A	2016-09-24	
Fluoride	< 0.10	2	0.1	mg/L	N/A	2016-09-24	
Nitrite (as N)	< 0.001	0.2	0.001	mg/L	N/A	2016-09-28	HT1
Nitrate+Nitrite (as N)	**0.232**	400	0.005	mg/L	N/A	2016-09-28	
Sulfate	**14.4**	1000	1.0	mg/L	N/A	2016-09-24	
General Parameters							
pH	**6.84**	N/A	0.01	pH units	N/A	2016-09-23	HT2
Conductivity (EC)	**145**	N/A	2	µS/cm	N/A	2016-09-23	
Ammonia, Total (as N)	**0.054**	N/A	0.02	mg/L	N/A	2016-09-27	
Nitrogen, Total Kjeldahl	**0.07**	N/A	0.05	mg/L	2016-09-28	2016-09-28	
Alkalinity, Total (as CaCO3)	**34**	N/A	2	mg/L	N/A	2016-09-26	
Alkalinity, Phenolphthalein (as CaCO3)	< 1	N/A	2	mg/L	N/A	2016-09-26	
Alkalinity, Bicarbonate (as CaCO3)	**34**	N/A	2	mg/L	N/A	2016-09-26	
Alkalinity, Carbonate (as CaCO3)	< 1	N/A	2	mg/L	N/A	2016-09-26	
Alkalinity, Hydroxide (as CaCO3)	< 1	N/A	2	mg/L	N/A	2016-09-26	
Chemical Oxygen Demand	< 5	N/A	20	mg/L	N/A	2016-09-27	
Solids, Total Suspended	< 2	N/A	2	mg/L	N/A	2016-09-27	
Calculated Parameters							
Hardness, Total (as CaCO3)	**48.6**	N/A	0.50	mg/L	N/A	N/A	
Nitrate (as N)	**0.232**	400	0.005	mg/L	N/A	N/A	
Nitrogen, Total	**0.304**	N/A	0.050	mg/L	N/A	N/A	
Total Metals							
Aluminum, total	**0.019**	N/A	0.005	mg/L	2016-09-23	2016-09-24	
Antimony, total	< 0.0001	0.2	0.0001	mg/L	2016-09-23	2016-09-24	
Arsenic, total	< 0.0005	0.05	0.0005	mg/L	2016-09-23	2016-09-24	
Barium, total	**0.011**	5	0.005	mg/L	2016-09-23	2016-09-24	
Beryllium, total	< 0.0001	0.053	0.0001	mg/L	2016-09-23	2016-09-24	
Bismuth, total	< 0.0001	N/A	0.0001	mg/L	2016-09-23	2016-09-24	
Boron, total	**0.012**	50	0.004	mg/L	2016-09-23	2016-09-24	
Cadmium, total	**0.00002**	0.0001	0.00001	mg/L	2016-09-23	2016-09-24	
Calcium, total	**15.4**	N/A	0.2	mg/L	2016-09-23	2016-09-24	
Chromium, total	< 0.0005	N/A	0.0005	mg/L	2016-09-23	2016-09-24	
Cobalt, total	< 0.00005	0.04	0.00005	mg/L	2016-09-23	2016-09-24	
Copper, total	**0.0004**	0.02	0.0002	mg/L	2016-09-23	2016-09-24	
Iron, total	**0.04**	N/A	0.01	mg/L	2016-09-23	2016-09-24	
Lead, total	< 0.0001	0.04	0.0001	mg/L	2016-09-23	2016-09-24	
Lithium, total	**0.0007**	N/A	0.0001	mg/L	2016-09-23	2016-09-24	
Magnesium, total	**2.45**	N/A	0.01	mg/L	2016-09-23	2016-09-24	
Manganese, total	**0.0084**	N/A	0.0002	mg/L	2016-09-23	2016-09-24	
Mercury, total	< 0.00002	0.001	0.00002	mg/L	2016-09-27	2016-09-28	
Molybdenum, total	**0.0002**	10	0.0001	mg/L	2016-09-23	2016-09-24	
Nickel, total	< 0.0002	0.25	0.0002	mg/L	2016-09-23	2016-09-24	
Phosphorus, total	< 0.02	N/A	0.02	mg/L	2016-09-23	2016-09-24	

REPORTED TO	Morrison Hershfield Limited - Burnaby	**WORK ORDER**	6091660
PROJECT	Whistler Landfill - Spring/Fall	**REPORTED**	2016-09-30

Analyte	Result / *Recovery*	Standard / Guideline	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: SFC-11 (6091660-06) [Water] Sampled: 2016-09-21 14:30, Continued							
Total Metals, Continued							
Potassium, total	**0.84**	N/A	0.02	mg/L	2016-09-23	2016-09-24	
Selenium, total	< 0.0005	0.01	0.0005	mg/L	2016-09-23	2016-09-24	
Silicon, total	**12.7**	N/A	0.5	mg/L	2016-09-23	2016-09-24	
Silver, total	< 0.00005	0.0005	0.00005	mg/L	2016-09-23	2016-09-24	
Sodium, total	**8.40**	N/A	0.02	mg/L	2016-09-23	2016-09-24	
Strontium, total	**0.218**	N/A	0.001	mg/L	2016-09-23	2016-09-24	
Sulfur, total	**5**	N/A	1	mg/L	2016-09-23	2016-09-24	
Tellurium, total	< 0.0002	N/A	0.0002	mg/L	2016-09-23	2016-09-24	
Thallium, total	< 0.00002	0.003	0.00002	mg/L	2016-09-23	2016-09-24	
Thorium, total	< 0.0001	N/A	0.0001	mg/L	2016-09-23	2016-09-24	
Tin, total	< 0.0002	N/A	0.0002	mg/L	2016-09-23	2016-09-24	
Titanium, total	< 0.005	1	0.005	mg/L	2016-09-23	2016-09-24	
Uranium, total	< 0.00002	3	0.00002	mg/L	2016-09-23	2016-09-24	
Vanadium, total	< 0.001	N/A	0.001	mg/L	2016-09-23	2016-09-24	
Zinc, total	< 0.004	0.075	0.004	mg/L	2016-09-23	2016-09-24	
Zirconium, total	< 0.0001	N/A	0.0001	mg/L	2016-09-23	2016-09-24	
Sample ID: SFC-3 (6091660-07) [Water] Sampled: 2016-09-21 14:30							
Anions							
Bromide	< 0.10	N/A	0.10	mg/L	N/A	2016-09-24	
Chloride	**8.82**	1500	0.10	mg/L	N/A	2016-09-24	
Fluoride	< 0.10	2	0.1	mg/L	N/A	2016-09-24	
Nitrite (as N)	**0.003**	0.2	0.001	mg/L	N/A	2016-09-28	HT1
Nitrate+Nitrite (as N)	**0.038**	400	0.005	mg/L	N/A	2016-09-28	
Sulfate	**13.0**	1000	1.0	mg/L	N/A	2016-09-24	
General Parameters							
pH	**6.82**	N/A	0.01	pH units	N/A	2016-09-23	HT2
Conductivity (EC)	**126**	N/A	2	µS/cm	N/A	2016-09-23	
Ammonia, Total (as N)	**0.027**	N/A	0.02	mg/L	N/A	2016-09-27	
Nitrogen, Total Kjeldahl	**0.08**	N/A	0.05	mg/L	2016-09-28	2016-09-28	
Alkalinity, Total (as CaCO3)	**26**	N/A	2	mg/L	N/A	2016-09-26	
Alkalinity, Phenolphthalein (as CaCO3)	< 1	N/A	2	mg/L	N/A	2016-09-26	
Alkalinity, Bicarbonate (as CaCO3)	**26**	N/A	2	mg/L	N/A	2016-09-26	
Alkalinity, Carbonate (as CaCO3)	< 1	N/A	2	mg/L	N/A	2016-09-26	
Alkalinity, Hydroxide (as CaCO3)	< 1	N/A	2	mg/L	N/A	2016-09-26	
Chemical Oxygen Demand	< 5	N/A	20	mg/L	N/A	2016-09-27	
Solids, Total Suspended	< 2	N/A	2	mg/L	N/A	2016-09-27	
Calculated Parameters							
Hardness, Total (as CaCO3)	**37.2**	N/A	0.50	mg/L	N/A	N/A	
Nitrate (as N)	**0.035**	400	0.005	mg/L	N/A	N/A	
Nitrogen, Total	**0.114**	N/A	0.050	mg/L	N/A	N/A	
Total Metals							
Aluminum, total	**0.030**	N/A	0.005	mg/L	2016-09-23	2016-09-24	

REPORTED TO	Morrison Hershfield Limited - Burnaby	**WORK ORDER**	6091660
PROJECT	Whistler Landfill - Spring/Fall	**REPORTED**	2016-09-30

Analyte	Result / *Recovery*	Standard / Guideline	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: SFC-3 (6091660-07) [Water] Sampled: 2016-09-21 14:30, Continued							
Total Metals, Continued							
Antimony, total	< 0.0001	0.2	0.0001	mg/L	2016-09-23	2016-09-24	
Arsenic, total	< 0.0005	0.05	0.0005	mg/L	2016-09-23	2016-09-24	
Barium, total	**0.016**	5	0.005	mg/L	2016-09-23	2016-09-24	
Beryllium, total	< 0.0001	0.053	0.0001	mg/L	2016-09-23	2016-09-24	
Bismuth, total	< 0.0001	N/A	0.0001	mg/L	2016-09-23	2016-09-24	
Boron, total	**0.008**	50	0.004	mg/L	2016-09-23	2016-09-24	
Cadmium, total	< 0.00001	0.0001	0.00001	mg/L	2016-09-23	2016-09-24	
Calcium, total	**12.0**	N/A	0.2	mg/L	2016-09-23	2016-09-24	
Chromium, total	< 0.0005	N/A	0.0005	mg/L	2016-09-23	2016-09-24	
Cobalt, total	**0.00084**	0.04	0.00005	mg/L	2016-09-23	2016-09-24	
Copper, total	**0.0020**	0.02	0.0002	mg/L	2016-09-23	2016-09-24	
Iron, total	**1.25**	N/A	0.01	mg/L	2016-09-23	2016-09-24	
Lead, total	< 0.0001	0.04	0.0001	mg/L	2016-09-23	2016-09-24	
Lithium, total	**0.0002**	N/A	0.0001	mg/L	2016-09-23	2016-09-24	
Magnesium, total	**1.77**	N/A	0.01	mg/L	2016-09-23	2016-09-24	
Manganese, total	**0.113**	N/A	0.0002	mg/L	2016-09-23	2016-09-24	
Mercury, total	< 0.00002	0.001	0.00002	mg/L	2016-09-27	2016-09-28	
Molybdenum, total	**0.0008**	10	0.0001	mg/L	2016-09-23	2016-09-24	
Nickel, total	< 0.0002	0.25	0.0002	mg/L	2016-09-23	2016-09-24	
Phosphorus, total	< 0.02	N/A	0.02	mg/L	2016-09-23	2016-09-24	
Potassium, total	**1.68**	N/A	0.02	mg/L	2016-09-23	2016-09-24	
Selenium, total	< 0.0005	0.01	0.0005	mg/L	2016-09-23	2016-09-24	
Silicon, total	**7.2**	N/A	0.5	mg/L	2016-09-23	2016-09-24	
Silver, total	< 0.00005	0.0005	0.00005	mg/L	2016-09-23	2016-09-24	
Sodium, total	**8.09**	N/A	0.02	mg/L	2016-09-23	2016-09-24	
Strontium, total	**0.128**	N/A	0.001	mg/L	2016-09-23	2016-09-24	
Sulfur, total	**5**	N/A	1	mg/L	2016-09-23	2016-09-24	
Tellurium, total	< 0.0002	N/A	0.0002	mg/L	2016-09-23	2016-09-24	
Thallium, total	< 0.00002	0.003	0.00002	mg/L	2016-09-23	2016-09-24	
Thorium, total	< 0.0001	N/A	0.0001	mg/L	2016-09-23	2016-09-24	
Tin, total	< 0.0002	N/A	0.0002	mg/L	2016-09-23	2016-09-24	
Titanium, total	< 0.005	1	0.005	mg/L	2016-09-23	2016-09-24	
Uranium, total	< 0.00002	3	0.00002	mg/L	2016-09-23	2016-09-24	
Vanadium, total	< 0.001	N/A	0.001	mg/L	2016-09-23	2016-09-24	
Zinc, total	**0.004**	0.075	0.004	mg/L	2016-09-23	2016-09-24	
Zirconium, total	< 0.0001	N/A	0.0001	mg/L	2016-09-23	2016-09-24	
Sample ID: SFC-4B (6091660-08) [Water] Sampled: 2016-09-21 13:00							
Anions							
Bromide	< 0.10	N/A	0.10	mg/L	N/A	2016-09-24	
Chloride	**32.2**	1500	0.10	mg/L	N/A	2016-09-24	
Fluoride	< 0.10	2	0.1	mg/L	N/A	2016-09-24	
Nitrite (as N)	**0.001**	0.2	0.001	mg/L	N/A	2016-09-28	HT1
Nitrate+Nitrite (as N)	**0.162**	400	0.005	mg/L	N/A	2016-09-28	

REPORTED TO	Morrison Hershfield Limited - Burnaby	**WORK ORDER**	6091660
PROJECT	Whistler Landfill - Spring/Fall	**REPORTED**	2016-09-30

Analyte	Result / *Recovery*	Standard / Guideline	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: SFC-4B (6091660-08) [Water] Sampled: 2016-09-21 13:00, Continued							
Anions, Continued							
Sulfate	**34.4**	1000	1.0	mg/L	N/A	2016-09-24	
General Parameters							
pH	**7.31**	N/A	0.01	pH units	N/A	2016-09-23	HT2
Conductivity (EC)	**264**	N/A	2	µS/cm	N/A	2016-09-23	
Ammonia, Total (as N)	< 0.020	N/A	0.02	mg/L	N/A	2016-09-27	
Nitrogen, Total Kjeldahl	**0.07**	N/A	0.05	mg/L	2016-09-28	2016-09-28	
Alkalinity, Total (as CaCO3)	**41**	N/A	2	mg/L	N/A	2016-09-26	
Alkalinity, Phenolphthalein (as CaCO3)	< 1	N/A	2	mg/L	N/A	2016-09-26	
Alkalinity, Bicarbonate (as CaCO3)	**41**	N/A	2	mg/L	N/A	2016-09-26	
Alkalinity, Carbonate (as CaCO3)	< 1	N/A	2	mg/L	N/A	2016-09-26	
Alkalinity, Hydroxide (as CaCO3)	< 1	N/A	2	mg/L	N/A	2016-09-26	
Chemical Oxygen Demand	< 5	N/A	20	mg/L	N/A	2016-09-27	
Solids, Total Suspended	< 2	N/A	2	mg/L	N/A	2016-09-27	
Calculated Parameters							
Hardness, Total (as CaCO3)	**86.9**	N/A	0.50	mg/L	N/A	N/A	
Nitrate (as N)	**0.160**	400	0.005	mg/L	N/A	N/A	
Nitrogen, Total	**0.232**	N/A	0.050	mg/L	N/A	N/A	
Total Metals							
Aluminum, total	**0.011**	N/A	0.005	mg/L	2016-09-23	2016-09-24	
Antimony, total	< 0.0001	0.2	0.0001	mg/L	2016-09-23	2016-09-24	
Arsenic, total	< 0.0005	0.05	0.0005	mg/L	2016-09-23	2016-09-24	
Barium, total	**0.017**	5	0.005	mg/L	2016-09-23	2016-09-24	
Beryllium, total	< 0.0001	0.053	0.0001	mg/L	2016-09-23	2016-09-24	
Bismuth, total	< 0.0001	N/A	0.0001	mg/L	2016-09-23	2016-09-24	
Boron, total	**0.031**	50	0.004	mg/L	2016-09-23	2016-09-24	
Cadmium, total	< 0.00001	0.0001	0.00001	mg/L	2016-09-23	2016-09-24	
Calcium, total	**29.4**	N/A	0.2	mg/L	2016-09-23	2016-09-24	
Chromium, total	< 0.0005	N/A	0.0005	mg/L	2016-09-23	2016-09-24	
Cobalt, total	**0.00019**	0.04	0.00005	mg/L	2016-09-23	2016-09-24	
Copper, total	**0.0009**	0.02	0.0002	mg/L	2016-09-23	2016-09-24	
Iron, total	**0.07**	N/A	0.01	mg/L	2016-09-23	2016-09-24	
Lead, total	< 0.0001	0.04	0.0001	mg/L	2016-09-23	2016-09-24	
Lithium, total	**0.0005**	N/A	0.0001	mg/L	2016-09-23	2016-09-24	
Magnesium, total	**3.26**	N/A	0.01	mg/L	2016-09-23	2016-09-24	
Manganese, total	**0.116**	N/A	0.0002	mg/L	2016-09-23	2016-09-24	
Mercury, total	< 0.00002	0.001	0.00002	mg/L	2016-09-27	2016-09-28	
Molybdenum, total	**0.0004**	10	0.0001	mg/L	2016-09-23	2016-09-24	
Nickel, total	< 0.0002	0.25	0.0002	mg/L	2016-09-23	2016-09-24	
Phosphorus, total	< 0.02	N/A	0.02	mg/L	2016-09-23	2016-09-24	
Potassium, total	**1.98**	N/A	0.02	mg/L	2016-09-23	2016-09-24	
Selenium, total	< 0.0005	0.01	0.0005	mg/L	2016-09-23	2016-09-24	
Silicon, total	**8.4**	N/A	0.5	mg/L	2016-09-23	2016-09-24	
Silver, total	< 0.00005	0.0005	0.00005	mg/L	2016-09-23	2016-09-24	
Sodium, total	**14.8**	N/A	0.02	mg/L	2016-09-23	2016-09-24	

REPORTED TO	Morrison Hershfield Limited - Burnaby	**WORK ORDER**	6091660
PROJECT	Whistler Landfill - Spring/Fall	**REPORTED**	2016-09-30

Analyte	Result / *Recovery*	Standard / Guideline	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: SFC-4B (6091660-08) [Water] Sampled: 2016-09-21 13:00, Continued							
Total Metals, Continued							
Strontium, total	**0.367**	N/A	0.001	mg/L	2016-09-23	2016-09-24	
Sulfur, total	**12**	N/A	1	mg/L	2016-09-23	2016-09-24	
Tellurium, total	< 0.0002	N/A	0.0002	mg/L	2016-09-23	2016-09-24	
Thallium, total	< 0.00002	0.003	0.00002	mg/L	2016-09-23	2016-09-24	
Thorium, total	< 0.0001	N/A	0.0001	mg/L	2016-09-23	2016-09-24	
Tin, total	< 0.0002	N/A	0.0002	mg/L	2016-09-23	2016-09-24	
Titanium, total	< 0.005	1	0.005	mg/L	2016-09-23	2016-09-24	
Uranium, total	< 0.00002	3	0.00002	mg/L	2016-09-23	2016-09-24	
Vanadium, total	< 0.001	N/A	0.001	mg/L	2016-09-23	2016-09-24	
Zinc, total	< 0.004	0.075	0.004	mg/L	2016-09-23	2016-09-24	
Zirconium, total	< 0.0001	N/A	0.0001	mg/L	2016-09-23	2016-09-24	
Sample ID: Groundwater Interceptor (6091660-09) [Water] Sampled: 2016-09-21 13:00							
Anions							
Bromide	< 0.10	N/A	0.10	mg/L	N/A	2016-09-24	
Chloride	**70.3**	1500	0.10	mg/L	N/A	2016-09-24	
Fluoride	< 0.10	2	0.1	mg/L	N/A	2016-09-24	
Nitrite (as N)	**0.005**	0.2	0.001	mg/L	N/A	2016-09-28	HT1
Nitrate+Nitrite (as N)	**0.043**	400	0.005	mg/L	N/A	2016-09-28	
Sulfate	**104**	1000	1.0	mg/L	N/A	2016-09-24	
General Parameters							
pH	**6.35**	N/A	0.01	pH units	N/A	2016-09-23	HT2
Conductivity (EC)	**712**	N/A	2	µS/cm	N/A	2016-09-23	
Ammonia, Total (as N)	**1.74**	N/A	0.02	mg/L	N/A	2016-09-27	
Nitrogen, Total Kjeldahl	**1.75**	N/A	0.05	mg/L	2016-09-28	2016-09-28	
Alkalinity, Total (as CaCO3)	**158**	N/A	2	mg/L	N/A	2016-09-27	
Alkalinity, Phenolphthalein (as CaCO3)	< 1	N/A	2	mg/L	N/A	2016-09-27	
Alkalinity, Bicarbonate (as CaCO3)	**158**	N/A	2	mg/L	N/A	2016-09-27	
Alkalinity, Carbonate (as CaCO3)	< 1	N/A	2	mg/L	N/A	2016-09-27	
Alkalinity, Hydroxide (as CaCO3)	< 1	N/A	2	mg/L	N/A	2016-09-27	
Chemical Oxygen Demand	**18**	N/A	20	mg/L	N/A	2016-09-27	
Solids, Total Suspended	**14**	N/A	2	mg/L	N/A	2016-09-27	
Calculated Parameters							
Hardness, Total (as CaCO3)	**212**	N/A	0.50	mg/L	N/A	N/A	
Nitrate (as N)	**0.038**	400	0.005	mg/L	N/A	N/A	
Nitrogen, Total	**1.80**	N/A	0.050	mg/L	N/A	N/A	
Dissolved Metals							
Aluminum, dissolved	**0.042**	N/A	0.005	mg/L	N/A	2016-09-24	
Antimony, dissolved	< 0.0001	0.2	0.0001	mg/L	N/A	2016-09-24	
Arsenic, dissolved	< 0.0005	0.05	0.0005	mg/L	N/A	2016-09-24	
Barium, dissolved	**0.073**	5	0.005	mg/L	N/A	2016-09-24	
Beryllium, dissolved	< 0.0001	0.053	0.0001	mg/L	N/A	2016-09-24	
Bismuth, dissolved	< 0.0001	N/A	0.0001	mg/L	N/A	2016-09-24	

REPORTED TO	Morrison Hershfield Limited - Burnaby	**WORK ORDER**	6091660
PROJECT	Whistler Landfill - Spring/Fall	**REPORTED**	2016-09-30

Analyte	Result / *Recovery*	Standard / Guideline	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: Groundwater Interceptor (6091660-09) [Water] Sampled: 2016-09-21 13:00, Continued							
Dissolved Metals, Continued							
Boron, dissolved	**0.140**	50	0.004	mg/L	N/A	2016-09-24	
Cadmium, dissolved	< 0.00001	0.0001	0.00001	mg/L	N/A	2016-09-24	
Calcium, dissolved	**70.9**	N/A	0.2	mg/L	N/A	2016-09-24	
Chromium, dissolved	< 0.0005	N/A	0.0005	mg/L	N/A	2016-09-24	
Cobalt, dissolved	**0.00118**	0.04	0.00005	mg/L	N/A	2016-09-24	
Copper, dissolved	< 0.0002	0.02	0.0002	mg/L	N/A	2016-09-24	
Iron, dissolved	**26.6**	N/A	0.010	mg/L	N/A	2016-09-24	
Lead, dissolved	< 0.0001	0.04	0.0001	mg/L	N/A	2016-09-24	
Lithium, dissolved	**0.0002**	N/A	0.0001	mg/L	N/A	2016-09-24	
Magnesium, dissolved	**8.53**	N/A	0.01	mg/L	N/A	2016-09-24	
Manganese, dissolved	**2.75**	N/A	0.0002	mg/L	N/A	2016-09-24	
Mercury, dissolved	< 0.00002	0.001	0.00002	mg/L	2016-09-27	2016-09-28	
Molybdenum, dissolved	**0.0006**	10	0.0001	mg/L	N/A	2016-09-24	
Nickel, dissolved	**0.0005**	0.25	0.0002	mg/L	N/A	2016-09-24	
Phosphorus, dissolved	**0.02**	N/A	0.02	mg/L	N/A	2016-09-24	
Potassium, dissolved	**7.03**	N/A	0.02	mg/L	N/A	2016-09-24	
Selenium, dissolved	< 0.0005	0.01	0.0005	mg/L	N/A	2016-09-24	
Silicon, dissolved	**10.1**	N/A	0.5	mg/L	N/A	2016-09-24	
Silver, dissolved	< 0.00005	0.0005	0.00005	mg/L	N/A	2016-09-24	
Sodium, dissolved	**45.6**	N/A	0.02	mg/L	N/A	2016-09-24	
Strontium, dissolved	**0.539**	N/A	0.001	mg/L	N/A	2016-09-24	
Sulfur, dissolved	**34**	N/A	1	mg/L	N/A	2016-09-24	
Tellurium, dissolved	< 0.0002	N/A	0.0002	mg/L	N/A	2016-09-24	
Thallium, dissolved	< 0.00002	0.003	0.00002	mg/L	N/A	2016-09-24	
Thorium, dissolved	< 0.0001	N/A	0.0001	mg/L	N/A	2016-09-24	
Tin, dissolved	< 0.0002	N/A	0.0002	mg/L	N/A	2016-09-24	
Titanium, dissolved	< 0.005	1	0.005	mg/L	N/A	2016-09-24	
Uranium, dissolved	< 0.00002	3	0.00002	mg/L	N/A	2016-09-24	
Vanadium, dissolved	< 0.001	N/A	0.001	mg/L	N/A	2016-09-24	
Zinc, dissolved	**0.006**	0.075	0.004	mg/L	N/A	2016-09-24	
Zirconium, dissolved	**0.0001**	N/A	0.0001	mg/L	N/A	2016-09-24	
BCMOE Aggregate Hydrocarbons							
VPHw	< 100	1500	100	µg/L	N/A	N/A	
EPHw10-19	< 250	5000	250	µg/L	2016-09-27	2016-09-27	
EPHw19-32	< 250	N/A	250	µg/L	2016-09-27	2016-09-27	
LEPHw	< 250	500	250	µg/L	N/A	N/A	
HEPHw	< 250	N/A	250	µg/L	N/A	N/A	
VHw (6-10)	< 100	15000	100	µg/L	N/A	2016-09-24	
Surrogate: 2-Methylnonane	*82*		*60-140*	%	*2016-09-27*	*2016-09-27*	
Polycyclic Aromatic Hydrocarbons (PAH)							
Acenaphthene	**0.89**	60	0.05	µg/L	2016-09-27	2016-09-27	
Acenaphthylene	< 0.20	N/A	0.20	µg/L	2016-09-27	2016-09-27	
Acridine	< 0.10	0.5	0.10	µg/L	2016-09-27	2016-09-27	
Anthracene	**0.02**	1	0.01	µg/L	2016-09-27	2016-09-27	

REPORTED TO	Morrison Hershfield Limited - Burnaby	**WORK ORDER**	6091660
PROJECT	Whistler Landfill - Spring/Fall	**REPORTED**	2016-09-30

Analyte	Result / *Recovery*	Standard / Guideline	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: Groundwater Interceptor (6091660-09) [Water] Sampled: 2016-09-21 13:00, Continued							
Polycyclic Aromatic Hydrocarbons (PAH), Continued							
Benz (a) anthracene	< 0.01	1	0.01	µg/L	2016-09-27	2016-09-27	
Benzo (a) pyrene	< 0.01	0.1	0.01	µg/L	2016-09-27	2016-09-27	
Benzo (b) fluoranthene	< 0.05	N/A	0.05	µg/L	2016-09-27	2016-09-27	
Benzo (g,h,i) perylene	< 0.05	N/A	0.05	µg/L	2016-09-27	2016-09-27	
Benzo (k) fluoranthene	< 0.05	N/A	0.05	µg/L	2016-09-27	2016-09-27	
Chrysene	< 0.05	1	0.05	µg/L	2016-09-27	2016-09-27	
Dibenz (a,h) anthracene	< 0.05	N/A	0.05	µg/L	2016-09-27	2016-09-27	
Fluoranthene	**0.16**	2	0.03	µg/L	2016-09-27	2016-09-27	
Fluorene	**0.13**	120	0.05	µg/L	2016-09-27	2016-09-27	
Indeno (1,2,3-cd) pyrene	< 0.05	N/A	0.05	µg/L	2016-09-27	2016-09-27	
Naphthalene	< 0.20	10	0.20	µg/L	2016-09-27	2016-09-27	
Phenanthrene	< 0.10	3	0.10	µg/L	2016-09-27	2016-09-27	
Pyrene	**0.07**	0.2	0.02	µg/L	2016-09-27	2016-09-27	
Quinoline	< 0.10	34	0.10	µg/L	2016-09-27	2016-09-27	
Surrogate: Acridine-d9	*77*		*60-130*	%	*2016-09-27*	*2016-09-27*	
Surrogate: Naphthalene-d8	*93*		*60-130*	%	*2016-09-27*	*2016-09-27*	
Surrogate: Perylene-d12	*34*		*60-130*	%	*2016-09-27*	*2016-09-27*	S09
Volatile Organic Compounds (VOC)							
Acetone	< 10.0	N/A	10.0	µg/L	N/A	2016-09-24	
Benzene	< 0.5	1000	0.5	µg/L	N/A	2016-09-24	
Bromodichloromethane	< 1.0	N/A	1.0	µg/L	N/A	2016-09-24	
Bromoform	< 1.0	N/A	1.0	µg/L	N/A	2016-09-24	
Bromomethane	< 2.0	N/A	2.0	µg/L	N/A	2016-09-24	
2-Butanone (MEK)	< 5.0	N/A	5.0	µg/L	N/A	2016-09-24	
Carbon tetrachloride	< 1.0	130	1.0	µg/L	N/A	2016-09-24	
Chlorobenzene	< 1.0	13	1.0	µg/L	N/A	2016-09-24	
Chloroethane	< 2.0	N/A	2.0	µg/L	N/A	2016-09-24	
Chloroform	< 1.0	20	1.0	µg/L	N/A	2016-09-24	
Chloromethane	< 2.0	N/A	2.0	µg/L	N/A	2016-09-24	
Dibromochloromethane	< 1.0	N/A	1.0	µg/L	N/A	2016-09-24	
Dibromomethane	< 1.0	N/A	1.0	µg/L	N/A	2016-09-24	
1,3-Dichlorobenzene	< 1.0	1500	1.0	µg/L	N/A	2016-09-24	
1,4-Dichlorobenzene	< 1.0	260	1.0	µg/L	N/A	2016-09-24	
1,1-Dichloroethane	< 1.0	N/A	1.0	µg/L	N/A	2016-09-24	
1,2-Dichloroethane	< 1.0	1000	1.0	µg/L	N/A	2016-09-24	
1,1-Dichloroethene	< 1.0	N/A	1.0	µg/L	N/A	2016-09-24	
cis-1,2-Dichloroethene	< 1.0	N/A	1.0	µg/L	N/A	2016-09-24	
trans-1,2-Dichloroethene	< 1.0	N/A	1.0	µg/L	N/A	2016-09-24	
1,2-Dichloropropane	< 1.0	N/A	1.0	µg/L	N/A	2016-09-24	
cis-1,3-Dichloropropene	< 1.0	N/A	1.0	µg/L	N/A	2016-09-24	
trans-1,3-Dichloropropene	< 1.0	N/A	1.0	µg/L	N/A	2016-09-24	
Ethylbenzene	< 1.0	2000	1.0	µg/L	N/A	2016-09-24	
Methyl tert-butyl ether	< 1.0	34000	1.0	µg/L	N/A	2016-09-24	
Methylene chloride	< 3.0	980	3.0	µg/L	N/A	2016-09-24	
4-Methyl-2-Pentanone (MIBK)	< 10.0	N/A	10.0	µg/L	N/A	2016-09-24	

REPORTED TO	Morrison Hershfield Limited - Burnaby	**WORK ORDER**	6091660
PROJECT	Whistler Landfill - Spring/Fall	**REPORTED**	2016-09-30

Analyte	Result / *Recovery*	Standard / Guideline	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: Groundwater Interceptor (6091660-09) [Water] Sampled: 2016-09-21 13:00, Continued							
Volatile Organic Compounds (VOC), Continued							
Styrene	< 1.0	720	1.0	µg/L	N/A	2016-09-24	
1,1,1,2-Tetrachloroethane	< 1.0	N/A	1.0	µg/L	N/A	2016-09-24	
1,1,2,2-Tetrachloroethane	< 1.0	1100	1.0	µg/L	N/A	2016-09-24	
Tetrachloroethene	< 1.0	N/A	1.0	µg/L	N/A	2016-09-24	
Toluene	< 1.0	390	1.0	µg/L	N/A	2016-09-24	
1,1,1-Trichloroethane	< 1.0	N/A	1.0	µg/L	N/A	2016-09-24	
1,1,2-Trichloroethane	< 1.0	N/A	1.0	µg/L	N/A	2016-09-24	
Trichloroethene	< 1.0	200	1.0	µg/L	N/A	2016-09-24	
Trichlorofluoromethane	< 1.0	N/A	1.0	µg/L	N/A	2016-09-24	
Vinyl chloride	< 2.0	N/A	2.0	µg/L	N/A	2016-09-24	
m,p-Xylene	< 1.0	N/A	1.0	µg/L	N/A	2016-09-24	
o-Xylene	< 1.0	N/A	1.0	µg/L	N/A	2016-09-24	
Xylenes (total)	< 2.0	N/A	2.0	µg/L	N/A	2016-09-24	
1,2-Dibromoethane	< 0.3	N/A	0.3	µg/L	N/A	2016-09-24	
1,2-Dichlorobenzene	< 0.5	7	0.5	µg/L	N/A	2016-09-24	
Surrogate: Toluene-d8	*87*		*70-130*	%	*N/A*	*2016-09-24*	
Surrogate: 4-Bromofluorobenzene	*91*		*70-130*	%	*N/A*	*2016-09-24*	
Surrogate: 1,4-Dichlorobenzene-d4	*86*		*70-130*	%	*N/A*	*2016-09-24*	
Sample ID: Dup Groundwater (6091660-10) [Water] Sampled: 2016-09-21 10:00							
Anions							
Bromide	< 0.10	N/A	0.10	mg/L	N/A	2016-09-24	
Chloride	**8.22**	1500	0.10	mg/L	N/A	2016-09-24	
Fluoride	< 0.10	2	0.1	mg/L	N/A	2016-09-24	
Nitrite (as N)	**0.003**	0.2	0.001	mg/L	N/A	2016-09-28	HT1
Nitrate+Nitrite (as N)	**0.049**	400	0.005	mg/L	N/A	2016-09-28	
Sulfate	**22.4**	1000	1.0	mg/L	N/A	2016-09-24	
General Parameters							
pH	**6.18**	N/A	0.01	pH units	N/A	2016-09-27	HT2
Conductivity (EC)	**232**	N/A	2	µS/cm	N/A	2016-09-29	
Ammonia, Total (as N)	**1.36**	N/A	0.02	mg/L	N/A	2016-09-27	
Nitrogen, Total Kjeldahl	**1.36**	N/A	0.05	mg/L	2016-09-28	2016-09-28	
Alkalinity, Total (as CaCO3)	**68**	N/A	2	mg/L	N/A	2016-09-27	
Alkalinity, Phenolphthalein (as CaCO3)	< 1	N/A	2	mg/L	N/A	2016-09-27	
Alkalinity, Bicarbonate (as CaCO3)	**68**	N/A	2	mg/L	N/A	2016-09-27	
Alkalinity, Carbonate (as CaCO3)	< 1	N/A	2	mg/L	N/A	2016-09-27	
Alkalinity, Hydroxide (as CaCO3)	< 1	N/A	2	mg/L	N/A	2016-09-27	
Chemical Oxygen Demand	**10**	N/A	20	mg/L	N/A	2016-09-27	
Solids, Total Suspended	**301**	N/A	2	mg/L	N/A	2016-09-27	
Calculated Parameters							
Hardness, Total (as CaCO3)	**70.9**	N/A	0.50	mg/L	N/A	N/A	
Nitrate (as N)	**0.045**	400	0.005	mg/L	N/A	N/A	
Nitrogen, Total	**1.41**	N/A	0.050	mg/L	N/A	N/A	

REPORTED TO	Morrison Hershfield Limited - Burnaby	**WORK ORDER**	6091660
PROJECT	Whistler Landfill - Spring/Fall	**REPORTED**	2016-09-30

Analyte	Result / *Recovery*	Standard / Guideline	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: Dup Groundwater (6091660-10) [Water] Sampled: 2016-09-21 10:00, Continued							
Dissolved Metals							
Aluminum, dissolved	**0.006**	N/A	0.005	mg/L	N/A	2016-09-26	
Antimony, dissolved	< 0.0001	0.2	0.0001	mg/L	N/A	2016-09-26	
Arsenic, dissolved	**0.0049**	0.05	0.0005	mg/L	N/A	2016-09-26	
Barium, dissolved	**0.087**	5	0.005	mg/L	N/A	2016-09-26	
Beryllium, dissolved	< 0.0001	0.053	0.0001	mg/L	N/A	2016-09-26	
Bismuth, dissolved	< 0.0001	N/A	0.0001	mg/L	N/A	2016-09-26	
Boron, dissolved	**0.038**	50	0.004	mg/L	N/A	2016-09-26	
Cadmium, dissolved	**0.00008**	0.0001	0.00001	mg/L	N/A	2016-09-26	
Calcium, dissolved	**23.1**	N/A	0.2	mg/L	N/A	2016-09-26	
Chromium, dissolved	< 0.0005	N/A	0.0005	mg/L	N/A	2016-09-26	
Cobalt, dissolved	**0.0162**	0.04	0.00005	mg/L	N/A	2016-09-26	
Copper, dissolved	**0.0004**	0.02	0.0002	mg/L	N/A	2016-09-26	
Iron, dissolved	**28.0**	N/A	0.010	mg/L	N/A	2016-09-26	
Lead, dissolved	< 0.0001	0.04	0.0001	mg/L	N/A	2016-09-26	
Lithium, dissolved	< 0.0001	N/A	0.0001	mg/L	N/A	2016-09-26	
Magnesium, dissolved	**3.22**	N/A	0.01	mg/L	N/A	2016-09-26	
Manganese, dissolved	**1.52**	N/A	0.0002	mg/L	N/A	2016-09-26	
Mercury, dissolved	< 0.00002	0.001	0.00002	mg/L	2016-09-27	2016-09-28	
Molybdenum, dissolved	**0.0185**	10	0.0001	mg/L	N/A	2016-09-26	
Nickel, dissolved	**0.0018**	0.25	0.0002	mg/L	N/A	2016-09-26	
Phosphorus, dissolved	< 0.02	N/A	0.02	mg/L	N/A	2016-09-26	
Potassium, dissolved	**4.15**	N/A	0.02	mg/L	N/A	2016-09-26	
Selenium, dissolved	< 0.0005	0.01	0.0005	mg/L	N/A	2016-09-26	
Silicon, dissolved	**9.2**	N/A	0.5	mg/L	N/A	2016-09-26	
Silver, dissolved	< 0.00005	0.0005	0.00005	mg/L	N/A	2016-09-26	
Sodium, dissolved	**10.9**	N/A	0.02	mg/L	N/A	2016-09-26	
Strontium, dissolved	**0.140**	N/A	0.001	mg/L	N/A	2016-09-26	
Sulfur, dissolved	**9**	N/A	1	mg/L	N/A	2016-09-26	
Tellurium, dissolved	< 0.0002	N/A	0.0002	mg/L	N/A	2016-09-26	
Thallium, dissolved	< 0.00002	0.003	0.00002	mg/L	N/A	2016-09-26	
Thorium, dissolved	< 0.0001	N/A	0.0001	mg/L	N/A	2016-09-26	
Tin, dissolved	< 0.0002	N/A	0.0002	mg/L	N/A	2016-09-26	
Titanium, dissolved	< 0.005	1	0.005	mg/L	N/A	2016-09-26	
Uranium, dissolved	**0.00007**	3	0.00002	mg/L	N/A	2016-09-26	
Vanadium, dissolved	< 0.001	N/A	0.001	mg/L	N/A	2016-09-26	
Zinc, dissolved	**0.007**	0.075	0.004	mg/L	N/A	2016-09-26	
Zirconium, dissolved	< 0.0001	N/A	0.0001	mg/L	N/A	2016-09-26	
BCMOE Aggregate Hydrocarbons							
VPHw	< 100	1500	100	µg/L	N/A	N/A	
EPHw10-19	< 250	5000	250	µg/L	2016-09-27	2016-09-27	
EPHw19-32	< 250	N/A	250	µg/L	2016-09-27	2016-09-27	
LEPHw	< 250	500	250	µg/L	N/A	N/A	
HEPHw	< 250	N/A	250	µg/L	N/A	N/A	
VHw (6-10)	< 100	15000	100	µg/L	N/A	2016-09-24	
Surrogate: 2-Methylnonane	*75*		*60-140*	%	*2016-09-27*	*2016-09-27*	

REPORTED TO	Morrison Hershfield Limited - Burnaby	**WORK ORDER**	6091660
PROJECT	Whistler Landfill - Spring/Fall	**REPORTED**	2016-09-30

Analyte	Result / *Recovery*	Standard / Guideline	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: Dup Groundwater (6091660-10) [Water] Sampled: 2016-09-21 10:00, Continued							
Polycyclic Aromatic Hydrocarbons (PAH)							
Acenaphthene	< 0.05	60	0.05	µg/L	2016-09-27	2016-09-27	
Acenaphthylene	< 0.20	N/A	0.20	µg/L	2016-09-27	2016-09-27	
Acridine	< 0.10	0.5	0.10	µg/L	2016-09-27	2016-09-27	
Anthracene	< 0.01	1	0.01	µg/L	2016-09-27	2016-09-27	
Benz (a) anthracene	< 0.01	1	0.01	µg/L	2016-09-27	2016-09-27	
Benzo (a) pyrene	< 0.01	0.1	0.01	µg/L	2016-09-27	2016-09-27	
Benzo (b) fluoranthene	< 0.05	N/A	0.05	µg/L	2016-09-27	2016-09-27	
Benzo (g,h,i) perylene	< 0.05	N/A	0.05	µg/L	2016-09-27	2016-09-27	
Benzo (k) fluoranthene	< 0.05	N/A	0.05	µg/L	2016-09-27	2016-09-27	
Chrysene	< 0.05	1	0.05	µg/L	2016-09-27	2016-09-27	
Dibenz (a,h) anthracene	< 0.05	N/A	0.05	µg/L	2016-09-27	2016-09-27	
Fluoranthene	< 0.03	2	0.03	µg/L	2016-09-27	2016-09-27	
Fluorene	< 0.05	120	0.05	µg/L	2016-09-27	2016-09-27	
Indeno (1,2,3-cd) pyrene	< 0.05	N/A	0.05	µg/L	2016-09-27	2016-09-27	
Naphthalene	< 0.20	10	0.20	µg/L	2016-09-27	2016-09-27	
Phenanthrene	< 0.10	3	0.10	µg/L	2016-09-27	2016-09-27	
Pyrene	< 0.02	0.2	0.02	µg/L	2016-09-27	2016-09-27	
Quinoline	< 0.10	34	0.10	µg/L	2016-09-27	2016-09-27	
Surrogate: Acridine-d9	*73*		*60-130*	%	*2016-09-27*	*2016-09-27*	
Surrogate: Naphthalene-d8	*90*		*60-130*	%	*2016-09-27*	*2016-09-27*	
Surrogate: Perylene-d12	*112*		*60-130*	%	*2016-09-27*	*2016-09-27*	
Volatile Organic Compounds (VOC)							
Acetone	< 10.0	N/A	10.0	µg/L	N/A	2016-09-24	
Benzene	< 0.5	1000	0.5	µg/L	N/A	2016-09-24	
Bromodichloromethane	< 1.0	N/A	1.0	µg/L	N/A	2016-09-24	
Bromoform	< 1.0	N/A	1.0	µg/L	N/A	2016-09-24	
Bromomethane	< 2.0	N/A	2.0	µg/L	N/A	2016-09-24	
2-Butanone (MEK)	< 5.0	N/A	5.0	µg/L	N/A	2016-09-24	
Carbon tetrachloride	< 1.0	130	1.0	µg/L	N/A	2016-09-24	
Chlorobenzene	< 1.0	13	1.0	µg/L	N/A	2016-09-24	
Chloroethane	< 2.0	N/A	2.0	µg/L	N/A	2016-09-24	
Chloroform	< 1.0	20	1.0	µg/L	N/A	2016-09-24	
Chloromethane	< 2.0	N/A	2.0	µg/L	N/A	2016-09-24	
Dibromochloromethane	< 1.0	N/A	1.0	µg/L	N/A	2016-09-24	
Dibromomethane	< 1.0	N/A	1.0	µg/L	N/A	2016-09-24	
1,3-Dichlorobenzene	< 1.0	1500	1.0	µg/L	N/A	2016-09-24	
1,4-Dichlorobenzene	< 1.0	260	1.0	µg/L	N/A	2016-09-24	
1,1-Dichloroethane	< 1.0	N/A	1.0	µg/L	N/A	2016-09-24	
1,2-Dichloroethane	< 1.0	1000	1.0	µg/L	N/A	2016-09-24	
1,1-Dichloroethene	< 1.0	N/A	1.0	µg/L	N/A	2016-09-24	
cis-1,2-Dichloroethene	< 1.0	N/A	1.0	µg/L	N/A	2016-09-24	
trans-1,2-Dichloroethene	< 1.0	N/A	1.0	µg/L	N/A	2016-09-24	
1,2-Dichloropropane	< 1.0	N/A	1.0	µg/L	N/A	2016-09-24	
cis-1,3-Dichloropropene	< 1.0	N/A	1.0	µg/L	N/A	2016-09-24	
trans-1,3-Dichloropropene	< 1.0	N/A	1.0	µg/L	N/A	2016-09-24	

REPORTED TO	Morrison Hershfield Limited - Burnaby	**WORK ORDER**	6091660
PROJECT	Whistler Landfill - Spring/Fall	**REPORTED**	2016-09-30

Analyte	Result / *Recovery*	Standard / Guideline	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: Dup Groundwater (6091660-10) [Water] Sampled: 2016-09-21 10:00, Continued							
Volatile Organic Compounds (VOC), Continued							
Ethylbenzene	< 1.0	2000	1.0	µg/L	N/A	2016-09-24	
Methyl tert-butyl ether	< 1.0	34000	1.0	µg/L	N/A	2016-09-24	
Methylene chloride	< 3.0	980	3.0	µg/L	N/A	2016-09-24	
4-Methyl-2-Pentanone (MIBK)	< 10.0	N/A	10.0	µg/L	N/A	2016-09-24	
Styrene	< 1.0	720	1.0	µg/L	N/A	2016-09-24	
1,1,1,2-Tetrachloroethane	< 1.0	N/A	1.0	µg/L	N/A	2016-09-24	
1,1,2,2-Tetrachloroethane	< 1.0	1100	1.0	µg/L	N/A	2016-09-24	
Tetrachloroethene	< 1.0	N/A	1.0	µg/L	N/A	2016-09-24	
Toluene	< 1.0	390	1.0	µg/L	N/A	2016-09-24	
1,1,1-Trichloroethane	< 1.0	N/A	1.0	µg/L	N/A	2016-09-24	
1,1,2-Trichloroethane	< 1.0	N/A	1.0	µg/L	N/A	2016-09-24	
Trichloroethene	< 1.0	200	1.0	µg/L	N/A	2016-09-24	
Trichlorofluoromethane	< 1.0	N/A	1.0	µg/L	N/A	2016-09-24	
Vinyl chloride	< 2.0	N/A	2.0	µg/L	N/A	2016-09-24	
m,p-Xylene	< 1.0	N/A	1.0	µg/L	N/A	2016-09-24	
o-Xylene	< 1.0	N/A	1.0	µg/L	N/A	2016-09-24	
Xylenes (total)	< 2.0	N/A	2.0	µg/L	N/A	2016-09-24	
1,2-Dibromoethane	< 0.3	N/A	0.3	µg/L	N/A	2016-09-24	
1,2-Dichlorobenzene	< 0.5	7	0.5	µg/L	N/A	2016-09-24	
Surrogate: Toluene-d8	*89*		*70-130*	%	*N/A*	*2016-09-24*	
Surrogate: 4-Bromofluorobenzene	*92*		*70-130*	%	*N/A*	*2016-09-24*	
Surrogate: 1,4-Dichlorobenzene-d4	*88*		*70-130*	%	*N/A*	*2016-09-24*	
Sample ID: Trip Blank (6091660-11) [Water] Sampled: 2016-09-21 10:00							
Anions							
Bromide	< 0.10	N/A	0.10	mg/L	N/A	2016-09-24	
Chloride	< 0.10	1500	0.10	mg/L	N/A	2016-09-24	
Fluoride	< 0.10	2	0.1	mg/L	N/A	2016-09-24	
Nitrite (as N)	< 0.001	0.2	0.001	mg/L	N/A	2016-09-28	HT1
Nitrate+Nitrite (as N)	< 0.005	400	0.005	mg/L	N/A	2016-09-28	
Sulfate	< 1.0	1000	1.0	mg/L	N/A	2016-09-24	
General Parameters							
pH	**6.20**	N/A	0.01	pH units	N/A	2016-09-27	HT2
Conductivity (EC)	< 2	N/A	2	µS/cm	N/A	2016-09-29	
Ammonia, Total (as N)	**0.023**	N/A	0.02	mg/L	N/A	2016-09-27	
Nitrogen, Total Kjeldahl	< 0.05	N/A	0.05	mg/L	2016-09-28	2016-09-28	
Alkalinity, Total (as CaCO3)	< 1	N/A	2	mg/L	N/A	2016-09-27	
Alkalinity, Phenolphthalein (as CaCO3)	< 1	N/A	2	mg/L	N/A	2016-09-27	
Alkalinity, Bicarbonate (as CaCO3)	< 1	N/A	2	mg/L	N/A	2016-09-27	
Alkalinity, Carbonate (as CaCO3)	< 1	N/A	2	mg/L	N/A	2016-09-27	
Alkalinity, Hydroxide (as CaCO3)	< 1	N/A	2	mg/L	N/A	2016-09-27	
Chemical Oxygen Demand	< 5	N/A	20	mg/L	N/A	2016-09-27	
Calculated Parameters							

REPORTED TO	Morrison Hershfield Limited - Burnaby	**WORK ORDER**	6091660
PROJECT	Whistler Landfill - Spring/Fall	**REPORTED**	2016-09-30

Analyte	Result / *Recovery*	Standard / Guideline	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: Trip Blank (6091660-11) [Water] Sampled: 2016-09-21 10:00, Continued							
Calculated Parameters, Continued							
Hardness, Total (as CaCO3)	< 0.50	N/A	0.50	mg/L	N/A	N/A	
Nitrate (as N)	< 0.005	400	0.005	mg/L	N/A	N/A	
Nitrogen, Total	< 0.050	N/A	0.050	mg/L	N/A	N/A	
Dissolved Metals							
Aluminum, dissolved	< 0.005	N/A	0.005	mg/L	N/A	2016-09-26	
Antimony, dissolved	< 0.0001	0.2	0.0001	mg/L	N/A	2016-09-26	
Arsenic, dissolved	< 0.0005	0.05	0.0005	mg/L	N/A	2016-09-26	
Barium, dissolved	< 0.005	5	0.005	mg/L	N/A	2016-09-26	
Beryllium, dissolved	< 0.0001	0.053	0.0001	mg/L	N/A	2016-09-26	
Bismuth, dissolved	< 0.0001	N/A	0.0001	mg/L	N/A	2016-09-26	
Boron, dissolved	< 0.004	50	0.004	mg/L	N/A	2016-09-26	
Cadmium, dissolved	< 0.00001	0.0001	0.00001	mg/L	N/A	2016-09-26	
Calcium, dissolved	< 0.2	N/A	0.2	mg/L	N/A	2016-09-26	
Chromium, dissolved	< 0.0005	N/A	0.0005	mg/L	N/A	2016-09-26	
Cobalt, dissolved	< 0.00005	0.04	0.00005	mg/L	N/A	2016-09-26	
Copper, dissolved	**0.0002**	0.02	0.0002	mg/L	N/A	2016-09-26	
Iron, dissolved	< 0.010	N/A	0.010	mg/L	N/A	2016-09-26	
Lead, dissolved	< 0.0001	0.04	0.0001	mg/L	N/A	2016-09-26	
Lithium, dissolved	**0.0005**	N/A	0.0001	mg/L	N/A	2016-09-26	
Magnesium, dissolved	< 0.01	N/A	0.01	mg/L	N/A	2016-09-26	
Manganese, dissolved	< 0.0002	N/A	0.0002	mg/L	N/A	2016-09-26	
Mercury, dissolved	< 0.00002	0.001	0.00002	mg/L	2016-09-27	2016-09-28	
Molybdenum, dissolved	< 0.0001	10	0.0001	mg/L	N/A	2016-09-26	
Nickel, dissolved	< 0.0002	0.25	0.0002	mg/L	N/A	2016-09-26	
Phosphorus, dissolved	< 0.02	N/A	0.02	mg/L	N/A	2016-09-26	
Potassium, dissolved	< 0.02	N/A	0.02	mg/L	N/A	2016-09-26	
Selenium, dissolved	< 0.0005	0.01	0.0005	mg/L	N/A	2016-09-26	
Silicon, dissolved	< 0.5	N/A	0.5	mg/L	N/A	2016-09-26	
Silver, dissolved	< 0.00005	0.0005	0.00005	mg/L	N/A	2016-09-26	
Sodium, dissolved	< 0.02	N/A	0.02	mg/L	N/A	2016-09-26	
Strontium, dissolved	< 0.001	N/A	0.001	mg/L	N/A	2016-09-26	
Sulfur, dissolved	< 1	N/A	1	mg/L	N/A	2016-09-26	
Tellurium, dissolved	< 0.0002	N/A	0.0002	mg/L	N/A	2016-09-26	
Thallium, dissolved	< 0.00002	0.003	0.00002	mg/L	N/A	2016-09-26	
Thorium, dissolved	< 0.0001	N/A	0.0001	mg/L	N/A	2016-09-26	
Tin, dissolved	**0.0002**	N/A	0.0002	mg/L	N/A	2016-09-26	
Titanium, dissolved	< 0.005	1	0.005	mg/L	N/A	2016-09-26	
Uranium, dissolved	< 0.00002	3	0.00002	mg/L	N/A	2016-09-26	
Vanadium, dissolved	< 0.001	N/A	0.001	mg/L	N/A	2016-09-26	
Zinc, dissolved	< 0.004	0.075	0.004	mg/L	N/A	2016-09-26	
Zirconium, dissolved	< 0.0001	N/A	0.0001	mg/L	N/A	2016-09-26	
BCMOE Aggregate Hydrocarbons							
VPHw	< 100	1500	100	µg/L	N/A	N/A	
EPHw10-19	< 250	5000	250	µg/L	2016-09-27	2016-09-27	

REPORTED TO	Morrison Hershfield Limited - Burnaby	**WORK ORDER**	6091660
PROJECT	Whistler Landfill - Spring/Fall	**REPORTED**	2016-09-30

Analyte	Result / *Recovery*	Standard / Guideline	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: Trip Blank (6091660-11) [Water] Sampled: 2016-09-21 10:00, Continued							
BCMOE Aggregate Hydrocarbons, Continued							
EPHw19-32	< 250	N/A	250	µg/L	2016-09-27	2016-09-27	
LEPHw	< 250	500	250	µg/L	N/A	N/A	
HEPHw	< 250	N/A	250	µg/L	N/A	N/A	
VHw (6-10)	< 100	15000	100	µg/L	N/A	2016-09-24	
Surrogate: 2-Methylnonane	*86*		*60-140*	%	*2016-09-27*	*2016-09-27*	
Polycyclic Aromatic Hydrocarbons (PAH)							
Acenaphthene	< 0.05	60	0.05	µg/L	2016-09-27	2016-09-27	
Acenaphthylene	< 0.20	N/A	0.20	µg/L	2016-09-27	2016-09-27	
Acridine	< 0.10	0.5	0.10	µg/L	2016-09-27	2016-09-27	
Anthracene	< 0.01	1	0.01	µg/L	2016-09-27	2016-09-27	
Benz (a) anthracene	< 0.01	1	0.01	µg/L	2016-09-27	2016-09-27	
Benzo (a) pyrene	< 0.01	0.1	0.01	µg/L	2016-09-27	2016-09-27	
Benzo (b) fluoranthene	< 0.05	N/A	0.05	µg/L	2016-09-27	2016-09-27	
Benzo (g,h,i) perylene	< 0.05	N/A	0.05	µg/L	2016-09-27	2016-09-27	
Benzo (k) fluoranthene	< 0.05	N/A	0.05	µg/L	2016-09-27	2016-09-27	
Chrysene	< 0.05	1	0.05	µg/L	2016-09-27	2016-09-27	
Dibenz (a,h) anthracene	< 0.05	N/A	0.05	µg/L	2016-09-27	2016-09-27	
Fluoranthene	< 0.03	2	0.03	µg/L	2016-09-27	2016-09-27	
Fluorene	< 0.05	120	0.05	µg/L	2016-09-27	2016-09-27	
Indeno (1,2,3-cd) pyrene	< 0.05	N/A	0.05	µg/L	2016-09-27	2016-09-27	
Naphthalene	< 0.20	10	0.20	µg/L	2016-09-27	2016-09-27	
Phenanthrene	< 0.10	3	0.10	µg/L	2016-09-27	2016-09-27	
Pyrene	< 0.02	0.2	0.02	µg/L	2016-09-27	2016-09-27	
Quinoline	< 0.10	34	0.10	µg/L	2016-09-27	2016-09-27	
Surrogate: Acridine-d9	*70*		*60-130*	%	*2016-09-27*	*2016-09-27*	
Surrogate: Naphthalene-d8	*93*		*60-130*	%	*2016-09-27*	*2016-09-27*	
Surrogate: Perylene-d12	*126*		*60-130*	%	*2016-09-27*	*2016-09-27*	
Volatile Organic Compounds (VOC)							
Acetone	< 10.0	N/A	10.0	µg/L	N/A	2016-09-24	
Benzene	< 0.5	1000	0.5	µg/L	N/A	2016-09-24	
Bromodichloromethane	< 1.0	N/A	1.0	µg/L	N/A	2016-09-24	
Bromoform	< 1.0	N/A	1.0	µg/L	N/A	2016-09-24	
Bromomethane	< 2.0	N/A	2.0	µg/L	N/A	2016-09-24	
2-Butanone (MEK)	< 5.0	N/A	5.0	µg/L	N/A	2016-09-24	
Carbon tetrachloride	< 1.0	130	1.0	µg/L	N/A	2016-09-24	
Chlorobenzene	< 1.0	13	1.0	µg/L	N/A	2016-09-24	
Chloroethane	< 2.0	N/A	2.0	µg/L	N/A	2016-09-24	
Chloroform	< 1.0	20	1.0	µg/L	N/A	2016-09-24	
Chloromethane	< 2.0	N/A	2.0	µg/L	N/A	2016-09-24	
Dibromochloromethane	< 1.0	N/A	1.0	µg/L	N/A	2016-09-24	
Dibromomethane	< 1.0	N/A	1.0	µg/L	N/A	2016-09-24	
1,3-Dichlorobenzene	< 1.0	1500	1.0	µg/L	N/A	2016-09-24	
1,4-Dichlorobenzene	< 1.0	260	1.0	µg/L	N/A	2016-09-24	
1,1-Dichloroethane	< 1.0	N/A	1.0	µg/L	N/A	2016-09-24	

REPORTED TO	Morrison Hershfield Limited - Burnaby	**WORK ORDER**	6091660
PROJECT	Whistler Landfill - Spring/Fall	**REPORTED**	2016-09-30

Analyte	Result / *Recovery*	Standard / Guideline	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: Trip Blank (6091660-11) [Water] Sampled: 2016-09-21 10:00, Continued							
Volatile Organic Compounds (VOC), Continued							
1,2-Dichloroethane	< 1.0	1000	1.0	µg/L	N/A	2016-09-24	
1,1-Dichloroethene	< 1.0	N/A	1.0	µg/L	N/A	2016-09-24	
cis-1,2-Dichloroethene	< 1.0	N/A	1.0	µg/L	N/A	2016-09-24	
trans-1,2-Dichloroethene	< 1.0	N/A	1.0	µg/L	N/A	2016-09-24	
1,2-Dichloropropane	< 1.0	N/A	1.0	µg/L	N/A	2016-09-24	
cis-1,3-Dichloropropene	< 1.0	N/A	1.0	µg/L	N/A	2016-09-24	
trans-1,3-Dichloropropene	< 1.0	N/A	1.0	µg/L	N/A	2016-09-24	
Ethylbenzene	< 1.0	2000	1.0	µg/L	N/A	2016-09-24	
Methyl tert-butyl ether	< 1.0	34000	1.0	µg/L	N/A	2016-09-24	
Methylene chloride	< 3.0	980	3.0	µg/L	N/A	2016-09-24	
4-Methyl-2-Pentanone (MIBK)	< 10.0	N/A	10.0	µg/L	N/A	2016-09-24	
Styrene	< 1.0	720	1.0	µg/L	N/A	2016-09-24	
1,1,1,2-Tetrachloroethane	< 1.0	N/A	1.0	µg/L	N/A	2016-09-24	
1,1,2,2-Tetrachloroethane	< 1.0	1100	1.0	µg/L	N/A	2016-09-24	
Tetrachloroethene	< 1.0	N/A	1.0	µg/L	N/A	2016-09-24	
Toluene	< 1.0	390	1.0	µg/L	N/A	2016-09-24	
1,1,1-Trichloroethane	< 1.0	N/A	1.0	µg/L	N/A	2016-09-24	
1,1,2-Trichloroethane	< 1.0	N/A	1.0	µg/L	N/A	2016-09-24	
Trichloroethene	< 1.0	200	1.0	µg/L	N/A	2016-09-24	
Trichlorofluoromethane	< 1.0	N/A	1.0	µg/L	N/A	2016-09-24	
Vinyl chloride	< 2.0	N/A	2.0	µg/L	N/A	2016-09-24	
m,p-Xylene	< 1.0	N/A	1.0	µg/L	N/A	2016-09-24	
o-Xylene	< 1.0	N/A	1.0	µg/L	N/A	2016-09-24	
Xylenes (total)	< 2.0	N/A	2.0	µg/L	N/A	2016-09-24	
1,2-Dibromoethane	< 0.3	N/A	0.3	µg/L	N/A	2016-09-24	
1,2-Dichlorobenzene	< 0.5	7	0.5	µg/L	N/A	2016-09-24	
Surrogate: Toluene-d8	*87*		*70-130*	%	*N/A*	*2016-09-24*	
Surrogate: 4-Bromofluorobenzene	*91*		*70-130*	%	*N/A*	*2016-09-24*	
Surrogate: 1,4-Dichlorobenzene-d4	*85*		*70-130*	%	*N/A*	*2016-09-24*	

Sample / Analysis Qualifiers:

HT1	The sample was prepared and/or analyzed past the recommended holding time.
HT2	The 15 minute recommended holding time (from sampling to analysis) has been exceeded - field analysis is recommended.
RA1	The Reported Detection Limit (RDL) has been raised due to matrix interference.
S09	The surrogate recovery for this sample is outside of established control limits due to sample matrix effect

REPORTED TO	Morrison Hershfield Limited - Burnaby	**WORK ORDER**	6091660
PROJECT	Whistler Landfill - Spring/Fall	**REPORTED**	2016-09-30

The following section displays the quality control (QC) data that is associated with your sample data. Groups of samples are prepared in "batches" and analyzed in conjunction with QC samples that ensure your data is of the highest quality. Common QC types include:

- **Method Blank (Blk)**: Laboratory reagent water is carried through sample preparation and analysis steps. Method Blanks indicate that results are free from contamination, i.e. not biased high from sources such as the sample container or the laboratory environment
- **Duplicate (Dup)**: Preparation and analysis of a replicate aliquot of a sample. Duplicates provide a measure of the analytical method's precision, i.e. how reproducible a result is. Duplicates are only reported if they are associated with your sample data.
- **Blank Spike (BS)**: A known amount of standard is carried through sample preparation and analysis steps. Blank Spikes, also known as laboratory control samples (LCS), are prepared from a different source of standard than used for the calibration. They ensure that the calibration is acceptable (i.e. not biased high or low) and also provide a measure of the analytical method's accuracy (i.e. closeness of the result to a target value).
- **Standard Reference Material (SRM)**: A material of similar matrix to the samples, externally certified for the parameter(s) listed. Standard Reference Materials ensure that the preparation steps in the method are adequate to achieve acceptable recoveries of the parameter(s) tested.

Each QC type is analyzed at a 5-10% frequency, i.e. one blank/duplicate/spike for every 10 samples. For all types of QC, the specified recovery (% Rec) and relative percent difference (RPD) limits are derived from long-term method performance averages and/or prescribed by the reference method.

Analyte	Result	MRL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Notes
Anions, Batch B6I1323										
Blank (B6I1323-BLK1)				Prepared: 2016-09-28, Analyzed: 2016-09-28						
Nitrate+Nitrite (as N)	< 0.005	0.005	mg/L							
Blank (B6I1323-BLK2)				Prepared: 2016-09-28, Analyzed: 2016-09-28						
Nitrate+Nitrite (as N)	< 0.005	0.005	mg/L							
LCS (B6I1323-BS1)				Prepared: 2016-09-28, Analyzed: 2016-09-28						
Nitrate+Nitrite (as N)	0.500	0.005	mg/L	0.500		100	91-108			
LCS (B6I1323-BS2)				Prepared: 2016-09-28, Analyzed: 2016-09-28						
Nitrate+Nitrite (as N)	0.508	0.005	mg/L	0.500		102	91-108			
Anions, Batch B6I1324										
Blank (B6I1324-BLK1)				Prepared: 2016-09-28, Analyzed: 2016-09-28						
Nitrite (as N)	< 0.001	0.001	mg/L							
LCS (B6I1324-BS1)				Prepared: 2016-09-28, Analyzed: 2016-09-28						
Nitrite (as N)	0.503	0.001	mg/L	0.500		101	90-110			
Anions, Batch B6I1473										
Blank (B6I1473-BLK1)				Prepared: 2016-09-24, Analyzed: 2016-09-24						
Bromide	< 0.10	0.10	mg/L							
Chloride	< 0.10	0.10	mg/L							
Fluoride	< 0.10	0.01	mg/L							
Sulfate	< 1.0	1.0	mg/L							
Blank (B6I1473-BLK2)				Prepared: 2016-09-25, Analyzed: 2016-09-25						
Bromide	< 0.10	0.10	mg/L							
Chloride	< 0.10	0.10	mg/L							
Fluoride	< 0.10	0.01	mg/L							
Sulfate	< 1.0	1.0	mg/L							

REPORTED TO	Morrison Hershfield Limited - Burnaby	**WORK ORDER**	6091660
PROJECT	Whistler Landfill - Spring/Fall	**REPORTED**	2016-09-30

Analyte	Result	MRL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Notes
Anions, Batch B6I1473, Continued										
Blank (B6I1473-BLK3)				Prepared: 2016-09-25, Analyzed: 2016-09-25						
Bromide	< 0.10	0.10	mg/L							
Chloride	< 0.10	0.10	mg/L							
Fluoride	< 0.10	0.01	mg/L							
Sulfate	< 1.0	1.0	mg/L							
LCS (B6I1473-BS1)				Prepared: 2016-09-24, Analyzed: 2016-09-24						
Bromide	3.75	0.10	mg/L	4.00		94	85-115			
Chloride	15.4	0.10	mg/L	16.0		96	90-110			
Fluoride	3.82	0.01	mg/L	4.00		95	88-108			
Sulfate	14.9	1.0	mg/L	16.0		93	91-109			
LCS (B6I1473-BS2)				Prepared: 2016-09-25, Analyzed: 2016-09-25						
Bromide	3.74	0.10	mg/L	4.00		94	85-115			
Chloride	15.4	0.10	mg/L	16.0		97	90-110			
Fluoride	3.89	0.01	mg/L	4.00		97	88-108			
Sulfate	14.8	1.0	mg/L	16.0		93	91-109			
LCS (B6I1473-BS3)				Prepared: 2016-09-25, Analyzed: 2016-09-25						
Bromide	3.77	0.10	mg/L	4.00		94	85-115			
Chloride	15.3	0.10	mg/L	16.0		95	90-110			
Fluoride	3.77	0.01	mg/L	4.00		94	88-108			
Sulfate	15.0	1.0	mg/L	16.0		94	91-109			
Anions, Batch B6I1522										
Blank (B6I1522-BLK1)				Prepared: 2016-09-26, Analyzed: 2016-09-26						
Bromide	< 0.10	0.10	mg/L							
Chloride	< 0.10	0.10	mg/L							
Fluoride	< 0.10	0.01	mg/L							
Sulfate	< 1.0	1.0	mg/L							
LCS (B6I1522-BS1)				Prepared: 2016-09-26, Analyzed: 2016-09-26						
Bromide	3.76	0.10	mg/L	4.00		94	85-115			
Chloride	15.5	0.10	mg/L	16.0		97	90-110			
Fluoride	3.87	0.01	mg/L	4.00		97	88-108			
Sulfate	14.8	1.0	mg/L	16.0		93	91-109			
BCMOE Aggregate Hydrocarbons, Batch B6I1451										
Blank (B6I1451-BLK1)				Prepared: 2016-09-24, Analyzed: 2016-09-24						
VHw (6-10)	< 100	100	µg/L							
LCS (B6I1451-BS2)				Prepared: 2016-09-24, Analyzed: 2016-09-24						
VHw (6-10)	3430	100	µg/L	3340		103	80-120			
Duplicate (B6I1451-DUP1)		**Source: 6091660-11**		Prepared: 2016-09-24, Analyzed: 2016-09-24						
VHw (6-10)	< 100	100	µg/L		< 100				27	
BCMOE Aggregate Hydrocarbons, Batch B6I1512										
Blank (B6I1512-BLK1)				Prepared: 2016-09-27, Analyzed: 2016-09-27						
EPHw10-19	< 250	250	µg/L							
EPHw19-32	< 250	250	µg/L							
Surrogate: 2-Methylnonane	*279*		*µg/L*	444		*63*	*60-140*			

REPORTED TO Morrison Hershfield Limited - Burnaby
PROJECT Whistler Landfill - Spring/Fall

WORK ORDER 6091660
REPORTED 2016-09-30

Analyte	Result	MRL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Notes
BCMOE Aggregate Hydrocarbons, Batch B6I1512, Continued										
LCS (B6I1512-BS2)				Prepared: 2016-09-27, Analyzed: 2016-09-27						
EPHw10-19	12200	250	µg/L	15400		79	70-130			
EPHw19-32	14600	250	µg/L	22200		65	70-130			SPK
Surrogate: 2-Methylnonane	*316*		*µg/L*	444		*71*	*60-140*			
Dissolved Metals, Batch B6I1384										
Blank (B6I1384-BLK1)				Prepared: 2016-09-23, Analyzed: 2016-09-23						
Aluminum, dissolved	< 0.005	0.005	mg/L							
Antimony, dissolved	< 0.0001	0.0001	mg/L							
Arsenic, dissolved	< 0.0005	0.0005	mg/L							
Barium, dissolved	< 0.005	0.005	mg/L							
Beryllium, dissolved	< 0.0001	0.0001	mg/L							
Bismuth, dissolved	< 0.0001	0.0001	mg/L							
Boron, dissolved	< 0.004	0.004	mg/L							
Cadmium, dissolved	< 0.00001	0.00001	mg/L							
Calcium, dissolved	< 0.2	0.2	mg/L							
Chromium, dissolved	< 0.0005	0.0005	mg/L							
Cobalt, dissolved	< 0.00005	0.00005	mg/L							
Copper, dissolved	< 0.0002	0.0002	mg/L							
Iron, dissolved	< 0.010	0.010	mg/L							
Lead, dissolved	< 0.0001	0.0001	mg/L							
Lithium, dissolved	< 0.0001	0.0001	mg/L							
Magnesium, dissolved	< 0.01	0.01	mg/L							
Manganese, dissolved	< 0.0002	0.0002	mg/L							
Molybdenum, dissolved	< 0.0001	0.0001	mg/L							
Nickel, dissolved	< 0.0002	0.0002	mg/L							
Phosphorus, dissolved	< 0.02	0.02	mg/L							
Potassium, dissolved	< 0.02	0.02	mg/L							
Selenium, dissolved	< 0.0005	0.0005	mg/L							
Silicon, dissolved	< 0.5	0.5	mg/L							
Silver, dissolved	< 0.00005	0.00005	mg/L							
Sodium, dissolved	< 0.02	0.02	mg/L							
Strontium, dissolved	< 0.001	0.001	mg/L							
Sulfur, dissolved	< 1	1	mg/L							
Tellurium, dissolved	< 0.0002	0.0002	mg/L							
Thallium, dissolved	< 0.00002	0.00002	mg/L							
Thorium, dissolved	< 0.0001	0.0001	mg/L							
Tin, dissolved	< 0.0002	0.0002	mg/L							
Titanium, dissolved	< 0.005	0.005	mg/L							
Uranium, dissolved	< 0.00002	0.00002	mg/L							
Vanadium, dissolved	< 0.001	0.001	mg/L							
Zinc, dissolved	< 0.004	0.004	mg/L							
Zirconium, dissolved	< 0.0001	0.0001	mg/L							
Reference (B6I1384-SRM1)				Prepared: 2016-09-24, Analyzed: 2016-09-24						
Aluminum, dissolved	0.226	0.005	mg/L	0.233		97	58-142			
Antimony, dissolved	0.0464	0.0001	mg/L	0.0430		108	75-125			
Arsenic, dissolved	0.460	0.0005	mg/L	0.438		105	81-119			
Barium, dissolved	3.27	0.005	mg/L	3.35		98	83-117			
Beryllium, dissolved	0.197	0.0001	mg/L	0.213		93	80-120			
Boron, dissolved	1.49	0.004	mg/L	1.74		86	74-117			
Cadmium, dissolved	0.224	0.00001	mg/L	0.224		100	83-117			
Calcium, dissolved	7.4	0.2	mg/L	7.69		97	76-124			
Chromium, dissolved	0.439	0.0005	mg/L	0.437		101	81-119			
Cobalt, dissolved	0.131	0.00005	mg/L	0.128		102	76-124			
Copper, dissolved	0.868	0.0002	mg/L	0.844		103	84-116			

REPORTED TO Morrison Hershfield Limited - Burnaby
PROJECT Whistler Landfill - Spring/Fall

WORK ORDER 6091660
REPORTED 2016-09-30

Analyte	Result	MRL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Notes
Dissolved Metals, Batch B6I1384, Continued										
Reference (B6I1384-SRM1), Continued				Prepared: 2016-09-24, Analyzed: 2016-09-24						
Iron, dissolved	1.30	0.010	mg/L	1.29		101	74-126			
Lead, dissolved	0.109	0.0001	mg/L	0.112		97	72-128			
Lithium, dissolved	0.0903	0.0001	mg/L	0.104		87	60-140			
Magnesium, dissolved	7.12	0.01	mg/L	6.92		103	81-119			
Manganese, dissolved	0.340	0.0002	mg/L	0.345		99	84-116			
Molybdenum, dissolved	0.424	0.0001	mg/L	0.426		100	83-117			
Nickel, dissolved	0.850	0.0002	mg/L	0.840		101	74-126			
Phosphorus, dissolved	0.54	0.02	mg/L	0.495		108	68-132			
Potassium, dissolved	3.15	0.02	mg/L	3.19		99	74-126			
Selenium, dissolved	0.0363	0.0005	mg/L	0.0331		110	70-130			
Sodium, dissolved	18.9	0.02	mg/L	19.1		99	72-128			
Strontium, dissolved	0.866	0.001	mg/L	0.916		95	84-113			
Thallium, dissolved	0.0381	0.00002	mg/L	0.0393		97	57-143			
Uranium, dissolved	0.253	0.00002	mg/L	0.266		95	85-115			
Vanadium, dissolved	0.852	0.001	mg/L	0.869		98	87-113			
Zinc, dissolved	0.952	0.004	mg/L	0.881		108	72-128			
Dissolved Metals, Batch B6I1498										
Blank (B6I1498-BLK1)				Prepared: 2016-09-26, Analyzed: 2016-09-26						
Aluminum, dissolved	< 0.005	0.005	mg/L							
Antimony, dissolved	< 0.0001	0.0001	mg/L							
Arsenic, dissolved	< 0.0005	0.0005	mg/L							
Barium, dissolved	< 0.005	0.005	mg/L							
Beryllium, dissolved	< 0.0001	0.0001	mg/L							
Bismuth, dissolved	< 0.0001	0.0001	mg/L							
Boron, dissolved	< 0.004	0.004	mg/L							
Cadmium, dissolved	< 0.00001	0.00001	mg/L							
Calcium, dissolved	< 0.2	0.2	mg/L							
Chromium, dissolved	< 0.0005	0.0005	mg/L							
Cobalt, dissolved	< 0.00005	0.00005	mg/L							
Copper, dissolved	< 0.0002	0.0002	mg/L							
Iron, dissolved	< 0.010	0.010	mg/L							
Lead, dissolved	< 0.0001	0.0001	mg/L							
Lithium, dissolved	< 0.0001	0.0001	mg/L							
Magnesium, dissolved	< 0.01	0.01	mg/L							
Manganese, dissolved	< 0.0002	0.0002	mg/L							
Molybdenum, dissolved	< 0.0001	0.0001	mg/L							
Nickel, dissolved	< 0.0002	0.0002	mg/L							
Phosphorus, dissolved	< 0.02	0.02	mg/L							
Potassium, dissolved	< 0.02	0.02	mg/L							
Selenium, dissolved	< 0.0005	0.0005	mg/L							
Silicon, dissolved	< 0.5	0.5	mg/L							
Silver, dissolved	< 0.00005	0.00005	mg/L							
Sodium, dissolved	< 0.02	0.02	mg/L							
Strontium, dissolved	< 0.001	0.001	mg/L							
Sulfur, dissolved	< 1	1	mg/L							
Tellurium, dissolved	< 0.0002	0.0002	mg/L							
Thallium, dissolved	< 0.00002	0.00002	mg/L							
Thorium, dissolved	< 0.0001	0.0001	mg/L							
Tin, dissolved	< 0.0002	0.0002	mg/L							
Titanium, dissolved	< 0.005	0.005	mg/L							
Uranium, dissolved	< 0.00002	0.00002	mg/L							
Vanadium, dissolved	< 0.001	0.001	mg/L							
Zinc, dissolved	< 0.004	0.004	mg/L							
Zirconium, dissolved	< 0.0001	0.0001	mg/L							

REPORTED TO Morrison Hershfield Limited - Burnaby
PROJECT Whistler Landfill - Spring/Fall

WORK ORDER 6091660
REPORTED 2016-09-30

Analyte	Result	MRL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Notes
Dissolved Metals, Batch B6I1498, Continued										
Reference (B6I1498-SRM1)				Prepared: 2016-09-26, Analyzed: 2016-09-26						
Aluminum, dissolved	0.235	0.005	mg/L	0.233		101	58-142			
Antimony, dissolved	0.0447	0.0001	mg/L	0.0430		104	75-125			
Arsenic, dissolved	0.446	0.0005	mg/L	0.438		102	81-119			
Barium, dissolved	3.31	0.005	mg/L	3.35		99	83-117			
Beryllium, dissolved	0.210	0.0001	mg/L	0.213		99	80-120			
Boron, dissolved	1.61	0.004	mg/L	1.74		92	74-117			
Cadmium, dissolved	0.220	0.00001	mg/L	0.224		98	83-117			
Calcium, dissolved	7.8	0.2	mg/L	7.69		101	76-124			
Chromium, dissolved	0.449	0.0005	mg/L	0.437		103	81-119			
Cobalt, dissolved	0.132	0.00005	mg/L	0.128		103	76-124			
Copper, dissolved	0.876	0.0002	mg/L	0.844		104	84-116			
Iron, dissolved	1.33	0.010	mg/L	1.29		103	74-126			
Lead, dissolved	0.111	0.0001	mg/L	0.112		99	72-128			
Lithium, dissolved	0.101	0.0001	mg/L	0.104		97	60-140			
Magnesium, dissolved	7.26	0.01	mg/L	6.92		105	81-119			
Manganese, dissolved	0.351	0.0002	mg/L	0.345		102	84-116			
Molybdenum, dissolved	0.425	0.0001	mg/L	0.426		100	83-117			
Nickel, dissolved	0.859	0.0002	mg/L	0.840		102	74-126			
Phosphorus, dissolved	0.47	0.02	mg/L	0.495		94	68-132			
Potassium, dissolved	3.30	0.02	mg/L	3.19		103	74-126			
Selenium, dissolved	0.0333	0.0005	mg/L	0.0331		101	70-130			
Sodium, dissolved	19.5	0.02	mg/L	19.1		102	72-128			
Strontium, dissolved	0.902	0.001	mg/L	0.916		98	84-113			
Thallium, dissolved	0.0385	0.00002	mg/L	0.0393		98	57-143			
Uranium, dissolved	0.253	0.00002	mg/L	0.266		95	85-115			
Vanadium, dissolved	0.867	0.001	mg/L	0.869		100	87-113			
Zinc, dissolved	0.883	0.004	mg/L	0.881		100	72-128			
Dissolved Metals, Batch B6I1632										
Blank (B6I1632-BLK1)				Prepared: 2016-09-27, Analyzed: 2016-09-28						
Mercury, dissolved	< 0.00002	0.00002	mg/L							
Blank (B6I1632-BLK2)				Prepared: 2016-09-27, Analyzed: 2016-09-28						
Mercury, dissolved	< 0.00002	0.00002	mg/L							
Duplicate (B6I1632-DUP1)			**Source: 6091660-01**	Prepared: 2016-09-27, Analyzed: 2016-09-28						
Mercury, dissolved	< 0.00002	0.00002	mg/L		< 0.00002				20	
Matrix Spike (B6I1632-MS1)			**Source: 6091660-02**	Prepared: 2016-09-27, Analyzed: 2016-09-28						
Mercury, dissolved	0.00022	0.00002	mg/L	0.000250	< 0.00002	86	70-130			
Reference (B6I1632-SRM1)				Prepared: 2016-09-27, Analyzed: 2016-09-28						
Mercury, dissolved	0.00488	0.00002	mg/L	0.00486		100	50-150			
Reference (B6I1632-SRM2)				Prepared: 2016-09-27, Analyzed: 2016-09-28						
Mercury, dissolved	0.00489	0.00002	mg/L	0.00486		101	50-150			
General Parameters, Batch B6I1411										
Blank (B6I1411-BLK1)				Prepared: 2016-09-23, Analyzed: 2016-09-23						
Conductivity (EC)	< 2	2	µS/cm							
Blank (B6I1411-BLK2)				Prepared: 2016-09-23, Analyzed: 2016-09-23						
Conductivity (EC)	< 2	2	µS/cm							

REPORTED TO Morrison Hershfield Limited - Burnaby
PROJECT Whistler Landfill - Spring/Fall

WORK ORDER 6091660
REPORTED 2016-09-30

Analyte	Result	MRL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Notes
General Parameters, Batch B6I1411, Continued										
LCS (B6I1411-BS1)				Prepared: 2016-09-23, Analyzed: 2016-09-23						
Conductivity (EC)	153	2	µS/cm	147		104	88-112			
LCS (B6I1411-BS2)				Prepared: 2016-09-23, Analyzed: 2016-09-23						
Conductivity (EC)	157	2	µS/cm	147		107	88-112			
Reference (B6I1411-SRM1)				Prepared: 2016-09-23, Analyzed: 2016-09-23						
Conductivity (EC)	1010	2	µS/cm	1000		101	90-110			
Reference (B6I1411-SRM2)				Prepared: 2016-09-23, Analyzed: 2016-09-23						
Conductivity (EC)	998	2	µS/cm	1000		100	90-110			
General Parameters, Batch B6I1420										
Duplicate (B6I1420-DUP2)	**Source: 6091660-03**			Prepared: 2016-09-23, Analyzed: 2016-09-23						
pH	6.58	0.01	pH units		6.60			< 1	4	
Reference (B6I1420-SRM1)				Prepared: 2016-09-23, Analyzed: 2016-09-23						
pH	7.07	0.01	pH units	7.02		101	98-102			
Reference (B6I1420-SRM2)				Prepared: 2016-09-23, Analyzed: 2016-09-23						
pH	7.03	0.01	pH units	7.02		100	98-102			
General Parameters, Batch B6I1523										
Blank (B6I1523-BLK1)				Prepared: 2016-09-27, Analyzed: 2016-09-27						
Chemical Oxygen Demand	< 5	20	mg/L							
Blank (B6I1523-BLK2)				Prepared: 2016-09-27, Analyzed: 2016-09-27						
Chemical Oxygen Demand	< 5	20	mg/L							
LCS (B6I1523-BS1)				Prepared: 2016-09-27, Analyzed: 2016-09-27						
Chemical Oxygen Demand	56	20	mg/L	50.0		111	85-115			
LCS (B6I1523-BS2)				Prepared: 2016-09-27, Analyzed: 2016-09-27						
Chemical Oxygen Demand	50	20	mg/L	50.0		100	85-115			
General Parameters, Batch B6I1545										
Blank (B6I1545-BLK1)				Prepared: 2016-09-26, Analyzed: 2016-09-26						
Alkalinity, Total (as CaCO3)	< 1	2	mg/L							
Alkalinity, Phenolphthalein (as CaCO3)	< 1	2	mg/L							
Alkalinity, Bicarbonate (as CaCO3)	< 1	2	mg/L							
Alkalinity, Carbonate (as CaCO3)	< 1	2	mg/L							
Alkalinity, Hydroxide (as CaCO3)	< 1	2	mg/L							
Blank (B6I1545-BLK2)				Prepared: 2016-09-26, Analyzed: 2016-09-26						
Alkalinity, Total (as CaCO3)	< 1	2	mg/L							
Alkalinity, Phenolphthalein (as CaCO3)	< 1	2	mg/L							
Alkalinity, Bicarbonate (as CaCO3)	< 1	2	mg/L							
Alkalinity, Carbonate (as CaCO3)	< 1	2	mg/L							
Alkalinity, Hydroxide (as CaCO3)	< 1	2	mg/L							
LCS (B6I1545-BS1)				Prepared: 2016-09-26, Analyzed: 2016-09-26						
Alkalinity, Total (as CaCO3)	100	2	mg/L	100		100	96-108			

REPORTED TO Morrison Hershfield Limited - Burnaby
PROJECT Whistler Landfill - Spring/Fall

WORK ORDER 6091660
REPORTED 2016-09-30

Analyte	Result	MRL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Notes
General Parameters, Batch B6I1545, Continued										
LCS (B6I1545-BS2)				Prepared: 2016-09-26, Analyzed: 2016-09-26						
Alkalinity, Total (as CaCO3)	100	2	mg/L	100		100	96-108			
General Parameters, Batch B6I1567										
Blank (B6I1567-BLK1)				Prepared: 2016-09-27, Analyzed: 2016-09-27						
Alkalinity, Total (as CaCO3)	< 1	2	mg/L							
Alkalinity, Phenolphthalein (as CaCO3)	< 1	2	mg/L							
Alkalinity, Bicarbonate (as CaCO3)	< 1	2	mg/L							
Alkalinity, Carbonate (as CaCO3)	< 1	2	mg/L							
Alkalinity, Hydroxide (as CaCO3)	< 1	2	mg/L							
LCS (B6I1567-BS1)				Prepared: 2016-09-27, Analyzed: 2016-09-27						
Alkalinity, Total (as CaCO3)	100	2	mg/L	100		100	96-108			
General Parameters, Batch B6I1580										
Blank (B6I1580-BLK1)				Prepared: 2016-09-27, Analyzed: 2016-09-27						
Ammonia, Total (as N)	< 0.020	0.005	mg/L							
Blank (B6I1580-BLK2)				Prepared: 2016-09-27, Analyzed: 2016-09-27						
Ammonia, Total (as N)	< 0.020	0.005	mg/L							
Blank (B6I1580-BLK3)				Prepared: 2016-09-27, Analyzed: 2016-09-27						
Ammonia, Total (as N)	< 0.020	0.005	mg/L							
LCS (B6I1580-BS1)				Prepared: 2016-09-27, Analyzed: 2016-09-27						
Ammonia, Total (as N)	1.03	0.005	mg/L	1.00		103	86-111			
LCS (B6I1580-BS2)				Prepared: 2016-09-27, Analyzed: 2016-09-27						
Ammonia, Total (as N)	1.00	0.005	mg/L	1.00		100	86-111			
LCS (B6I1580-BS3)				Prepared: 2016-09-27, Analyzed: 2016-09-27						
Ammonia, Total (as N)	1.02	0.005	mg/L	1.00		102	86-111			
General Parameters, Batch B6I1589										
Blank (B6I1589-BLK1)				Prepared: 2016-09-27, Analyzed: 2016-09-27						
Solids, Total Suspended	< 2	2	mg/L							
Blank (B6I1589-BLK2)				Prepared: 2016-09-27, Analyzed: 2016-09-27						
Solids, Total Suspended	< 2	2	mg/L							
LCS (B6I1589-BS1)				Prepared: 2016-09-27, Analyzed: 2016-09-27						
Solids, Total Suspended	48	2	mg/L	49.4		98	83-107			
LCS (B6I1589-BS2)				Prepared: 2016-09-27, Analyzed: 2016-09-27						
Solids, Total Suspended	51	2	mg/L	52.2		97	83-107			
General Parameters, Batch B6I1591										
Duplicate (B6I1591-DUP1)				**Source: 6091660-10**	Prepared: 2016-09-27, Analyzed: 2016-09-27					
pH	6.23	0.01	pH units		6.18			< 1	4	
Reference (B6I1591-SRM1)				Prepared: 2016-09-27, Analyzed: 2016-09-27						
pH	7.04	0.01	pH units	7.02		100	98-102			

REPORTED TO Morrison Hershfield Limited - Burnaby
PROJECT Whistler Landfill - Spring/Fall

WORK ORDER 6091660
REPORTED 2016-09-30

Analyte	Result	MRL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Notes
General Parameters, Batch B6I1655										
Blank (B6I1655-BLK1)				Prepared: 2016-09-28, Analyzed: 2016-09-28						
Nitrogen, Total Kjeldahl	< 0.05	0.05	mg/L							
Blank (B6I1655-BLK2)				Prepared: 2016-09-28, Analyzed: 2016-09-28						
Nitrogen, Total Kjeldahl	< 0.05	0.05	mg/L							
LCS (B6I1655-BS1)				Prepared: 2016-09-28, Analyzed: 2016-09-28						
Nitrogen, Total Kjeldahl	9.92	0.05	mg/L	10.0		99	80-120			
LCS (B6I1655-BS2)				Prepared: 2016-09-28, Analyzed: 2016-09-28						
Nitrogen, Total Kjeldahl	9.89	0.05	mg/L	10.0		99	80-120			
Duplicate (B6I1655-DUP2)		**Source: 6091660-07**		Prepared: 2016-09-28, Analyzed: 2016-09-28						
Nitrogen, Total Kjeldahl	0.08	0.05	mg/L		0.08				16	
Matrix Spike (B6I1655-MS2)		**Source: 6091660-07**		Prepared: 2016-09-28, Analyzed: 2016-09-28						
Nitrogen, Total Kjeldahl	1.04	0.05	mg/L	1.00	0.08	96	65-135			
General Parameters, Batch B6I1756										
Blank (B6I1756-BLK1)				Prepared: 2016-09-29, Analyzed: 2016-09-29						
Conductivity (EC)	< 2	2	µS/cm							
LCS (B6I1756-BS1)				Prepared: 2016-09-29, Analyzed: 2016-09-29						
Conductivity (EC)	148	2	µS/cm	147		101	88-112			
Reference (B6I1756-SRM1)				Prepared: 2016-09-29, Analyzed: 2016-09-29						
Conductivity (EC)	1010	2	µS/cm	1000		101	90-110			
Polycyclic Aromatic Hydrocarbons (PAH), Batch B6I1512										
Blank (B6I1512-BLK1)				Prepared: 2016-09-27, Analyzed: 2016-09-27						
Acenaphthene	< 0.05	0.05	µg/L							
Acenaphthylene	< 0.20	0.20	µg/L							
Acridine	< 0.10	0.10	µg/L							
Anthracene	< 0.01	0.01	µg/L							
Benz (a) anthracene	< 0.01	0.01	µg/L							
Benzo (a) pyrene	< 0.01	0.01	µg/L							
Benzo (b) fluoranthene	< 0.05	0.05	µg/L							
Benzo (g,h,i) perylene	< 0.05	0.05	µg/L							
Benzo (k) fluoranthene	< 0.05	0.05	µg/L							
Chrysene	< 0.05	0.05	µg/L							
Dibenz (a,h) anthracene	< 0.05	0.05	µg/L							
Fluoranthene	< 0.03	0.03	µg/L							
Fluorene	< 0.05	0.05	µg/L							
Indeno (1,2,3-cd) pyrene	< 0.05	0.05	µg/L							
Naphthalene	< 0.20	0.20	µg/L							
Phenanthrene	< 0.10	0.10	µg/L							
Pyrene	< 0.02	0.02	µg/L							
Quinoline	< 0.10	0.10	µg/L							
Surrogate: Acridine-d9	*2.57*		*µg/L*	4.44		*58*	*60-130*			*S02*
Surrogate: Naphthalene-d8	*3.30*		*µg/L*	4.44		*74*	*60-130*			
Surrogate: Perylene-d12	*4.55*		*µg/L*	4.44		*102*	*60-130*			
LCS (B6I1512-BS1)				Prepared: 2016-09-27, Analyzed: 2016-09-27						
Acenaphthene	3.81	0.05	µg/L	4.44		86	70-130			
Acenaphthylene	3.61	0.20	µg/L	4.44		81	70-130			

REPORTED TO	Morrison Hershfield Limited - Burnaby	**WORK ORDER**	6091660
PROJECT	Whistler Landfill - Spring/Fall	**REPORTED**	2016-09-30

Analyte	Result	MRL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Notes
Polycyclic Aromatic Hydrocarbons (PAH), Batch B6I1512, Continued										
LCS (B6I1512-BS1), Continued				Prepared: 2016-09-27, Analyzed: 2016-09-27						
Acridine	3.17	0.10	µg/L	4.44		71	60-130			
Anthracene	3.94	0.01	µg/L	4.44		89	70-130			
Benz (a) anthracene	3.76	0.01	µg/L	4.44		85	70-130			
Benzo (a) pyrene	4.55	0.01	µg/L	4.44		102	70-130			
Benzo (b) fluoranthene	4.09	0.05	µg/L	4.44		92	70-130			
Benzo (g,h,i) perylene	4.74	0.05	µg/L	4.44		107	70-130			
Benzo (k) fluoranthene	4.42	0.05	µg/L	4.44		99	70-130			
Chrysene	3.94	0.05	µg/L	4.44		89	70-130			
Dibenz (a,h) anthracene	4.72	0.05	µg/L	4.44		106	70-130			
Fluoranthene	4.09	0.03	µg/L	4.44		92	70-130			
Fluorene	3.63	0.05	µg/L	4.44		82	70-130			
Indeno (1,2,3-cd) pyrene	4.88	0.05	µg/L	4.44		110	70-130			
Naphthalene	3.88	0.20	µg/L	4.44		87	70-130			
Phenanthrene	4.09	0.10	µg/L	4.44		92	70-130			
Pyrene	4.17	0.02	µg/L	4.44		94	70-130			
Quinoline	4.18	0.10	µg/L	4.44		94	70-130			
Surrogate: Acridine-d9	*3.06*		*µg/L*	4.44		*69*	*60-130*			
Surrogate: Naphthalene-d8	*3.97*		*µg/L*	4.44		*89*	*60-130*			
Surrogate: Perylene-d12	*5.22*		*µg/L*	4.44		*118*	*60-130*			
Total Metals, Batch B6I1381										
Blank (B6I1381-BLK1)				Prepared: 2016-09-23, Analyzed: 2016-09-24						
Aluminum, total	< 0.005	0.005	mg/L							
Antimony, total	< 0.0001	0.0001	mg/L							
Arsenic, total	< 0.0005	0.0005	mg/L							
Barium, total	< 0.005	0.005	mg/L							
Beryllium, total	< 0.0001	0.0001	mg/L							
Bismuth, total	< 0.0001	0.0001	mg/L							
Boron, total	< 0.004	0.004	mg/L							
Cadmium, total	< 0.00001	0.00001	mg/L							
Calcium, total	< 0.2	0.2	mg/L							
Chromium, total	< 0.0005	0.0005	mg/L							
Cobalt, total	< 0.00005	0.00005	mg/L							
Copper, total	< 0.0002	0.0002	mg/L							
Iron, total	< 0.01	0.01	mg/L							
Lead, total	< 0.0001	0.0001	mg/L							
Lithium, total	< 0.0001	0.0001	mg/L							
Magnesium, total	< 0.01	0.01	mg/L							
Manganese, total	< 0.0002	0.0002	mg/L							
Molybdenum, total	< 0.0001	0.0001	mg/L							
Nickel, total	< 0.0002	0.0002	mg/L							
Phosphorus, total	< 0.02	0.02	mg/L							
Potassium, total	< 0.02	0.02	mg/L							
Selenium, total	< 0.0005	0.0005	mg/L							
Silicon, total	< 0.5	0.5	mg/L							
Silver, total	< 0.00005	0.00005	mg/L							
Sodium, total	< 0.02	0.02	mg/L							
Strontium, total	< 0.001	0.001	mg/L							
Sulfur, total	< 1	1	mg/L							
Tellurium, total	< 0.0002	0.0002	mg/L							
Thallium, total	< 0.00002	0.00002	mg/L							
Thorium, total	< 0.0001	0.0001	mg/L							
Tin, total	< 0.0002	0.0002	mg/L							
Titanium, total	< 0.005	0.005	mg/L							
Uranium, total	< 0.00002	0.00002	mg/L							

REPORTED TO Morrison Hershfield Limited - Burnaby
PROJECT Whistler Landfill - Spring/Fall

WORK ORDER 6091660
REPORTED 2016-09-30

Analyte	Result	MRL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Notes
Total Metals, Batch B6I1381, Continued										
Blank (B6I1381-BLK1), Continued				Prepared: 2016-09-23, Analyzed: 2016-09-24						
Vanadium, total	< 0.001	0.001	mg/L							
Zinc, total	< 0.004	0.004	mg/L							
Zirconium, total	< 0.0001	0.0001	mg/L							
Reference (B6I1381-SRM1)				Prepared: 2016-09-23, Analyzed: 2016-09-24						
Aluminum, total	0.314	0.005	mg/L	0.303		104	81-129			
Antimony, total	0.0549	0.0001	mg/L	0.0511		107	88-114			
Arsenic, total	0.129	0.0005	mg/L	0.118		110	88-114			
Barium, total	0.798	0.005	mg/L	0.823		97	72-104			
Beryllium, total	0.0458	0.0001	mg/L	0.0496		92	76-131			
Boron, total	2.92	0.004	mg/L	3.45		85	75-121			
Cadmium, total	0.0515	0.00001	mg/L	0.0495		104	89-111			
Calcium, total	11.4	0.2	mg/L	11.6		98	86-121			
Chromium, total	0.263	0.0005	mg/L	0.250		105	89-114			
Cobalt, total	0.0413	0.00005	mg/L	0.0377		109	91-113			
Copper, total	0.540	0.0002	mg/L	0.486		111	91-115			
Iron, total	0.54	0.01	mg/L	0.488		110	77-124			
Lead, total	0.206	0.0001	mg/L	0.204		101	92-113			
Lithium, total	0.369	0.0001	mg/L	0.403		91	85-115			
Magnesium, total	4.14	0.01	mg/L	3.79		109	78-120			
Manganese, total	0.112	0.0002	mg/L	0.109		103	90-114			
Molybdenum, total	0.206	0.0001	mg/L	0.198		104	90-111			
Nickel, total	0.265	0.0002	mg/L	0.249		107	90-111			
Phosphorus, total	0.22	0.02	mg/L	0.227		97	85-115			
Potassium, total	7.82	0.02	mg/L	7.21		109	84-113			
Selenium, total	0.129	0.0005	mg/L	0.121		107	85-115			
Sodium, total	8.07	0.02	mg/L	7.54		107	82-123			
Strontium, total	0.376	0.001	mg/L	0.375		100	88-112			
Thallium, total	0.0823	0.00002	mg/L	0.0805		102	91-114			
Uranium, total	0.0308	0.00002	mg/L	0.0306		101	85-120			
Vanadium, total	0.401	0.001	mg/L	0.386		104	86-111			
Zinc, total	2.50	0.004	mg/L	2.49		101	85-111			
Total Metals, Batch B6I1634										
Blank (B6I1634-BLK1)				Prepared: 2016-09-27, Analyzed: 2016-09-28						
Mercury, total	< 0.00002	0.00002	mg/L							
Duplicate (B6I1634-DUP1)			**Source: 6091660-06**	Prepared: 2016-09-27, Analyzed: 2016-09-28						
Mercury, total	< 0.00002	0.00002	mg/L		< 0.00002				20	
Matrix Spike (B6I1634-MS1)			**Source: 6091660-08**	Prepared: 2016-09-27, Analyzed: 2016-09-28						
Mercury, total	0.00025	0.00002	mg/L	0.000250	< 0.00002	99	70-130			
Reference (B6I1634-SRM1)				Prepared: 2016-09-27, Analyzed: 2016-09-28						
Mercury, total	0.00475	0.00002	mg/L	0.00486		98	50-150			
Volatile Organic Compounds (VOC), Batch B6I1451										
Blank (B6I1451-BLK1)				Prepared: 2016-09-24, Analyzed: 2016-09-24						
Acetone	< 10.0	10.0	µg/L							
Benzene	< 0.5	0.5	µg/L							
Bromodichloromethane	< 1.0	1.0	µg/L							
Bromoform	< 1.0	1.0	µg/L							
Bromomethane	< 2.0	2.0	µg/L							
2-Butanone (MEK)	< 5.0	5.0	µg/L							

REPORTED TO	Morrison Hershfield Limited - Burnaby	**WORK ORDER**	6091660
PROJECT	Whistler Landfill - Spring/Fall	**REPORTED**	2016-09-30

Analyte	Result	MRL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Notes
Volatile Organic Compounds (VOC), Batch B6I1451, Continued										
Blank (B6I1451-BLK1), Continued				Prepared: 2016-09-24, Analyzed: 2016-09-24						
Carbon tetrachloride	< 1.0	1.0	µg/L							
Chlorobenzene	< 1.0	1.0	µg/L							
Chloroethane	< 2.0	2.0	µg/L							
Chloroform	< 1.0	1.0	µg/L							
Chloromethane	< 2.0	2.0	µg/L							
Dibromochloromethane	< 1.0	1.0	µg/L							
Dibromomethane	< 1.0	1.0	µg/L							
1,3-Dichlorobenzene	< 1.0	1.0	µg/L							
1,4-Dichlorobenzene	< 1.0	1.0	µg/L							
1,1-Dichloroethane	< 1.0	1.0	µg/L							
1,2-Dichloroethane	< 1.0	1.0	µg/L							
1,1-Dichloroethene	< 1.0	1.0	µg/L							
cis-1,2-Dichloroethene	< 1.0	1.0	µg/L							
trans-1,2-Dichloroethene	< 1.0	1.0	µg/L							
1,2-Dichloropropane	< 1.0	1.0	µg/L							
cis-1,3-Dichloropropene	< 1.0	1.0	µg/L							
trans-1,3-Dichloropropene	< 1.0	1.0	µg/L							
Ethylbenzene	< 1.0	1.0	µg/L							
Methyl tert-butyl ether	< 1.0	1.0	µg/L							
Methylene chloride	< 3.0	3.0	µg/L							
4-Methyl-2-Pentanone (MIBK)	< 10.0	10.0	µg/L							
Styrene	< 1.0	1.0	µg/L							
1,1,1,2-Tetrachloroethane	< 1.0	1.0	µg/L							
1,1,2,2-Tetrachloroethane	< 1.0	1.0	µg/L							
Tetrachloroethene	< 1.0	1.0	µg/L							
Toluene	< 1.0	1.0	µg/L							
1,1,1-Trichloroethane	< 1.0	1.0	µg/L							
1,1,2-Trichloroethane	< 1.0	1.0	µg/L							
Trichloroethene	< 1.0	1.0	µg/L							
Trichlorofluoromethane	< 1.0	1.0	µg/L							
Vinyl chloride	< 2.0	2.0	µg/L							
m,p-Xylene	< 1.0	1.0	µg/L							
o-Xylene	< 1.0	1.0	µg/L							
Xylenes (total)	< 2.0	2.0	µg/L							
1,2-Dibromoethane	< 0.3	0.3	µg/L							
1,2-Dichlorobenzene	< 0.5	0.5	µg/L							
Surrogate: Toluene-d8	*21.3*		*µg/L*	25.0		*85*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*21.0*		*µg/L*	25.0		*84*	*70-130*			
Surrogate: 1,4-Dichlorobenzene-d4	*18.4*		*µg/L*	25.0		*74*	*70-130*			
LCS (B6I1451-BS1)				Prepared: 2016-09-24, Analyzed: 2016-09-24						
Acetone	16.1	10.0	µg/L	20.0		81	70-130			
Benzene	21.3	0.5	µg/L	20.0		107	70-130			
Bromodichloromethane	20.5	1.0	µg/L	20.0		103	70-130			
Bromoform	18.8	1.0	µg/L	20.0		94	70-130			
Bromomethane	16.3	2.0	µg/L	20.0		82	70-130			
2-Butanone (MEK)	25.9	5.0	µg/L	20.0		130	70-130			
Carbon tetrachloride	21.0	1.0	µg/L	20.0		105	70-130			
Chlorobenzene	21.3	1.0	µg/L	20.0		107	70-130			
Chloroethane	16.2	2.0	µg/L	20.0		81	70-130			
Chloroform	21.6	1.0	µg/L	20.0		108	70-130			
Chloromethane	20.0	2.0	µg/L	20.0		100	70-130			
Dibromochloromethane	18.3	1.0	µg/L	20.0		92	70-130			
Dibromomethane	19.0	1.0	µg/L	20.0		95	70-130			
1,3-Dichlorobenzene	22.0	1.0	µg/L	20.0		110	70-130			
1,4-Dichlorobenzene	21.7	1.0	µg/L	20.0		108	70-130			

REPORTED TO Morrison Hershfield Limited - Burnaby
PROJECT Whistler Landfill - Spring/Fall

WORK ORDER 6091660
REPORTED 2016-09-30

Analyte	Result	MRL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Notes
Volatile Organic Compounds (VOC), Batch B6I1451, Continued										
LCS (B6I1451-BS1), Continued				Prepared: 2016-09-24, Analyzed: 2016-09-24						
1,1-Dichloroethane	21.6	1.0	µg/L	20.0		108	70-130			
1,2-Dichloroethane	21.1	1.0	µg/L	20.0		106	70-130			
1,1-Dichloroethene	21.6	1.0	µg/L	20.0		108	70-130			
cis-1,2-Dichloroethene	18.3	1.0	µg/L	20.0		91	70-130			
trans-1,2-Dichloroethene	18.8	1.0	µg/L	20.0		94	70-130			
1,2-Dichloropropane	20.1	1.0	µg/L	20.0		101	70-130			
cis-1,3-Dichloropropene	15.8	1.0	µg/L	20.0		79	70-130			
trans-1,3-Dichloropropene	16.3	1.0	µg/L	20.0		82	70-130			
Ethylbenzene	21.7	1.0	µg/L	20.0		108	70-130			
Methyl tert-butyl ether	16.2	1.0	µg/L	20.0		81	70-130			
Methylene chloride	20.0	3.0	µg/L	20.0		100	70-130			
4-Methyl-2-Pentanone (MIBK)	13.9	10.0	µg/L	20.0		70	70-130			
Styrene	20.7	1.0	µg/L	20.0		103	70-130			
1,1,1,2-Tetrachloroethane	19.9	1.0	µg/L	20.0		100	70-130			
1,1,2,2-Tetrachloroethane	20.8	1.0	µg/L	20.0		104	70-130			
Tetrachloroethene	20.4	1.0	µg/L	20.0		102	70-130			
Toluene	21.0	1.0	µg/L	20.0		105	70-130			
1,1,1-Trichloroethane	21.4	1.0	µg/L	20.0		107	70-130			
1,1,2-Trichloroethane	20.9	1.0	µg/L	20.0		104	70-130			
Trichloroethene	21.8	1.0	µg/L	20.0		109	70-130			
Trichlorofluoromethane	19.7	1.0	µg/L	20.0		99	70-130			
Vinyl chloride	19.8	2.0	µg/L	20.0		99	70-130			
m,p-Xylene	41.4	1.0	µg/L	40.0		103	70-130			
o-Xylene	21.0	1.0	µg/L	20.0		105	70-130			
Xylenes (total)	62.4	2.0	µg/L	60.0		104	70-130			
1,2-Dibromoethane	18.2	0.3	µg/L	20.0		91	70-130			
1,2-Dichlorobenzene	21.3	0.5	µg/L	20.0		106	70-130			
Surrogate: Toluene-d8	*22.6*		*µg/L*	25.0		*90*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*22.7*		*µg/L*	25.0		*91*	*70-130*			
Surrogate: 1,4-Dichlorobenzene-d4	*24.6*		*µg/L*	25.0		*98*	*70-130*			
Duplicate (B6I1451-DUP1)		**Source: 6091660-11**		Prepared: 2016-09-24, Analyzed: 2016-09-24						
Acetone	< 10.0	10.0	µg/L		< 10.0				20	
Benzene	< 0.5	0.5	µg/L		< 0.5				20	
Bromodichloromethane	< 1.0	1.0	µg/L		< 1.0				20	
Bromoform	< 1.0	1.0	µg/L		< 1.0				20	
Bromomethane	< 2.0	2.0	µg/L		< 2.0				20	
2-Butanone (MEK)	< 5.0	5.0	µg/L		< 5.0				20	
Carbon tetrachloride	< 1.0	1.0	µg/L		< 1.0				20	
Chlorobenzene	< 1.0	1.0	µg/L		< 1.0				20	
Chloroethane	< 2.0	2.0	µg/L		< 2.0				20	
Chloroform	< 1.0	1.0	µg/L		< 1.0				20	
Chloromethane	< 2.0	2.0	µg/L		< 2.0				20	
Dibromochloromethane	< 1.0	1.0	µg/L		< 1.0				20	
Dibromomethane	< 1.0	1.0	µg/L		< 1.0				20	
1,3-Dichlorobenzene	< 1.0	1.0	µg/L		< 1.0				20	
1,4-Dichlorobenzene	< 1.0	1.0	µg/L		< 1.0				20	
1,1-Dichloroethane	< 1.0	1.0	µg/L		< 1.0				20	
1,2-Dichloroethane	< 1.0	1.0	µg/L		< 1.0				20	
1,1-Dichloroethene	< 1.0	1.0	µg/L		< 1.0				20	
cis-1,2-Dichloroethene	< 1.0	1.0	µg/L		< 1.0				20	
trans-1,2-Dichloroethene	< 1.0	1.0	µg/L		< 1.0				20	
1,2-Dichloropropane	< 1.0	1.0	µg/L		< 1.0				20	
cis-1,3-Dichloropropene	< 1.0	1.0	µg/L		< 1.0				20	
trans-1,3-Dichloropropene	< 1.0	1.0	µg/L		< 1.0				20	
Ethylbenzene	< 1.0	1.0	µg/L		< 1.0				20	

REPORTED TO Morrison Hershfield Limited - Burnaby
PROJECT Whistler Landfill - Spring/Fall

WORK ORDER 6091660
REPORTED 2016-09-30

Analyte	Result	MRL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Notes
Volatile Organic Compounds (VOC), Batch B6I1451, Continued										
Duplicate (B6I1451-DUP1), Continued		**Source: 6091660-11**		Prepared: 2016-09-24, Analyzed: 2016-09-24						
Methyl tert-butyl ether	< 1.0	1.0	µg/L		< 1.0				20	
Methylene chloride	< 3.0	3.0	µg/L		< 3.0				20	
4-Methyl-2-Pentanone (MIBK)	< 10.0	10.0	µg/L		< 10.0				20	
Styrene	< 1.0	1.0	µg/L		< 1.0				20	
1,1,1,2-Tetrachloroethane	< 1.0	1.0	µg/L		< 1.0				20	
1,1,2,2-Tetrachloroethane	< 1.0	1.0	µg/L		< 1.0				20	
Tetrachloroethene	< 1.0	1.0	µg/L		< 1.0				20	
Toluene	< 1.0	1.0	µg/L		< 1.0				20	
1,1,1-Trichloroethane	< 1.0	1.0	µg/L		< 1.0				20	
1,1,2-Trichloroethane	< 1.0	1.0	µg/L		< 1.0				20	
Trichloroethene	< 1.0	1.0	µg/L		< 1.0				20	
Trichlorofluoromethane	< 1.0	1.0	µg/L		< 1.0				20	
Vinyl chloride	< 2.0	2.0	µg/L		< 2.0				20	
m,p-Xylene	< 1.0	1.0	µg/L		< 1.0				20	
o-Xylene	< 1.0	1.0	µg/L		< 1.0				20	
Xylenes (total)	< 2.0	2.0	µg/L		< 2.0				20	
1,2-Dibromoethane	< 0.3	0.3	µg/L		< 0.3				20	
1,2-Dichlorobenzene	< 0.5	0.5	µg/L		< 0.5				20	
Surrogate: Toluene-d8	*22.0*		*µg/L*	25.0		*88*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*22.4*		*µg/L*	25.0		*90*	*70-130*			
Surrogate: 1,4-Dichlorobenzene-d4	*21.5*		*µg/L*	25.0		*86*	*70-130*			

QC Qualifiers:

S02	Surrogate recovery outside of control limits. Data accepted based on acceptable recovery of other surrogates.
SPK	The recovery of this analyte was outside of established control limits.

CERTIFICATE OF ANALYSIS

REPORTED TO	Morrison Hershfield Limited - Burnaby 310 - 4321 Still Creek Drive Burnaby, BC V5C 6S7	**TEL** **FAX**	(604) 454-0402 (604) 454-0403
ATTENTION	Josie Gilson		

WORK ORDER	6121583		
PO NUMBER		**RECEIVED / TEMP**	2016-12-23 11:45 / 7°C
PROJECT	Whistler Landfill - Summer/Winter	**REPORTED**	2017-01-04
PROJECT INFO		**COC NUMBER**	B54632

General Comments:

CARO Analytical Services employs methods which are conducted according to procedures accepted by appropriate regulatory agencies, and/or are conducted in accordance with recognized professional standards using accepted testing methodologies and quality control efforts, except where otherwise agreed to by the client.

The results in this report apply to the samples analyzed in accordance with the Chain of Custody or Sample Requisition document. This analytical report must be reproduced in its entirety. CARO is not responsible for any loss or damage resulting directly or indirectly from error or omission in the conduct of testing. Liability is limited to the cost of analysis. Samples will be disposed of 30 days after the test report has been issued unless otherwise agreed to in writing.

Authorized By: **Brent Coates, B.Sc.**
Division Manager, Richmond

If you have any questions or concerns, please contact your Account Manager:
Jeffery Lopes (jlopes@caro.ca)

ANALYSIS INFORMATION

REPORTED TO	Morrison Hershfield Limited - Burnaby	**WORK ORDER**	6121583
PROJECT	Whistler Landfill - Summer/Winter	**REPORTED**	2017-01-04

Analysis Description	Method Reference	Technique	Location
Alkalinity in Water	APHA 2320 B*	Titration with H2SO4	Kelowna
Ammonia, Total in Water	APHA 4500-NH3 G*	Automated Colorimetry (Phenate)	Kelowna
Anions by IC in Water	APHA 4110 B	Ion Chromatography with Chemical Suppression of Eluent Conductivity	Kelowna
Chemical Oxygen Demand in Water	APHA 5220 D*	Closed Reflux, Colorimetry	Kelowna
Conductivity in Water	APHA 2510 B	Conductivity Meter	Kelowna
Dissolved Metals by ICPMS in Water	APHA 3030 B / APHA 3125 B	0.45 µm Filtration / Inductively Coupled Plasma Mass Spectrometry (ICP-MS)	Richmond
EPH in Water	EPA 3511* / BCMOE EPHw	Hexane MicroExtraction (Base/Neutral) / Gas Chromatography (GC-FID)	Richmond
Hardness (as CaCO3) in Water	APHA 2340 B	Calculation: 2.497 [diss Ca] + 4.118 [diss Mg]	N/A
Hardness (as CaCO3) in Water	APHA 2340 B*	Calculation: 2.497 [total Ca] + 4.118 [total Mg] (Estimated)	N/A
HEPHw in Water	BCMOE LEPH/HEPH	Calculation	N/A
LEPHw in Water	BCMOE LEPH/HEPH	Calculation	N/A
Mercury, dissolved by CVAFS in Water	EPA 245.7*	BrCl2 Oxidation / Cold Vapor Atomic Fluorescence Spectrometry (CVAFS)	Richmond
Mercury, total by CVAFS in Water	EPA 245.7*	BrCl2 Oxidation / Cold Vapor Atomic Fluorescence Spectrometry (CVAFS)	Richmond
Nitrate+Nitrite by Colorimetry in Water	APHA 4500-NO3- F	Automated Colorimetry (Cadmium Reduction)	Kelowna
Nitrite by Colorimetry in Water	APHA 4500-NO2 B	Colorimetry	Richmond
Nitrogen, Total Kjeldahl in Water	APHA 4500-Norg D*	Block Digestion and Flow Injection Analysis	Kelowna
pH in Water	APHA 4500-H+ B	Electrometry	Kelowna
Phosphorus, Total by Colorimetry in Water	APHA 4500-P B.5* / APHA 4500-P F	Persulfate Digestion / Automated Colorimetry (Ascorbic Acid)	Kelowna
Polycyclic Aromatic Hydrocarbons in Water	EPA 3511* / EPA 8270D	Hexane MicroExtraction (Base/Neutral) / GC-MS (SIM)	Richmond
Solids, Total Suspended in Water	APHA 2540 D*	Gravimetry (Dried at 103-105C)	Richmond
Total Metals by ICPMS in Water	APHA 3030E* / APHA 3125 B	HNO3+HCl Hot Block Digestion / Inductively Coupled Plasma Mass Spectrometry (ICP-MS)	Richmond
Volatile Organic Compounds in Water	EPA 5030B / EPA 8260B	Purge&Trap / GC-MS (SIM)	Richmond

Note: An asterisk in the Method Reference indicates that the CARO method has been modified from the reference method

Method Reference Descriptions:

APHA	Standard Methods for the Examination of Water and Wastewater, 22nd Edition, American Public Health Association/American Water Works Association/Water Environment Federation
BCMOE	British Columbia Environmental Laboratory Manual, 2015, British Columbia Ministry of Environment
EPA	United States Environmental Protection Agency Test Methods

ANALYSIS INFORMATION

REPORTED TO	Morrison Hershfield Limited - Burnaby	**WORK ORDER**	6121583
PROJECT	Whistler Landfill - Summer/Winter	**REPORTED**	2017-01-04

Glossary of Terms:

MRL	Method Reporting Limit
<	Less than the Reported Detection Limit (RDL) - the RDL may be higher than the MRL due to various factors such as dilutions, limited sample volume, high moisture, or interferences
mg/L	Milligrams per litre
pH units	pH < 7 = acidic, ph > 7 = basic
µg/L	Micrograms per litre
µS/cm	Microsiemens per centimetre

Standards / Guidelines Referenced in this Report:

BC CSR Schedule 4/5/6/10/11 Residential/Aquatic Water

Website: http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/375_96_00

Note: In some cases, the values displayed on the report represent the lowest guideline and are to be verified by the end user

REPORTED TO	Morrison Hershfield Limited - Burnaby	**WORK ORDER**	6121583
PROJECT	Whistler Landfill - Summer/Winter	**REPORTED**	2017-01-04

Analyte	Result / *Recovery*	Standard / Guideline	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: MW2D (6121583-01) [Water] Sampled: 2016-12-22 00:00							
Anions							
Bromide	< 0.10	N/A	0.10	mg/L	N/A	2016-12-29	
Chloride	**33.7**	1500	0.10	mg/L	N/A	2016-12-29	
Fluoride	< 0.10	2	0.1	mg/L	N/A	2016-12-29	
Nitrate+Nitrite (as N)	**0.016**	400	0.005	mg/L	N/A	2016-12-30	
Nitrite (as N)	< 0.005	0.2	0.005	mg/L	2016-12-23	2016-12-23	
Sulfate	**261**	1000	1.0	mg/L	N/A	2016-12-29	
General Parameters							
Alkalinity, Total (as CaCO3)	**236**	N/A	2	mg/L	N/A	2017-01-03	
Alkalinity, Phenolphthalein (as CaCO3)	< 1	N/A	2	mg/L	N/A	2017-01-03	
Alkalinity, Bicarbonate (as CaCO3)	**236**	N/A	2	mg/L	N/A	2017-01-03	
Alkalinity, Carbonate (as CaCO3)	< 1	N/A	2	mg/L	N/A	2017-01-03	
Alkalinity, Hydroxide (as CaCO3)	< 1	N/A	2	mg/L	N/A	2017-01-03	
Ammonia, Total (as N)	**10.3**	1.31	0.02	mg/L	N/A	2016-12-29	
Chemical Oxygen Demand	**24**	N/A	20	mg/L	N/A	2017-01-03	
Conductivity (EC)	**1030**	N/A	2	µS/cm	N/A	2017-01-03	
Nitrogen, Total Kjeldahl	**13.3**	N/A	0.05	mg/L	2016-12-29	2016-12-30	
pH	**6.81**	N/A	0.01	pH units	N/A	2017-01-03	HT2
Phosphorus, Total (as P)	**0.435**	N/A	0.002	mg/L	2016-12-29	2016-12-30	
Solids, Total Suspended	**309**	N/A	2	mg/L	N/A	2016-12-29	
Calculated Parameters							
Hardness, Total (as CaCO3)	**445**	N/A	0.50	mg/L	N/A	N/A	
Nitrate (as N)	**0.016**	400	0.010	mg/L	N/A	N/A	
Nitrogen, Total	**13.3**	N/A	0.500	mg/L	N/A	N/A	
Dissolved Metals							
Aluminum, dissolved	< 0.005	N/A	0.005	mg/L	N/A	2016-12-29	
Antimony, dissolved	< 0.0001	0.2	0.0001	mg/L	N/A	2016-12-29	
Arsenic, dissolved	**0.0150**	0.05	0.0005	mg/L	N/A	2016-12-29	
Barium, dissolved	**0.033**	5	0.005	mg/L	N/A	2016-12-29	
Beryllium, dissolved	< 0.0001	0.053	0.0001	mg/L	N/A	2016-12-29	
Bismuth, dissolved	< 0.0001	N/A	0.0001	mg/L	N/A	2016-12-29	
Boron, dissolved	**0.306**	50	0.004	mg/L	N/A	2016-12-29	
Cadmium, dissolved	< 0.00001	0.0001	0.00001	mg/L	N/A	2016-12-29	
Calcium, dissolved	**148**	N/A	0.2	mg/L	N/A	2016-12-29	
Chromium, dissolved	< 0.0005	N/A	0.0005	mg/L	N/A	2016-12-29	
Cobalt, dissolved	**0.0147**	0.04	0.00005	mg/L	N/A	2016-12-29	
Copper, dissolved	< 0.0002	0.02	0.0002	mg/L	N/A	2016-12-29	
Iron, dissolved	**63.4**	N/A	0.010	mg/L	N/A	2016-12-29	
Lead, dissolved	< 0.0001	0.04	0.0001	mg/L	N/A	2016-12-29	
Lithium, dissolved	**0.0001**	N/A	0.0001	mg/L	N/A	2016-12-29	
Magnesium, dissolved	**18.4**	N/A	0.01	mg/L	N/A	2016-12-29	
Manganese, dissolved	**4.17**	N/A	0.0002	mg/L	N/A	2016-12-29	
Mercury, dissolved	< 0.00002	0.001	0.00002	mg/L	2016-12-27	2016-12-27	
Molybdenum, dissolved	**0.0151**	10	0.0001	mg/L	N/A	2016-12-29	
Nickel, dissolved	**0.0029**	0.25	0.0002	mg/L	N/A	2016-12-29	

REPORTED TO	Morrison Hershfield Limited - Burnaby	**WORK ORDER**	6121583
PROJECT	Whistler Landfill - Summer/Winter	**REPORTED**	2017-01-04

Analyte	Result / *Recovery*	Standard / Guideline	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: MW2D (6121583-01) [Water] Sampled: 2016-12-22 00:00, Continued							
Dissolved Metals, Continued							
Phosphorus, dissolved	**0.10**	N/A	0.02	mg/L	N/A	2016-12-29	
Potassium, dissolved	**20.9**	N/A	0.02	mg/L	N/A	2016-12-29	
Selenium, dissolved	< 0.0005	0.01	0.0005	mg/L	N/A	2016-12-29	
Silicon, dissolved	**14.9**	N/A	0.5	mg/L	N/A	2016-12-29	
Silver, dissolved	< 0.00005	0.0005	0.00005	mg/L	N/A	2016-12-29	
Sodium, dissolved	**34.6**	N/A	0.02	mg/L	N/A	2016-12-29	
Strontium, dissolved	**0.585**	N/A	0.001	mg/L	N/A	2016-12-29	
Sulfur, dissolved	**93**	N/A	1	mg/L	N/A	2016-12-29	
Tellurium, dissolved	< 0.0002	N/A	0.0002	mg/L	N/A	2016-12-29	
Thallium, dissolved	< 0.00002	0.003	0.00002	mg/L	N/A	2016-12-29	
Thorium, dissolved	< 0.0001	N/A	0.0001	mg/L	N/A	2016-12-29	
Tin, dissolved	< 0.0002	N/A	0.0002	mg/L	N/A	2016-12-29	
Titanium, dissolved	< 0.005	1	0.005	mg/L	N/A	2016-12-29	
Uranium, dissolved	**0.00022**	1	0.00002	mg/L	N/A	2016-12-29	
Vanadium, dissolved	< 0.001	N/A	0.001	mg/L	N/A	2016-12-29	
Zinc, dissolved	< 0.004	0.075	0.004	mg/L	N/A	2016-12-29	
Zirconium, dissolved	**0.0001**	N/A	0.0001	mg/L	N/A	2016-12-29	
Sample ID: MW2S (6121583-02) [Water] Sampled: 2016-12-22 00:00							
Anions							
Bromide	< 0.10	N/A	0.10	mg/L	N/A	2016-12-29	
Chloride	**14.7**	1500	0.10	mg/L	N/A	2016-12-29	
Fluoride	< 0.10	2	0.1	mg/L	N/A	2016-12-29	
Nitrate+Nitrite (as N)	**0.017**	400	0.005	mg/L	N/A	2016-12-30	
Nitrite (as N)	< 0.005	0.2	0.005	mg/L	2016-12-23	2016-12-23	
Sulfate	**76.6**	1000	1.0	mg/L	N/A	2016-12-29	
General Parameters							
Alkalinity, Total (as CaCO3)	**99**	N/A	2	mg/L	N/A	2017-01-03	
Alkalinity, Phenolphthalein (as CaCO3)	< 1	N/A	2	mg/L	N/A	2017-01-03	
Alkalinity, Bicarbonate (as CaCO3)	**99**	N/A	2	mg/L	N/A	2017-01-03	
Alkalinity, Carbonate (as CaCO3)	< 1	N/A	2	mg/L	N/A	2017-01-03	
Alkalinity, Hydroxide (as CaCO3)	< 1	N/A	2	mg/L	N/A	2017-01-03	
Ammonia, Total (as N)	**4.81**	1.31	0.02	mg/L	N/A	2016-12-29	
Chemical Oxygen Demand	< 20	N/A	20	mg/L	N/A	2017-01-03	
Conductivity (EC)	**423**	N/A	2	µS/cm	N/A	2017-01-03	
Nitrogen, Total Kjeldahl	**4.80**	N/A	0.05	mg/L	2016-12-29	2016-12-30	
pH	**6.76**	N/A	0.01	pH units	N/A	2017-01-03	HT2
Phosphorus, Total (as P)	**0.072**	N/A	0.002	mg/L	2016-12-29	2016-12-30	
Solids, Total Suspended	**67**	N/A	2	mg/L	N/A	2016-12-29	
Calculated Parameters							
Hardness, Total (as CaCO3)	**141**	N/A	0.50	mg/L	N/A	N/A	
Nitrate (as N)	**0.017**	400	0.010	mg/L	N/A	N/A	
Nitrogen, Total	**4.82**	N/A	0.500	mg/L	N/A	N/A	

REPORTED TO	Morrison Hershfield Limited - Burnaby	**WORK ORDER**	6121583
PROJECT	Whistler Landfill - Summer/Winter	**REPORTED**	2017-01-04

Analyte	Result / *Recovery*	Standard / Guideline	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: MW2S (6121583-02) [Water] Sampled: 2016-12-22 00:00, Continued							
Dissolved Metals							
Aluminum, dissolved	< 0.005	N/A	0.005	mg/L	N/A	2016-12-29	
Antimony, dissolved	< 0.0001	0.2	0.0001	mg/L	N/A	2016-12-29	
Arsenic, dissolved	**0.0094**	0.05	0.0005	mg/L	N/A	2016-12-29	
Barium, dissolved	**0.113**	5	0.005	mg/L	N/A	2016-12-29	
Beryllium, dissolved	< 0.0001	0.053	0.0001	mg/L	N/A	2016-12-29	
Bismuth, dissolved	< 0.0001	N/A	0.0001	mg/L	N/A	2016-12-29	
Boron, dissolved	**0.130**	50	0.004	mg/L	N/A	2016-12-29	
Cadmium, dissolved	< 0.00001	0.0001	0.00001	mg/L	N/A	2016-12-29	
Calcium, dissolved	**44.4**	N/A	0.2	mg/L	N/A	2016-12-29	
Chromium, dissolved	< 0.0005	N/A	0.0005	mg/L	N/A	2016-12-29	
Cobalt, dissolved	**0.00278**	0.04	0.00005	mg/L	N/A	2016-12-29	
Copper, dissolved	< 0.0002	0.02	0.0002	mg/L	N/A	2016-12-29	
Iron, dissolved	**50.4**	N/A	0.010	mg/L	N/A	2016-12-29	
Lead, dissolved	< 0.0001	0.04	0.0001	mg/L	N/A	2016-12-29	
Lithium, dissolved	< 0.0001	N/A	0.0001	mg/L	N/A	2016-12-29	
Magnesium, dissolved	**7.37**	N/A	0.01	mg/L	N/A	2016-12-29	
Manganese, dissolved	**2.44**	N/A	0.0002	mg/L	N/A	2016-12-29	
Mercury, dissolved	< 0.00002	0.001	0.00002	mg/L	2016-12-27	2016-12-27	
Molybdenum, dissolved	**0.0043**	10	0.0001	mg/L	N/A	2016-12-29	
Nickel, dissolved	**0.0008**	0.25	0.0002	mg/L	N/A	2016-12-29	
Phosphorus, dissolved	**0.04**	N/A	0.02	mg/L	N/A	2016-12-29	
Potassium, dissolved	**10.3**	N/A	0.02	mg/L	N/A	2016-12-29	
Selenium, dissolved	< 0.0005	0.01	0.0005	mg/L	N/A	2016-12-29	
Silicon, dissolved	**10.1**	N/A	0.5	mg/L	N/A	2016-12-29	
Silver, dissolved	< 0.00005	0.0005	0.00005	mg/L	N/A	2016-12-29	
Sodium, dissolved	**18.9**	N/A	0.02	mg/L	N/A	2016-12-29	
Strontium, dissolved	**0.260**	N/A	0.001	mg/L	N/A	2016-12-29	
Sulfur, dissolved	**29**	N/A	1	mg/L	N/A	2016-12-29	
Tellurium, dissolved	< 0.0002	N/A	0.0002	mg/L	N/A	2016-12-29	
Thallium, dissolved	< 0.00002	0.003	0.00002	mg/L	N/A	2016-12-29	
Thorium, dissolved	< 0.0001	N/A	0.0001	mg/L	N/A	2016-12-29	
Tin, dissolved	< 0.0002	N/A	0.0002	mg/L	N/A	2016-12-29	
Titanium, dissolved	< 0.005	1	0.005	mg/L	N/A	2016-12-29	
Uranium, dissolved	**0.00004**	1	0.00002	mg/L	N/A	2016-12-29	
Vanadium, dissolved	< 0.001	N/A	0.001	mg/L	N/A	2016-12-29	
Zinc, dissolved	< 0.004	0.075	0.004	mg/L	N/A	2016-12-29	
Zirconium, dissolved	< 0.0001	N/A	0.0001	mg/L	N/A	2016-12-29	
Sample ID: MW3 (6121583-03) [Water] Sampled: 2016-12-22 00:00							
Anions							
Bromide	< 0.10	N/A	0.10	mg/L	N/A	2016-12-29	
Chloride	**5.95**	1500	0.10	mg/L	N/A	2016-12-29	
Fluoride	< 0.10	2	0.1	mg/L	N/A	2016-12-29	
Nitrate+Nitrite (as N)	**0.143**	400	0.005	mg/L	N/A	2016-12-30	

REPORTED TO	Morrison Hershfield Limited - Burnaby	**WORK ORDER**	6121583
PROJECT	Whistler Landfill - Summer/Winter	**REPORTED**	2017-01-04

Analyte	Result / *Recovery*	Standard / Guideline	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: MW3 (6121583-03) [Water] Sampled: 2016-12-22 00:00, Continued							
Anions, Continued							
Nitrite (as N)	< 0.005	0.2	0.005	mg/L	2016-12-23	2016-12-23	
Sulfate	**24.3**	1000	1.0	mg/L	N/A	2016-12-29	
General Parameters							
Alkalinity, Total (as CaCO3)	**33**	N/A	2	mg/L	N/A	2017-01-03	
Alkalinity, Phenolphthalein (as CaCO3)	< 1	N/A	2	mg/L	N/A	2017-01-03	
Alkalinity, Bicarbonate (as CaCO3)	**33**	N/A	2	mg/L	N/A	2017-01-03	
Alkalinity, Carbonate (as CaCO3)	< 1	N/A	2	mg/L	N/A	2017-01-03	
Alkalinity, Hydroxide (as CaCO3)	< 1	N/A	2	mg/L	N/A	2017-01-03	
Ammonia, Total (as N)	**0.328**	1.31	0.02	mg/L	N/A	2016-12-29	
Chemical Oxygen Demand	< 20	N/A	20	mg/L	N/A	2017-01-03	
Conductivity (EC)	**147**	N/A	2	µS/cm	N/A	2017-01-03	
Nitrogen, Total Kjeldahl	**0.32**	N/A	0.05	mg/L	2016-12-29	2016-12-30	
pH	**6.60**	N/A	0.01	pH units	N/A	2017-01-03	HT2
Phosphorus, Total (as P)	**0.020**	N/A	0.002	mg/L	2016-12-29	2016-12-30	
Solids, Total Suspended	< 2	N/A	2	mg/L	N/A	2016-12-29	
Calculated Parameters							
Hardness, Total (as CaCO3)	**40.7**	N/A	0.50	mg/L	N/A	N/A	
Nitrate (as N)	**0.143**	400	0.010	mg/L	N/A	N/A	
Nitrogen, Total	**0.463**	N/A	0.050	mg/L	N/A	N/A	
Dissolved Metals							
Aluminum, dissolved	**0.009**	N/A	0.005	mg/L	N/A	2016-12-29	
Antimony, dissolved	< 0.0001	0.2	0.0001	mg/L	N/A	2016-12-29	
Arsenic, dissolved	< 0.0005	0.05	0.0005	mg/L	N/A	2016-12-29	
Barium, dissolved	**0.055**	5	0.005	mg/L	N/A	2016-12-29	
Beryllium, dissolved	< 0.0001	0.053	0.0001	mg/L	N/A	2016-12-29	
Bismuth, dissolved	< 0.0001	N/A	0.0001	mg/L	N/A	2016-12-29	
Boron, dissolved	**0.010**	50	0.004	mg/L	N/A	2016-12-29	
Cadmium, dissolved	**0.00031**	0.0001	0.00001	mg/L	N/A	2016-12-29	
Calcium, dissolved	**12.7**	N/A	0.2	mg/L	N/A	2016-12-29	
Chromium, dissolved	< 0.0005	N/A	0.0005	mg/L	N/A	2016-12-29	
Cobalt, dissolved	**0.00358**	0.04	0.00005	mg/L	N/A	2016-12-29	
Copper, dissolved	**0.0027**	0.02	0.0002	mg/L	N/A	2016-12-29	
Iron, dissolved	**0.198**	N/A	0.010	mg/L	N/A	2016-12-29	
Lead, dissolved	< 0.0001	0.04	0.0001	mg/L	N/A	2016-12-29	
Lithium, dissolved	**0.0002**	N/A	0.0001	mg/L	N/A	2016-12-29	
Magnesium, dissolved	**2.21**	N/A	0.01	mg/L	N/A	2016-12-29	
Manganese, dissolved	**0.992**	N/A	0.0002	mg/L	N/A	2016-12-29	
Mercury, dissolved	< 0.00002	0.001	0.00002	mg/L	2016-12-27	2016-12-27	
Molybdenum, dissolved	**0.0010**	10	0.0001	mg/L	N/A	2016-12-29	
Nickel, dissolved	**0.0019**	0.25	0.0002	mg/L	N/A	2016-12-29	
Phosphorus, dissolved	< 0.02	N/A	0.02	mg/L	N/A	2016-12-29	
Potassium, dissolved	**3.02**	N/A	0.02	mg/L	N/A	2016-12-29	
Selenium, dissolved	< 0.0005	0.01	0.0005	mg/L	N/A	2016-12-29	
Silicon, dissolved	**6.7**	N/A	0.5	mg/L	N/A	2016-12-29	

REPORTED TO	Morrison Hershfield Limited - Burnaby	**WORK ORDER**	6121583
PROJECT	Whistler Landfill - Summer/Winter	**REPORTED**	2017-01-04

Analyte	Result / *Recovery*	Standard / Guideline	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: MW3 (6121583-03) [Water] Sampled: 2016-12-22 00:00, Continued							
Dissolved Metals, Continued							
Silver, dissolved	< 0.00005	0.0005	0.00005	mg/L	N/A	2016-12-29	
Sodium, dissolved	**9.21**	N/A	0.02	mg/L	N/A	2016-12-29	
Strontium, dissolved	**0.106**	N/A	0.001	mg/L	N/A	2016-12-29	
Sulfur, dissolved	**5**	N/A	1	mg/L	N/A	2016-12-29	
Tellurium, dissolved	< 0.0002	N/A	0.0002	mg/L	N/A	2016-12-29	
Thallium, dissolved	**0.00010**	0.003	0.00002	mg/L	N/A	2016-12-29	
Thorium, dissolved	< 0.0001	N/A	0.0001	mg/L	N/A	2016-12-29	
Tin, dissolved	< 0.0002	N/A	0.0002	mg/L	N/A	2016-12-29	
Titanium, dissolved	< 0.005	1	0.005	mg/L	N/A	2016-12-29	
Uranium, dissolved	< 0.00002	1	0.00002	mg/L	N/A	2016-12-29	
Vanadium, dissolved	< 0.001	N/A	0.001	mg/L	N/A	2016-12-29	
Zinc, dissolved	**0.023**	0.075	0.004	mg/L	N/A	2016-12-29	
Zirconium, dissolved	< 0.0001	N/A	0.0001	mg/L	N/A	2016-12-29	
Sample ID: MW4 (6121583-04) [Water] Sampled: 2016-12-22 00:00							
Anions							
Bromide	< 0.10	N/A	0.10	mg/L	N/A	2016-12-29	
Chloride	**18.5**	1500	0.10	mg/L	N/A	2016-12-29	
Fluoride	< 0.10	2	0.1	mg/L	N/A	2016-12-29	
Nitrate+Nitrite (as N)	**0.015**	400	0.005	mg/L	N/A	2016-12-30	
Nitrite (as N)	< 0.005	0.2	0.005	mg/L	2016-12-23	2016-12-23	
Sulfate	**48.2**	1000	1.0	mg/L	N/A	2016-12-29	
General Parameters							
Alkalinity, Total (as CaCO3)	**109**	N/A	2	mg/L	N/A	2017-01-03	
Alkalinity, Phenolphthalein (as CaCO3)	< 1	N/A	2	mg/L	N/A	2017-01-03	
Alkalinity, Bicarbonate (as CaCO3)	**109**	N/A	2	mg/L	N/A	2017-01-03	
Alkalinity, Carbonate (as CaCO3)	< 1	N/A	2	mg/L	N/A	2017-01-03	
Alkalinity, Hydroxide (as CaCO3)	< 1	N/A	2	mg/L	N/A	2017-01-03	
Ammonia, Total (as N)	**2.12**	1.31	0.02	mg/L	N/A	2016-12-29	
Chemical Oxygen Demand	< 20	N/A	20	mg/L	N/A	2017-01-03	
Conductivity (EC)	**382**	N/A	2	µS/cm	N/A	2017-01-03	
Nitrogen, Total Kjeldahl	**3.16**	N/A	0.05	mg/L	2016-12-29	2016-12-30	
pH	**6.72**	N/A	0.01	pH units	N/A	2017-01-03	HT2
Phosphorus, Total (as P)	**0.205**	N/A	0.002	mg/L	2016-12-29	2016-12-30	
Solids, Total Suspended	**665**	N/A	2	mg/L	N/A	2016-12-29	
Calculated Parameters							
Hardness, Total (as CaCO3)	**140**	N/A	0.50	mg/L	N/A	N/A	
Nitrate (as N)	**0.015**	400	0.010	mg/L	N/A	N/A	
Nitrogen, Total	**3.18**	N/A	0.500	mg/L	N/A	N/A	
Dissolved Metals							
Aluminum, dissolved	**0.006**	N/A	0.005	mg/L	N/A	2016-12-29	
Antimony, dissolved	< 0.0001	0.2	0.0001	mg/L	N/A	2016-12-29	
Arsenic, dissolved	**0.0072**	0.05	0.0005	mg/L	N/A	2016-12-29	

REPORTED TO	Morrison Hershfield Limited - Burnaby	**WORK ORDER**	6121583
PROJECT	Whistler Landfill - Summer/Winter	**REPORTED**	2017-01-04

Analyte	Result / *Recovery*	Standard / Guideline	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: MW4 (6121583-04) [Water] Sampled: 2016-12-22 00:00, Continued							
Dissolved Metals, Continued							
Barium, dissolved	**0.175**	5	0.005	mg/L	N/A	2016-12-29	
Beryllium, dissolved	< 0.0001	0.053	0.0001	mg/L	N/A	2016-12-29	
Bismuth, dissolved	< 0.0001	N/A	0.0001	mg/L	N/A	2016-12-29	
Boron, dissolved	**0.071**	50	0.004	mg/L	N/A	2016-12-29	
Cadmium, dissolved	**0.00024**	0.0001	0.00001	mg/L	N/A	2016-12-29	
Calcium, dissolved	**45.6**	N/A	0.2	mg/L	N/A	2016-12-29	
Chromium, dissolved	< 0.0005	N/A	0.0005	mg/L	N/A	2016-12-29	
Cobalt, dissolved	**0.0322**	0.04	0.00005	mg/L	N/A	2016-12-29	
Copper, dissolved	**0.0011**	0.02	0.0002	mg/L	N/A	2016-12-29	
Iron, dissolved	**46.9**	N/A	0.010	mg/L	N/A	2016-12-29	
Lead, dissolved	< 0.0001	0.04	0.0001	mg/L	N/A	2016-12-29	
Lithium, dissolved	**0.0002**	N/A	0.0001	mg/L	N/A	2016-12-29	
Magnesium, dissolved	**6.43**	N/A	0.01	mg/L	N/A	2016-12-29	
Manganese, dissolved	**3.03**	N/A	0.0002	mg/L	N/A	2016-12-29	
Mercury, dissolved	< 0.00002	0.001	0.00002	mg/L	2016-12-27	2016-12-27	
Molybdenum, dissolved	**0.0132**	10	0.0001	mg/L	N/A	2016-12-29	
Nickel, dissolved	**0.0039**	0.25	0.0002	mg/L	N/A	2016-12-29	
Phosphorus, dissolved	< 0.02	N/A	0.02	mg/L	N/A	2016-12-29	
Potassium, dissolved	**6.21**	N/A	0.02	mg/L	N/A	2016-12-29	
Selenium, dissolved	< 0.0005	0.01	0.0005	mg/L	N/A	2016-12-29	
Silicon, dissolved	**10.7**	N/A	0.5	mg/L	N/A	2016-12-29	
Silver, dissolved	< 0.00005	0.0005	0.00005	mg/L	N/A	2016-12-29	
Sodium, dissolved	**19.0**	N/A	0.02	mg/L	N/A	2016-12-29	
Strontium, dissolved	**0.282**	N/A	0.001	mg/L	N/A	2016-12-29	
Sulfur, dissolved	**17**	N/A	1	mg/L	N/A	2016-12-29	
Tellurium, dissolved	< 0.0002	N/A	0.0002	mg/L	N/A	2016-12-29	
Thallium, dissolved	**0.00004**	0.003	0.00002	mg/L	N/A	2016-12-29	
Thorium, dissolved	< 0.0001	N/A	0.0001	mg/L	N/A	2016-12-29	
Tin, dissolved	< 0.0002	N/A	0.0002	mg/L	N/A	2016-12-29	
Titanium, dissolved	< 0.005	1	0.005	mg/L	N/A	2016-12-29	
Uranium, dissolved	**0.00020**	1	0.00002	mg/L	N/A	2016-12-29	
Vanadium, dissolved	< 0.001	N/A	0.001	mg/L	N/A	2016-12-29	
Zinc, dissolved	**0.006**	0.075	0.004	mg/L	N/A	2016-12-29	
Zirconium, dissolved	< 0.0001	N/A	0.0001	mg/L	N/A	2016-12-29	
Sample ID: SFC2 (6121583-05) [Water] Sampled: 2016-12-22 00:00							
Anions							
Bromide	< 0.10	N/A	0.10	mg/L	N/A	2016-12-29	
Chloride	**11.5**	1500	0.10	mg/L	N/A	2016-12-29	
Fluoride	< 0.10	2	0.1	mg/L	N/A	2016-12-29	
Nitrate+Nitrite (as N)	**0.164**	400	0.005	mg/L	N/A	2016-12-30	
Nitrite (as N)	< 0.005	0.2	0.005	mg/L	2016-12-23	2016-12-23	
Sulfate	**64.5**	1000	1.0	mg/L	N/A	2016-12-29	
General Parameters							

REPORTED TO	Morrison Hershfield Limited - Burnaby	**WORK ORDER**	6121583
PROJECT	Whistler Landfill - Summer/Winter	**REPORTED**	2017-01-04

Analyte	Result / *Recovery*	Standard / Guideline	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: SFC2 (6121583-05) [Water] Sampled: 2016-12-22 00:00, Continued							
General Parameters, Continued							
Alkalinity, Total (as CaCO3)	**61**	N/A	2	mg/L	N/A	2017-01-03	
Alkalinity, Phenolphthalein (as CaCO3)	< 1	N/A	2	mg/L	N/A	2017-01-03	
Alkalinity, Bicarbonate (as CaCO3)	**61**	N/A	2	mg/L	N/A	2017-01-03	
Alkalinity, Carbonate (as CaCO3)	< 1	N/A	2	mg/L	N/A	2017-01-03	
Alkalinity, Hydroxide (as CaCO3)	< 1	N/A	2	mg/L	N/A	2017-01-03	
Ammonia, Total (as N)	**0.649**	1.31	0.02	mg/L	N/A	2016-12-29	
Chemical Oxygen Demand	< 20	N/A	20	mg/L	N/A	2017-01-03	
Conductivity (EC)	**311**	N/A	2	µS/cm	N/A	2017-01-03	
Nitrogen, Total Kjeldahl	**0.64**	N/A	0.05	mg/L	2016-12-29	2016-12-30	
pH	**6.99**	N/A	0.01	pH units	N/A	2017-01-03	HT2
Phosphorus, Total (as P)	**0.011**	N/A	0.002	mg/L	2016-12-29	2016-12-30	
Solids, Total Suspended	**13**	N/A	2	mg/L	N/A	2016-12-29	
Calculated Parameters							
Hardness, Total (as CaCO3)	**110**	N/A	0.50	mg/L	N/A	N/A	
Nitrate (as N)	**0.164**	400	0.010	mg/L	N/A	N/A	
Nitrogen, Total	**0.802**	N/A	0.050	mg/L	N/A	N/A	
Total Metals							
Aluminum, total	**0.972**	N/A	0.005	mg/L	2016-12-28	2016-12-29	
Antimony, total	< 0.0001	0.2	0.0001	mg/L	2016-12-28	2016-12-29	
Arsenic, total	< 0.0005	0.05	0.0005	mg/L	2016-12-28	2016-12-29	
Barium, total	**0.053**	5	0.005	mg/L	2016-12-28	2016-12-29	
Beryllium, total	< 0.0001	0.053	0.0001	mg/L	2016-12-28	2016-12-29	
Bismuth, total	< 0.0001	N/A	0.0001	mg/L	2016-12-28	2016-12-29	
Boron, total	**0.045**	50	0.004	mg/L	2016-12-28	2016-12-29	
Cadmium, total	**0.00008**	0.0001	0.00001	mg/L	2016-12-28	2016-12-29	
Calcium, total	**37.2**	N/A	0.2	mg/L	2016-12-28	2016-12-29	
Chromium, total	< 0.0005	N/A	0.0005	mg/L	2016-12-28	2016-12-29	
Cobalt, total	**0.00853**	0.04	0.00005	mg/L	2016-12-28	2016-12-29	
Copper, total	**0.0169**	0.02	0.0002	mg/L	2016-12-28	2016-12-29	
Iron, total	**5.06**	N/A	0.01	mg/L	2016-12-28	2016-12-29	
Lead, total	< 0.0001	0.04	0.0001	mg/L	2016-12-28	2016-12-29	
Lithium, total	**0.0004**	N/A	0.0001	mg/L	2016-12-28	2016-12-29	
Magnesium, total	**4.20**	N/A	0.01	mg/L	2016-12-28	2016-12-29	
Manganese, total	**1.40**	N/A	0.0002	mg/L	2016-12-28	2016-12-29	
Mercury, total	< 0.00002	0.001	0.00002	mg/L	2016-12-27	2016-12-28	
Molybdenum, total	**0.0030**	10	0.0001	mg/L	2016-12-28	2016-12-29	
Nickel, total	**0.0026**	0.25	0.0002	mg/L	2016-12-28	2016-12-29	
Phosphorus, total	< 0.02	N/A	0.02	mg/L	2016-12-28	2016-12-29	
Potassium, total	**3.75**	N/A	0.02	mg/L	2016-12-28	2016-12-29	
Selenium, total	< 0.0005	0.01	0.0005	mg/L	2016-12-28	2016-12-29	
Silicon, total	**4.0**	N/A	0.5	mg/L	2016-12-28	2016-12-29	
Silver, total	< 0.00005	0.0005	0.00005	mg/L	2016-12-28	2016-12-29	
Sodium, total	**12.4**	N/A	0.02	mg/L	2016-12-28	2016-12-29	
Strontium, total	**0.222**	N/A	0.001	mg/L	2016-12-28	2016-12-29	

REPORTED TO	Morrison Hershfield Limited - Burnaby	**WORK ORDER**	6121583
PROJECT	Whistler Landfill - Summer/Winter	**REPORTED**	2017-01-04

Analyte	Result / *Recovery*	Standard / Guideline	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: SFC2 (6121583-05) [Water] Sampled: 2016-12-22 00:00, Continued							
Total Metals, Continued							
Sulfur, total	**21**	N/A	1	mg/L	2016-12-28	2016-12-29	
Tellurium, total	< 0.0002	N/A	0.0002	mg/L	2016-12-28	2016-12-29	
Thallium, total	**0.00002**	0.003	0.00002	mg/L	2016-12-28	2016-12-29	
Thorium, total	< 0.0001	N/A	0.0001	mg/L	2016-12-28	2016-12-29	
Tin, total	< 0.0002	N/A	0.0002	mg/L	2016-12-28	2016-12-29	
Titanium, total	< 0.005	1	0.005	mg/L	2016-12-28	2016-12-29	
Uranium, total	**0.00007**	1	0.00002	mg/L	2016-12-28	2016-12-29	
Vanadium, total	< 0.001	N/A	0.001	mg/L	2016-12-28	2016-12-29	
Zinc, total	**0.009**	0.075	0.004	mg/L	2016-12-28	2016-12-29	
Zirconium, total	< 0.0001	N/A	0.0001	mg/L	2016-12-28	2016-12-29	
Sample ID: SFC3A (6121583-06) [Water] Sampled: 2016-12-22 13:50							
Anions							
Bromide	< 0.10	N/A	0.10	mg/L	N/A	2016-12-29	
Chloride	**17.3**	1500	0.10	mg/L	N/A	2016-12-29	
Fluoride	< 0.10	2	0.1	mg/L	N/A	2016-12-29	
Nitrate+Nitrite (as N)	**0.162**	400	0.005	mg/L	N/A	2016-12-30	
Nitrite (as N)	< 0.005	0.2	0.005	mg/L	2016-12-23	2016-12-23	
Sulfate	**21.7**	1000	1.0	mg/L	N/A	2016-12-29	
General Parameters							
Alkalinity, Total (as CaCO3)	**27**	N/A	2	mg/L	N/A	2017-01-03	
Alkalinity, Phenolphthalein (as CaCO3)	< 1	N/A	2	mg/L	N/A	2017-01-03	
Alkalinity, Bicarbonate (as CaCO3)	**27**	N/A	2	mg/L	N/A	2017-01-03	
Alkalinity, Carbonate (as CaCO3)	< 1	N/A	2	mg/L	N/A	2017-01-03	
Alkalinity, Hydroxide (as CaCO3)	< 1	N/A	2	mg/L	N/A	2017-01-03	
Ammonia, Total (as N)	**0.036**	1.31	0.02	mg/L	N/A	2016-12-29	
Chemical Oxygen Demand	< 20	N/A	20	mg/L	N/A	2017-01-03	
Conductivity (EC)	**169**	N/A	2	µS/cm	N/A	2017-01-03	
Nitrogen, Total Kjeldahl	< 0.05	N/A	0.05	mg/L	2016-12-29	2016-12-30	
pH	**7.01**	N/A	0.01	pH units	N/A	2017-01-03	HT2
Phosphorus, Total (as P)	**0.010**	N/A	0.002	mg/L	2016-12-29	2016-12-30	
Solids, Total Suspended	< 3	N/A	2	mg/L	N/A	2016-12-29	
Calculated Parameters							
Hardness, Total (as CaCO3)	**40.0**	N/A	0.50	mg/L	N/A	N/A	
Nitrate (as N)	**0.162**	400	0.010	mg/L	N/A	N/A	
Nitrogen, Total	**0.162**	N/A	0.050	mg/L	N/A	N/A	
Total Metals							
Aluminum, total	**0.059**	N/A	0.005	mg/L	2016-12-28	2016-12-29	
Antimony, total	< 0.0001	0.2	0.0001	mg/L	2016-12-28	2016-12-29	
Arsenic, total	< 0.0005	0.05	0.0005	mg/L	2016-12-28	2016-12-29	
Barium, total	**0.017**	5	0.005	mg/L	2016-12-28	2016-12-29	
Beryllium, total	< 0.0001	0.053	0.0001	mg/L	2016-12-28	2016-12-29	
Bismuth, total	< 0.0001	N/A	0.0001	mg/L	2016-12-28	2016-12-29	

REPORTED TO	Morrison Hershfield Limited - Burnaby	**WORK ORDER**	6121583
PROJECT	Whistler Landfill - Summer/Winter	**REPORTED**	2017-01-04

Analyte	Result / *Recovery*	Standard / Guideline	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: SFC3A (6121583-06) [Water] Sampled: 2016-12-22 13:50, Continued							
Total Metals, Continued							
Boron, total	**0.009**	50	0.004	mg/L	2016-12-28	2016-12-29	
Cadmium, total	**0.00002**	0.0001	0.00001	mg/L	2016-12-28	2016-12-29	
Calcium, total	**13.3**	N/A	0.2	mg/L	2016-12-28	2016-12-29	
Chromium, total	< 0.0005	N/A	0.0005	mg/L	2016-12-28	2016-12-29	
Cobalt, total	**0.00030**	0.04	0.00005	mg/L	2016-12-28	2016-12-29	
Copper, total	**0.0021**	0.02	0.0002	mg/L	2016-12-28	2016-12-29	
Iron, total	**0.20**	N/A	0.01	mg/L	2016-12-28	2016-12-29	
Lead, total	< 0.0001	0.04	0.0001	mg/L	2016-12-28	2016-12-29	
Lithium, total	**0.0003**	N/A	0.0001	mg/L	2016-12-28	2016-12-29	
Magnesium, total	**1.67**	N/A	0.01	mg/L	2016-12-28	2016-12-29	
Manganese, total	**0.0149**	N/A	0.0002	mg/L	2016-12-28	2016-12-29	
Mercury, total	< 0.00002	0.001	0.00002	mg/L	2016-12-27	2016-12-28	
Molybdenum, total	**0.0003**	10	0.0001	mg/L	2016-12-28	2016-12-29	
Nickel, total	**0.0002**	0.25	0.0002	mg/L	2016-12-28	2016-12-29	
Phosphorus, total	< 0.02	N/A	0.02	mg/L	2016-12-28	2016-12-29	
Potassium, total	**1.20**	N/A	0.02	mg/L	2016-12-28	2016-12-29	
Selenium, total	< 0.0005	0.01	0.0005	mg/L	2016-12-28	2016-12-29	
Silicon, total	**5.9**	N/A	0.5	mg/L	2016-12-28	2016-12-29	
Silver, total	< 0.00005	0.0005	0.00005	mg/L	2016-12-28	2016-12-29	
Sodium, total	**15.6**	N/A	0.02	mg/L	2016-12-28	2016-12-29	
Strontium, total	**0.106**	N/A	0.001	mg/L	2016-12-28	2016-12-29	
Sulfur, total	**7**	N/A	1	mg/L	2016-12-28	2016-12-29	
Tellurium, total	< 0.0002	N/A	0.0002	mg/L	2016-12-28	2016-12-29	
Thallium, total	< 0.00002	0.003	0.00002	mg/L	2016-12-28	2016-12-29	
Thorium, total	< 0.0001	N/A	0.0001	mg/L	2016-12-28	2016-12-29	
Tin, total	< 0.0002	N/A	0.0002	mg/L	2016-12-28	2016-12-29	
Titanium, total	< 0.005	1	0.005	mg/L	2016-12-28	2016-12-29	
Uranium, total	< 0.00002	1	0.00002	mg/L	2016-12-28	2016-12-29	
Vanadium, total	< 0.001	N/A	0.001	mg/L	2016-12-28	2016-12-29	
Zinc, total	< 0.004	0.075	0.004	mg/L	2016-12-28	2016-12-29	
Zirconium, total	< 0.0001	N/A	0.0001	mg/L	2016-12-28	2016-12-29	
Sample ID: SFC3B (6121583-07) [Water] Sampled: 2016-12-22 15:00							
Anions							
Bromide	< 0.10	N/A	0.10	mg/L	N/A	2016-12-29	
Chloride	**8.30**	1500	0.10	mg/L	N/A	2016-12-29	
Fluoride	< 0.10	2	0.1	mg/L	N/A	2016-12-29	
Nitrate+Nitrite (as N)	**0.362**	400	0.005	mg/L	N/A	2016-12-30	
Nitrite (as N)	< 0.005	0.2	0.005	mg/L	2016-12-23	2016-12-23	
Sulfate	**12.3**	1000	1.0	mg/L	N/A	2016-12-29	
General Parameters							
Alkalinity, Total (as CaCO3)	**25**	N/A	2	mg/L	N/A	2017-01-03	
Alkalinity, Phenolphthalein (as CaCO3)	< 1	N/A	2	mg/L	N/A	2017-01-03	
Alkalinity, Bicarbonate (as CaCO3)	**25**	N/A	2	mg/L	N/A	2017-01-03	

REPORTED TO	Morrison Hershfield Limited - Burnaby	**WORK ORDER**	6121583
PROJECT	Whistler Landfill - Summer/Winter	**REPORTED**	2017-01-04

Analyte	Result / *Recovery*	Standard / Guideline	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: SFC3B (6121583-07) [Water] Sampled: 2016-12-22 15:00, Continued							
General Parameters, Continued							
Alkalinity, Carbonate (as CaCO3)	< 1	N/A	2	mg/L	N/A	2017-01-03	
Alkalinity, Hydroxide (as CaCO3)	< 1	N/A	2	mg/L	N/A	2017-01-03	
Ammonia, Total (as N)	**0.027**	1.31	0.02	mg/L	N/A	2016-12-29	
Chemical Oxygen Demand	< 20	N/A	20	mg/L	N/A	2017-01-03	
Conductivity (EC)	**111**	N/A	2	µS/cm	N/A	2017-01-03	
Nitrogen, Total Kjeldahl	< 0.05	N/A	0.05	mg/L	2016-12-29	2016-12-30	
pH	**6.94**	N/A	0.01	pH units	N/A	2017-01-03	HT2
Phosphorus, Total (as P)	**0.011**	N/A	0.002	mg/L	2016-12-29	2016-12-30	
Solids, Total Suspended	< 2	N/A	2	mg/L	N/A	2016-12-29	
Calculated Parameters							
Hardness, Total (as CaCO3)	**36.7**	N/A	0.50	mg/L	N/A	N/A	
Nitrate (as N)	**0.362**	400	0.010	mg/L	N/A	N/A	
Nitrogen, Total	**0.362**	N/A	0.050	mg/L	N/A	N/A	
Total Metals							
Aluminum, total	**0.077**	N/A	0.005	mg/L	2016-12-28	2016-12-29	
Antimony, total	< 0.0001	0.2	0.0001	mg/L	2016-12-28	2016-12-29	
Arsenic, total	< 0.0005	0.05	0.0005	mg/L	2016-12-28	2016-12-29	
Barium, total	**0.011**	5	0.005	mg/L	2016-12-28	2016-12-29	
Beryllium, total	< 0.0001	0.053	0.0001	mg/L	2016-12-28	2016-12-29	
Bismuth, total	< 0.0001	N/A	0.0001	mg/L	2016-12-28	2016-12-29	
Boron, total	**0.009**	50	0.004	mg/L	2016-12-28	2016-12-29	
Cadmium, total	**0.00002**	0.0001	0.00001	mg/L	2016-12-28	2016-12-29	
Calcium, total	**11.6**	N/A	0.2	mg/L	2016-12-28	2016-12-29	
Chromium, total	< 0.0005	N/A	0.0005	mg/L	2016-12-28	2016-12-29	
Cobalt, total	**0.00005**	0.04	0.00005	mg/L	2016-12-28	2016-12-29	
Copper, total	**0.0008**	0.02	0.0002	mg/L	2016-12-28	2016-12-29	
Iron, total	**0.05**	N/A	0.01	mg/L	2016-12-28	2016-12-29	
Lead, total	< 0.0001	0.04	0.0001	mg/L	2016-12-28	2016-12-29	
Lithium, total	**0.0005**	N/A	0.0001	mg/L	2016-12-28	2016-12-29	
Magnesium, total	**1.89**	N/A	0.01	mg/L	2016-12-28	2016-12-29	
Manganese, total	**0.0026**	N/A	0.0002	mg/L	2016-12-28	2016-12-29	
Mercury, total	< 0.00002	0.001	0.00002	mg/L	2016-12-27	2016-12-28	
Molybdenum, total	**0.0002**	10	0.0001	mg/L	2016-12-28	2016-12-29	
Nickel, total	< 0.0002	0.25	0.0002	mg/L	2016-12-28	2016-12-29	
Phosphorus, total	< 0.02	N/A	0.02	mg/L	2016-12-28	2016-12-29	
Potassium, total	**0.71**	N/A	0.02	mg/L	2016-12-28	2016-12-29	
Selenium, total	< 0.0005	0.01	0.0005	mg/L	2016-12-28	2016-12-29	
Silicon, total	**8.0**	N/A	0.5	mg/L	2016-12-28	2016-12-29	
Silver, total	< 0.00005	0.0005	0.00005	mg/L	2016-12-28	2016-12-29	
Sodium, total	**6.49**	N/A	0.02	mg/L	2016-12-28	2016-12-29	
Strontium, total	**0.138**	N/A	0.001	mg/L	2016-12-28	2016-12-29	
Sulfur, total	**3**	N/A	1	mg/L	2016-12-28	2016-12-29	
Tellurium, total	< 0.0002	N/A	0.0002	mg/L	2016-12-28	2016-12-29	
Thallium, total	< 0.00002	0.003	0.00002	mg/L	2016-12-28	2016-12-29	

REPORTED TO	Morrison Hershfield Limited - Burnaby	**WORK ORDER**	6121583
PROJECT	Whistler Landfill - Summer/Winter	**REPORTED**	2017-01-04

Analyte	Result / *Recovery*	Standard / Guideline	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: SFC3B (6121583-07) [Water] Sampled: 2016-12-22 15:00, Continued							
Total Metals, Continued							
Thorium, total	< 0.0001	N/A	0.0001	mg/L	2016-12-28	2016-12-29	
Tin, total	< 0.0002	N/A	0.0002	mg/L	2016-12-28	2016-12-29	
Titanium, total	< 0.005	1	0.005	mg/L	2016-12-28	2016-12-29	
Uranium, total	< 0.00002	1	0.00002	mg/L	2016-12-28	2016-12-29	
Vanadium, total	< 0.001	N/A	0.001	mg/L	2016-12-28	2016-12-29	
Zinc, total	< 0.004	0.075	0.004	mg/L	2016-12-28	2016-12-29	
Zirconium, total	< 0.0001	N/A	0.0001	mg/L	2016-12-28	2016-12-29	
Sample ID: SFC4 (6121583-08) [Water] Sampled: 2016-12-22 00:00							
Anions							
Bromide	< 0.10	N/A	0.10	mg/L	N/A	2016-12-29	
Chloride	**23.0**	1500	0.10	mg/L	N/A	2016-12-29	
Fluoride	< 0.10	2	0.1	mg/L	N/A	2016-12-29	
Nitrate+Nitrite (as N)	**0.352**	400	0.005	mg/L	N/A	2016-12-30	
Nitrite (as N)	< 0.005	0.2	0.005	mg/L	2016-12-23	2016-12-23	
Sulfate	**79.9**	1000	1.0	mg/L	N/A	2016-12-29	
General Parameters							
Alkalinity, Total (as CaCO3)	**49**	N/A	2	mg/L	N/A	2017-01-03	
Alkalinity, Phenolphthalein (as CaCO3)	< 1	N/A	2	mg/L	N/A	2017-01-03	
Alkalinity, Bicarbonate (as CaCO3)	**49**	N/A	2	mg/L	N/A	2017-01-03	
Alkalinity, Carbonate (as CaCO3)	< 1	N/A	2	mg/L	N/A	2017-01-03	
Alkalinity, Hydroxide (as CaCO3)	< 1	N/A	2	mg/L	N/A	2017-01-03	
Ammonia, Total (as N)	**0.300**	1.31	0.02	mg/L	N/A	2016-12-29	
Chemical Oxygen Demand	< 20	N/A	20	mg/L	N/A	2017-01-03	
Conductivity (EC)	**362**	N/A	2	µS/cm	N/A	2017-01-03	
Nitrogen, Total Kjeldahl	**0.30**	N/A	0.05	mg/L	2016-12-29	2016-12-30	
pH	**7.36**	N/A	0.01	pH units	N/A	2017-01-03	HT2
Phosphorus, Total (as P)	**0.011**	N/A	0.002	mg/L	2016-12-29	2016-12-30	
Solids, Total Suspended	< 2	N/A	2	mg/L	N/A	2016-12-29	
Calculated Parameters							
Hardness, Total (as CaCO3)	**134**	N/A	0.50	mg/L	N/A	N/A	
Nitrate (as N)	**0.352**	400	0.010	mg/L	N/A	N/A	
Nitrogen, Total	**0.651**	N/A	0.050	mg/L	N/A	N/A	
Total Metals							
Aluminum, total	**0.085**	N/A	0.005	mg/L	2016-12-28	2016-12-29	
Antimony, total	< 0.0001	0.2	0.0001	mg/L	2016-12-28	2016-12-29	
Arsenic, total	< 0.0005	0.05	0.0005	mg/L	2016-12-28	2016-12-29	
Barium, total	**0.031**	5	0.005	mg/L	2016-12-28	2016-12-29	
Beryllium, total	< 0.0001	0.053	0.0001	mg/L	2016-12-28	2016-12-29	
Bismuth, total	< 0.0001	N/A	0.0001	mg/L	2016-12-28	2016-12-29	
Boron, total	**0.064**	50	0.004	mg/L	2016-12-28	2016-12-29	
Cadmium, total	**0.00004**	0.0001	0.00001	mg/L	2016-12-28	2016-12-29	
Calcium, total	**45.3**	N/A	0.2	mg/L	2016-12-28	2016-12-29	

REPORTED TO	Morrison Hershfield Limited - Burnaby	**WORK ORDER**	6121583
PROJECT	Whistler Landfill - Summer/Winter	**REPORTED**	2017-01-04

Analyte	Result / *Recovery*	Standard / Guideline	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: SFC4 (6121583-08) [Water] Sampled: 2016-12-22 00:00, Continued							
Total Metals, Continued							
Chromium, total	< 0.0005	N/A	0.0005	mg/L	2016-12-28	2016-12-29	
Cobalt, total	**0.00295**	0.04	0.00005	mg/L	2016-12-28	2016-12-29	
Copper, total	**0.0025**	0.02	0.0002	mg/L	2016-12-28	2016-12-29	
Iron, total	**0.74**	N/A	0.01	mg/L	2016-12-28	2016-12-29	
Lead, total	< 0.0001	0.04	0.0001	mg/L	2016-12-28	2016-12-29	
Lithium, total	**0.0004**	N/A	0.0001	mg/L	2016-12-28	2016-12-29	
Magnesium, total	**5.08**	N/A	0.01	mg/L	2016-12-28	2016-12-29	
Manganese, total	**0.758**	N/A	0.0002	mg/L	2016-12-28	2016-12-29	
Mercury, total	< 0.00002	0.001	0.00002	mg/L	2016-12-27	2016-12-28	
Molybdenum, total	**0.0005**	10	0.0001	mg/L	2016-12-28	2016-12-29	
Nickel, total	**0.0018**	0.25	0.0002	mg/L	2016-12-28	2016-12-29	
Phosphorus, total	< 0.02	N/A	0.02	mg/L	2016-12-28	2016-12-29	
Potassium, total	**2.99**	N/A	0.02	mg/L	2016-12-28	2016-12-29	
Selenium, total	< 0.0005	0.01	0.0005	mg/L	2016-12-28	2016-12-29	
Silicon, total	**6.0**	N/A	0.5	mg/L	2016-12-28	2016-12-29	
Silver, total	< 0.00005	0.0005	0.00005	mg/L	2016-12-28	2016-12-29	
Sodium, total	**17.1**	N/A	0.02	mg/L	2016-12-28	2016-12-29	
Strontium, total	**0.344**	N/A	0.001	mg/L	2016-12-28	2016-12-29	
Sulfur, total	**29**	N/A	1	mg/L	2016-12-28	2016-12-29	
Tellurium, total	< 0.0002	N/A	0.0002	mg/L	2016-12-28	2016-12-29	
Thallium, total	< 0.00002	0.003	0.00002	mg/L	2016-12-28	2016-12-29	
Thorium, total	< 0.0001	N/A	0.0001	mg/L	2016-12-28	2016-12-29	
Tin, total	< 0.0002	N/A	0.0002	mg/L	2016-12-28	2016-12-29	
Titanium, total	< 0.005	1	0.005	mg/L	2016-12-28	2016-12-29	
Uranium, total	**0.00002**	1	0.00002	mg/L	2016-12-28	2016-12-29	
Vanadium, total	< 0.001	N/A	0.001	mg/L	2016-12-28	2016-12-29	
Zinc, total	**0.009**	0.075	0.004	mg/L	2016-12-28	2016-12-29	
Zirconium, total	< 0.0001	N/A	0.0001	mg/L	2016-12-28	2016-12-29	
Sample ID: SFC11 (6121583-09) [Water] Sampled: 2016-12-22 00:00							
Anions							
Bromide	< 0.10	N/A	0.10	mg/L	N/A	2016-12-29	
Chloride	**8.62**	1500	0.10	mg/L	N/A	2016-12-29	
Fluoride	< 0.10	2	0.1	mg/L	N/A	2016-12-29	
Nitrate+Nitrite (as N)	**0.364**	400	0.005	mg/L	N/A	2016-12-30	
Nitrite (as N)	< 0.005	0.2	0.005	mg/L	2016-12-23	2016-12-23	
Sulfate	**11.7**	1000	1.0	mg/L	N/A	2016-12-29	
General Parameters							
Alkalinity, Total (as CaCO3)	**25**	N/A	2	mg/L	N/A	2017-01-03	
Alkalinity, Phenolphthalein (as CaCO3)	< 1	N/A	2	mg/L	N/A	2017-01-03	
Alkalinity, Bicarbonate (as CaCO3)	**25**	N/A	2	mg/L	N/A	2017-01-03	
Alkalinity, Carbonate (as CaCO3)	< 1	N/A	2	mg/L	N/A	2017-01-03	
Alkalinity, Hydroxide (as CaCO3)	< 1	N/A	2	mg/L	N/A	2017-01-03	
Ammonia, Total (as N)	**0.020**	1.31	0.02	mg/L	N/A	2016-12-29	

REPORTED TO	Morrison Hershfield Limited - Burnaby	**WORK ORDER**	6121583
PROJECT	Whistler Landfill - Summer/Winter	**REPORTED**	2017-01-04

Analyte	Result / *Recovery*	Standard / Guideline	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: SFC11 (6121583-09) [Water] Sampled: 2016-12-22 00:00, Continued							
General Parameters, Continued							
Chemical Oxygen Demand	< 20	N/A	20	mg/L	N/A	2017-01-03	
Conductivity (EC)	**112**	N/A	2	µS/cm	N/A	2017-01-03	
Nitrogen, Total Kjeldahl	< 0.05	N/A	0.05	mg/L	2016-12-29	2016-12-30	
pH	**7.01**	N/A	0.01	pH units	N/A	2017-01-03	HT2
Phosphorus, Total (as P)	**0.011**	N/A	0.002	mg/L	2016-12-29	2016-12-30	
Solids, Total Suspended	< 2	N/A	2	mg/L	N/A	2016-12-29	
Calculated Parameters							
Hardness, Total (as CaCO3)	**35.9**	N/A	0.50	mg/L	N/A	N/A	
Nitrate (as N)	**0.364**	400	0.010	mg/L	N/A	N/A	
Nitrogen, Total	**0.364**	N/A	0.050	mg/L	N/A	N/A	
Total Metals							
Aluminum, total	**0.075**	N/A	0.005	mg/L	2016-12-28	2016-12-29	
Antimony, total	< 0.0001	0.2	0.0001	mg/L	2016-12-28	2016-12-29	
Arsenic, total	< 0.0005	0.05	0.0005	mg/L	2016-12-28	2016-12-29	
Barium, total	**0.010**	5	0.005	mg/L	2016-12-28	2016-12-29	
Beryllium, total	< 0.0001	0.053	0.0001	mg/L	2016-12-28	2016-12-29	
Bismuth, total	< 0.0001	N/A	0.0001	mg/L	2016-12-28	2016-12-29	
Boron, total	**0.009**	50	0.004	mg/L	2016-12-28	2016-12-29	
Cadmium, total	**0.00002**	0.0001	0.00001	mg/L	2016-12-28	2016-12-29	
Calcium, total	**11.3**	N/A	0.2	mg/L	2016-12-28	2016-12-29	
Chromium, total	< 0.0005	N/A	0.0005	mg/L	2016-12-28	2016-12-29	
Cobalt, total	**0.00005**	0.04	0.00005	mg/L	2016-12-28	2016-12-29	
Copper, total	**0.0008**	0.02	0.0002	mg/L	2016-12-28	2016-12-29	
Iron, total	**0.06**	N/A	0.01	mg/L	2016-12-28	2016-12-29	
Lead, total	< 0.0001	0.04	0.0001	mg/L	2016-12-28	2016-12-29	
Lithium, total	**0.0005**	N/A	0.0001	mg/L	2016-12-28	2016-12-29	
Magnesium, total	**1.85**	N/A	0.01	mg/L	2016-12-28	2016-12-29	
Manganese, total	**0.0027**	N/A	0.0002	mg/L	2016-12-28	2016-12-29	
Mercury, total	< 0.00002	0.001	0.00002	mg/L	2016-12-27	2016-12-28	
Molybdenum, total	**0.0003**	10	0.0001	mg/L	2016-12-28	2016-12-29	
Nickel, total	< 0.0002	0.25	0.0002	mg/L	2016-12-28	2016-12-29	
Phosphorus, total	< 0.02	N/A	0.02	mg/L	2016-12-28	2016-12-29	
Potassium, total	**0.69**	N/A	0.02	mg/L	2016-12-28	2016-12-29	
Selenium, total	< 0.0005	0.01	0.0005	mg/L	2016-12-28	2016-12-29	
Silicon, total	**7.6**	N/A	0.5	mg/L	2016-12-28	2016-12-29	
Silver, total	< 0.00005	0.0005	0.00005	mg/L	2016-12-28	2016-12-29	
Sodium, total	**6.33**	N/A	0.02	mg/L	2016-12-28	2016-12-29	
Strontium, total	**0.134**	N/A	0.001	mg/L	2016-12-28	2016-12-29	
Sulfur, total	**3**	N/A	1	mg/L	2016-12-28	2016-12-29	
Tellurium, total	< 0.0002	N/A	0.0002	mg/L	2016-12-28	2016-12-29	
Thallium, total	< 0.00002	0.003	0.00002	mg/L	2016-12-28	2016-12-29	
Thorium, total	< 0.0001	N/A	0.0001	mg/L	2016-12-28	2016-12-29	
Tin, total	< 0.0002	N/A	0.0002	mg/L	2016-12-28	2016-12-29	
Titanium, total	< 0.005	1	0.005	mg/L	2016-12-28	2016-12-29	

REPORTED TO	Morrison Hershfield Limited - Burnaby	**WORK ORDER**	6121583
PROJECT	Whistler Landfill - Summer/Winter	**REPORTED**	2017-01-04

Analyte	Result / *Recovery*	Standard / Guideline	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: SFC11 (6121583-09) [Water] Sampled: 2016-12-22 00:00, Continued							
Total Metals, Continued							
Uranium, total	< 0.00002	1	0.00002	mg/L	2016-12-28	2016-12-29	
Vanadium, total	< 0.001	N/A	0.001	mg/L	2016-12-28	2016-12-29	
Zinc, total	< 0.004	0.075	0.004	mg/L	2016-12-28	2016-12-29	
Zirconium, total	< 0.0001	N/A	0.0001	mg/L	2016-12-28	2016-12-29	
Sample ID: GW INT (6121583-10) [Water] Sampled: 2016-12-22 00:00							
Anions							
Bromide	< 0.10	N/A	0.10	mg/L	N/A	2016-12-29	
Chloride	**44.0**	1500	0.10	mg/L	N/A	2016-12-29	
Fluoride	< 0.10	2	0.1	mg/L	N/A	2016-12-29	
Nitrate+Nitrite (as N)	**0.354**	400	0.005	mg/L	N/A	2016-12-30	
Nitrite (as N)	**0.011**	0.2	0.005	mg/L	2016-12-23	2016-12-23	
Sulfate	**191**	1000	1.0	mg/L	N/A	2016-12-29	
General Parameters							
Alkalinity, Total (as CaCO3)	**146**	N/A	2	mg/L	N/A	2017-01-03	
Alkalinity, Phenolphthalein (as CaCO3)	< 1	N/A	2	mg/L	N/A	2017-01-03	
Alkalinity, Bicarbonate (as CaCO3)	**146**	N/A	2	mg/L	N/A	2017-01-03	
Alkalinity, Carbonate (as CaCO3)	< 1	N/A	2	mg/L	N/A	2017-01-03	
Alkalinity, Hydroxide (as CaCO3)	< 1	N/A	2	mg/L	N/A	2017-01-03	
Ammonia, Total (as N)	**3.30**	1.31	0.02	mg/L	N/A	2016-12-29	
Chemical Oxygen Demand	< 20	N/A	20	mg/L	N/A	2017-01-03	
Conductivity (EC)	**814**	N/A	2	µS/cm	N/A	2017-01-03	
Nitrogen, Total Kjeldahl	**3.25**	N/A	0.05	mg/L	2016-12-29	2016-12-30	
pH	**6.88**	N/A	0.01	pH units	N/A	2017-01-03	HT2
Phosphorus, Total (as P)	**0.042**	N/A	0.002	mg/L	2016-12-29	2016-12-30	
Solids, Total Suspended	**46**	N/A	2	mg/L	N/A	2016-12-29	
Calculated Parameters							
Hardness, Total (as CaCO3)	**327**	N/A	0.50	mg/L	N/A	N/A	
Nitrate (as N)	**0.342**	400	0.010	mg/L	N/A	N/A	
Nitrogen, Total	**3.61**	N/A	1.00	mg/L	N/A	N/A	
Dissolved Metals							
Aluminum, dissolved	**0.021**	N/A	0.005	mg/L	N/A	2016-12-29	
Antimony, dissolved	< 0.0001	0.2	0.0001	mg/L	N/A	2016-12-29	
Arsenic, dissolved	< 0.0005	0.05	0.0005	mg/L	N/A	2016-12-29	
Barium, dissolved	**0.080**	5	0.005	mg/L	N/A	2016-12-29	
Beryllium, dissolved	< 0.0001	0.053	0.0001	mg/L	N/A	2016-12-29	
Bismuth, dissolved	< 0.0001	N/A	0.0001	mg/L	N/A	2016-12-29	
Boron, dissolved	**0.240**	50	0.004	mg/L	N/A	2016-12-29	
Cadmium, dissolved	< 0.00001	0.0001	0.00001	mg/L	N/A	2016-12-29	
Calcium, dissolved	**113**	N/A	0.2	mg/L	N/A	2016-12-29	
Chromium, dissolved	< 0.0005	N/A	0.0005	mg/L	N/A	2016-12-29	
Cobalt, dissolved	**0.00625**	0.04	0.00005	mg/L	N/A	2016-12-29	
Copper, dissolved	**0.0003**	0.02	0.0002	mg/L	N/A	2016-12-29	

REPORTED TO	Morrison Hershfield Limited - Burnaby	**WORK ORDER**	6121583
PROJECT	Whistler Landfill - Summer/Winter	**REPORTED**	2017-01-04

Analyte	Result / *Recovery*	Standard / Guideline	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: GW INT (6121583-10) [Water] Sampled: 2016-12-22 00:00, Continued							
Dissolved Metals, Continued							
Iron, dissolved	**22.3**	N/A	0.010	mg/L	N/A	2016-12-29	
Lead, dissolved	< 0.0001	0.04	0.0001	mg/L	N/A	2016-12-29	
Lithium, dissolved	**0.0004**	N/A	0.0001	mg/L	N/A	2016-12-29	
Magnesium, dissolved	**10.8**	N/A	0.01	mg/L	N/A	2016-12-29	
Manganese, dissolved	**2.63**	N/A	0.0002	mg/L	N/A	2016-12-29	
Mercury, dissolved	< 0.00002	0.001	0.00002	mg/L	2016-12-27	2016-12-27	
Molybdenum, dissolved	**0.0005**	10	0.0001	mg/L	N/A	2016-12-29	
Nickel, dissolved	**0.0039**	0.25	0.0002	mg/L	N/A	2016-12-29	
Phosphorus, dissolved	< 0.02	N/A	0.02	mg/L	N/A	2016-12-29	
Potassium, dissolved	**9.19**	N/A	0.02	mg/L	N/A	2016-12-29	
Selenium, dissolved	< 0.0005	0.01	0.0005	mg/L	N/A	2016-12-29	
Silicon, dissolved	**7.7**	N/A	0.5	mg/L	N/A	2016-12-29	
Silver, dissolved	< 0.00005	0.0005	0.00005	mg/L	N/A	2016-12-29	
Sodium, dissolved	**43.6**	N/A	0.02	mg/L	N/A	2016-12-29	
Strontium, dissolved	**0.777**	N/A	0.001	mg/L	N/A	2016-12-29	
Sulfur, dissolved	**68**	N/A	1	mg/L	N/A	2016-12-29	
Tellurium, dissolved	< 0.0002	N/A	0.0002	mg/L	N/A	2016-12-29	
Thallium, dissolved	< 0.00002	0.003	0.00002	mg/L	N/A	2016-12-29	
Thorium, dissolved	< 0.0001	N/A	0.0001	mg/L	N/A	2016-12-29	
Tin, dissolved	< 0.0002	N/A	0.0002	mg/L	N/A	2016-12-29	
Titanium, dissolved	< 0.005	1	0.005	mg/L	N/A	2016-12-29	
Uranium, dissolved	**0.00003**	1	0.00002	mg/L	N/A	2016-12-29	
Vanadium, dissolved	< 0.001	N/A	0.001	mg/L	N/A	2016-12-29	
Zinc, dissolved	**0.022**	0.075	0.004	mg/L	N/A	2016-12-29	
Zirconium, dissolved	< 0.0001	N/A	0.0001	mg/L	N/A	2016-12-29	
BCMOE Aggregate Hydrocarbons							
EPHw10-19	< 250	5000	250	µg/L	2016-12-28	2016-12-28	
EPHw19-32	< 250	N/A	250	µg/L	2016-12-28	2016-12-28	
LEPHw	< 250	500	250	µg/L	N/A	N/A	
HEPHw	< 250	N/A	250	µg/L	N/A	N/A	
Surrogate: 2-Methylnonane	*91*		*60-140*	%	*2016-12-28*	*2016-12-28*	
Polycyclic Aromatic Hydrocarbons (PAH)							
Acenaphthene	**1.33**	60	0.05	µg/L	2016-12-28	2016-12-28	
Acenaphthylene	< 0.20	N/A	0.20	µg/L	2016-12-28	2016-12-28	
Acridine	< 0.05	0.5	0.05	µg/L	2016-12-28	2016-12-28	
Anthracene	**0.04**	1	0.01	µg/L	2016-12-28	2016-12-28	
Benz (a) anthracene	< 0.01	1	0.01	µg/L	2016-12-28	2016-12-28	
Benzo (a) pyrene	< 0.01	0.1	0.01	µg/L	2016-12-28	2016-12-28	
Benzo (b) fluoranthene	< 0.05	N/A	0.05	µg/L	2016-12-28	2016-12-28	
Benzo (b+j) fluoranthene	< 0.05	N/A	0.05	µg/L	2016-12-28	2016-12-28	
Benzo (g,h,i) perylene	< 0.05	N/A	0.05	µg/L	2016-12-28	2016-12-28	
Benzo (k) fluoranthene	< 0.05	N/A	0.05	µg/L	2016-12-28	2016-12-28	
Chrysene	< 0.05	1	0.05	µg/L	2016-12-28	2016-12-28	
Dibenz (a,h) anthracene	< 0.05	N/A	0.05	µg/L	2016-12-28	2016-12-28	

REPORTED TO	Morrison Hershfield Limited - Burnaby	**WORK ORDER**	6121583
PROJECT	Whistler Landfill - Summer/Winter	**REPORTED**	2017-01-04

Analyte	Result / *Recovery*	Standard / Guideline	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: GW INT (6121583-10) [Water] Sampled: 2016-12-22 00:00, Continued							
Polycyclic Aromatic Hydrocarbons (PAH), Continued							
Fluoranthene	**0.11**	2	0.03	µg/L	2016-12-28	2016-12-28	
Fluorene	**0.50**	120	0.05	µg/L	2016-12-28	2016-12-28	
Indeno (1,2,3-cd) pyrene	< 0.05	N/A	0.05	µg/L	2016-12-28	2016-12-28	
Naphthalene	< 0.20	10	0.20	µg/L	2016-12-28	2016-12-28	
Phenanthrene	< 0.10	3	0.10	µg/L	2016-12-28	2016-12-28	
Pyrene	**0.09**	0.2	0.02	µg/L	2016-12-28	2016-12-28	
Quinoline	< 0.05	34	0.05	µg/L	2016-12-28	2016-12-28	
Surrogate: Acridine-d9	*97*		*60-130*	%	*2016-12-28*	*2016-12-28*	
Surrogate: Naphthalene-d8	*92*		*60-130*	%	*2016-12-28*	*2016-12-28*	
Surrogate: Perylene-d12	*97*		*60-130*	%	*2016-12-28*	*2016-12-28*	
Volatile Organic Compounds (VOC)							
Benzene	< 0.5	1000	0.5	µg/L	2016-12-22	2016-12-24	
Bromodichloromethane	< 1.0	N/A	1.0	µg/L	2016-12-22	2016-12-24	
Bromoform	< 1.0	N/A	1.0	µg/L	2016-12-22	2016-12-24	
Carbon tetrachloride	< 0.5	130	0.5	µg/L	2016-12-22	2016-12-24	
Chlorobenzene	< 1.0	13	1.0	µg/L	2016-12-22	2016-12-24	
Chloroethane	< 2.0	N/A	2.0	µg/L	2016-12-22	2016-12-24	
Chloroform	< 1.0	20	1.0	µg/L	2016-12-22	2016-12-24	
Dibromochloromethane	< 1.0	N/A	1.0	µg/L	2016-12-22	2016-12-24	
1,2-Dibromoethane	< 0.2	N/A	0.2	µg/L	2016-12-22	2016-12-24	
Dibromomethane	< 1.0	N/A	1.0	µg/L	2016-12-22	2016-12-24	
1,2-Dichlorobenzene	< 0.5	7	0.5	µg/L	2016-12-22	2016-12-24	
1,3-Dichlorobenzene	< 1.0	1500	1.0	µg/L	2016-12-22	2016-12-24	
1,4-Dichlorobenzene	< 1.0	260	1.0	µg/L	2016-12-22	2016-12-24	
1,1-Dichloroethane	< 1.0	N/A	1.0	µg/L	2016-12-22	2016-12-24	
1,2-Dichloroethane	< 1.0	1000	1.0	µg/L	2016-12-22	2016-12-24	
1,1-Dichloroethene	< 1.0	N/A	1.0	µg/L	2016-12-22	2016-12-24	
cis-1,2-Dichloroethene	< 1.0	N/A	1.0	µg/L	2016-12-22	2016-12-24	
trans-1,2-Dichloroethene	< 1.0	N/A	1.0	µg/L	2016-12-22	2016-12-24	
1,2-Dichloropropane	< 1.0	N/A	1.0	µg/L	2016-12-22	2016-12-24	
1,3-Dichloropropene	< 1.0	N/A	1.0	µg/L	2016-12-22	2016-12-24	
Ethylbenzene	< 1.0	2000	1.0	µg/L	2016-12-22	2016-12-24	
Methyl tert-butyl ether	< 1.0	4400	1.0	µg/L	2016-12-22	2017-01-01	
Methylene chloride	< 3.0	980	3.0	µg/L	2016-12-22	2016-12-24	
Styrene	< 1.0	720	1.0	µg/L	2016-12-22	2016-12-24	
1,1,2,2-Tetrachloroethane	< 0.5	N/A	0.5	µg/L	2016-12-22	2016-12-24	
Tetrachloroethene	< 1.0	1100	1.0	µg/L	2016-12-22	2016-12-24	
Toluene	< 1.0	390	1.0	µg/L	2016-12-22	2016-12-24	
1,1,1-Trichloroethane	< 1.0	N/A	1.0	µg/L	2016-12-22	2016-12-24	
1,1,2-Trichloroethane	< 1.0	N/A	1.0	µg/L	2016-12-22	2016-12-24	
Trichloroethene	< 1.0	200	1.0	µg/L	2016-12-22	2016-12-24	
Trichlorofluoromethane	< 1.0	N/A	1.0	µg/L	2016-12-22	2016-12-24	
Vinyl chloride	< 1.0	N/A	1.0	µg/L	2016-12-22	2016-12-24	
Xylenes (total)	< 2.0	N/A	2.0	µg/L	2016-12-22	2016-12-24	
Surrogate: Toluene-d8	*110*		*70-130*	%	*2016-12-22*	*2016-12-24*	

REPORTED TO	Morrison Hershfield Limited - Burnaby	**WORK ORDER**	6121583
PROJECT	Whistler Landfill - Summer/Winter	**REPORTED**	2017-01-04

Analyte	Result / *Recovery*	Standard / Guideline	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: GW INT (6121583-10) [Water] Sampled: 2016-12-22 00:00, Continued							
Volatile Organic Compounds (VOC), Continued							
Surrogate: 4-Bromofluorobenzene	*104*		*70-130*	%	*2016-12-22*	*2016-12-24*	
Surrogate: 1,4-Dichlorobenzene-d4	*109*		*70-130*	%	*2016-12-22*	*2016-12-24*	
Sample ID: TRIP BLANK (6121583-12) [Water] Sampled: 2016-12-22 00:00							
Anions							
Bromide	< 0.10	N/A	0.10	mg/L	N/A	2016-12-29	
Chloride	< 0.10	1500	0.10	mg/L	N/A	2016-12-29	
Fluoride	< 0.10	2	0.1	mg/L	N/A	2016-12-29	
Nitrate+Nitrite (as N)	< 0.005	400	0.005	mg/L	N/A	2016-12-30	
Nitrite (as N)	< 0.005	0.2	0.005	mg/L	2016-12-23	2016-12-23	
Sulfate	< 1.0	1000	1.0	mg/L	N/A	2016-12-29	
General Parameters							
Alkalinity, Total (as CaCO3)	< 1	N/A	2	mg/L	N/A	2017-01-03	
Alkalinity, Phenolphthalein (as CaCO3)	< 1	N/A	2	mg/L	N/A	2017-01-03	
Alkalinity, Bicarbonate (as CaCO3)	< 1	N/A	2	mg/L	N/A	2017-01-03	
Alkalinity, Carbonate (as CaCO3)	< 1	N/A	2	mg/L	N/A	2017-01-03	
Alkalinity, Hydroxide (as CaCO3)	< 1	N/A	2	mg/L	N/A	2017-01-03	
Ammonia, Total (as N)	< 0.020	1.31	0.02	mg/L	N/A	2016-12-29	
Chemical Oxygen Demand	< 20	N/A	20	mg/L	N/A	2017-01-03	
Conductivity (EC)	< 2	N/A	2	µS/cm	N/A	2017-01-03	
Nitrogen, Total Kjeldahl	< 0.05	N/A	0.05	mg/L	2016-12-29	2016-12-30	
pH	**5.68**	N/A	0.01	pH units	N/A	2017-01-03	HT2
Phosphorus, Total (as P)	< 0.002	N/A	0.002	mg/L	2016-12-29	2016-12-30	
Solids, Total Suspended	< 2	N/A	2	mg/L	N/A	2016-12-29	
Calculated Parameters							
Hardness, Total (as CaCO3)	< 0.50	N/A	0.50	mg/L	N/A	N/A	
Nitrate (as N)	< 0.010	400	0.010	mg/L	N/A	N/A	
Nitrogen, Total	< 0.050	N/A	0.050	mg/L	N/A	N/A	
Dissolved Metals							
Aluminum, dissolved	< 0.005	N/A	0.005	mg/L	N/A	2016-12-29	
Antimony, dissolved	< 0.0001	0.2	0.0001	mg/L	N/A	2016-12-29	
Arsenic, dissolved	< 0.0005	0.05	0.0005	mg/L	N/A	2016-12-29	
Barium, dissolved	< 0.005	5	0.005	mg/L	N/A	2016-12-29	
Beryllium, dissolved	< 0.0001	0.053	0.0001	mg/L	N/A	2016-12-29	
Bismuth, dissolved	< 0.0001	N/A	0.0001	mg/L	N/A	2016-12-29	
Boron, dissolved	< 0.004	50	0.004	mg/L	N/A	2016-12-29	
Cadmium, dissolved	< 0.00001	0.0001	0.00001	mg/L	N/A	2016-12-29	
Calcium, dissolved	< 0.2	N/A	0.2	mg/L	N/A	2016-12-29	
Chromium, dissolved	< 0.0005	N/A	0.0005	mg/L	N/A	2016-12-29	
Cobalt, dissolved	< 0.00005	0.04	0.00005	mg/L	N/A	2016-12-29	
Copper, dissolved	< 0.0002	0.02	0.0002	mg/L	N/A	2016-12-29	
Iron, dissolved	< 0.010	N/A	0.010	mg/L	N/A	2016-12-29	
Lead, dissolved	< 0.0001	0.04	0.0001	mg/L	N/A	2016-12-29	

REPORTED TO	Morrison Hershfield Limited - Burnaby	**WORK ORDER**	6121583
PROJECT	Whistler Landfill - Summer/Winter	**REPORTED**	2017-01-04

Analyte	Result / *Recovery*	Standard / Guideline	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: TRIP BLANK (6121583-12) [Water] Sampled: 2016-12-22 00:00, Continued							
Dissolved Metals, Continued							
Lithium, dissolved	< 0.0001	N/A	0.0001	mg/L	N/A	2016-12-29	
Magnesium, dissolved	< 0.01	N/A	0.01	mg/L	N/A	2016-12-29	
Manganese, dissolved	< 0.0002	N/A	0.0002	mg/L	N/A	2016-12-29	
Mercury, dissolved	< 0.00002	0.001	0.00002	mg/L	2016-12-27	2016-12-27	
Molybdenum, dissolved	< 0.0001	10	0.0001	mg/L	N/A	2016-12-29	
Nickel, dissolved	< 0.0002	0.25	0.0002	mg/L	N/A	2016-12-29	
Phosphorus, dissolved	< 0.02	N/A	0.02	mg/L	N/A	2016-12-29	
Potassium, dissolved	< 0.02	N/A	0.02	mg/L	N/A	2016-12-29	
Selenium, dissolved	< 0.0005	0.01	0.0005	mg/L	N/A	2016-12-29	
Silicon, dissolved	< 0.5	N/A	0.5	mg/L	N/A	2016-12-29	
Silver, dissolved	< 0.00005	0.0005	0.00005	mg/L	N/A	2016-12-29	
Sodium, dissolved	< 0.02	N/A	0.02	mg/L	N/A	2016-12-29	
Strontium, dissolved	< 0.001	N/A	0.001	mg/L	N/A	2016-12-29	
Sulfur, dissolved	< 1	N/A	1	mg/L	N/A	2016-12-29	
Tellurium, dissolved	< 0.0002	N/A	0.0002	mg/L	N/A	2016-12-29	
Thallium, dissolved	< 0.00002	0.003	0.00002	mg/L	N/A	2016-12-29	
Thorium, dissolved	< 0.0001	N/A	0.0001	mg/L	N/A	2016-12-29	
Tin, dissolved	< 0.0002	N/A	0.0002	mg/L	N/A	2016-12-29	
Titanium, dissolved	< 0.005	1	0.005	mg/L	N/A	2016-12-29	
Uranium, dissolved	< 0.00002	1	0.00002	mg/L	N/A	2016-12-29	
Vanadium, dissolved	< 0.001	N/A	0.001	mg/L	N/A	2016-12-29	
Zinc, dissolved	< 0.004	0.075	0.004	mg/L	N/A	2016-12-29	
Zirconium, dissolved	< 0.0001	N/A	0.0001	mg/L	N/A	2016-12-29	
BCMOE Aggregate Hydrocarbons							
EPHw10-19	< 250	5000	250	µg/L	2016-12-28	2016-12-28	
EPHw19-32	< 250	N/A	250	µg/L	2016-12-28	2016-12-28	
LEPHw	< 250	500	250	µg/L	N/A	N/A	
HEPHw	< 250	N/A	250	µg/L	N/A	N/A	
Surrogate: 2-Methylnonane	*94*		*60-140*	%	*2016-12-28*	*2016-12-28*	
Polycyclic Aromatic Hydrocarbons (PAH)							
Acenaphthene	< 0.05	60	0.05	µg/L	2016-12-28	2016-12-28	
Acenaphthylene	< 0.20	N/A	0.20	µg/L	2016-12-28	2016-12-28	
Acridine	< 0.05	0.5	0.05	µg/L	2016-12-28	2016-12-28	
Anthracene	< 0.01	1	0.01	µg/L	2016-12-28	2016-12-28	
Benz (a) anthracene	< 0.01	1	0.01	µg/L	2016-12-28	2016-12-28	
Benzo (a) pyrene	< 0.01	0.1	0.01	µg/L	2016-12-28	2016-12-28	
Benzo (b) fluoranthene	< 0.05	N/A	0.05	µg/L	2016-12-28	2016-12-28	
Benzo (b+j) fluoranthene	< 0.05	N/A	0.05	µg/L	2016-12-28	2016-12-28	
Benzo (g,h,i) perylene	< 0.05	N/A	0.05	µg/L	2016-12-28	2016-12-28	
Benzo (k) fluoranthene	< 0.05	N/A	0.05	µg/L	2016-12-28	2016-12-28	
Chrysene	< 0.05	1	0.05	µg/L	2016-12-28	2016-12-28	
Dibenz (a,h) anthracene	< 0.05	N/A	0.05	µg/L	2016-12-28	2016-12-28	
Fluoranthene	< 0.03	2	0.03	µg/L	2016-12-28	2016-12-28	
Fluorene	< 0.05	120	0.05	µg/L	2016-12-28	2016-12-28	

REPORTED TO	Morrison Hershfield Limited - Burnaby	**WORK ORDER**	6121583
PROJECT	Whistler Landfill - Summer/Winter	**REPORTED**	2017-01-04

Analyte	Result / *Recovery*	Standard / Guideline	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: TRIP BLANK (6121583-12) [Water] Sampled: 2016-12-22 00:00, Continued							
Polycyclic Aromatic Hydrocarbons (PAH), Continued							
Indeno (1,2,3-cd) pyrene	< 0.05	N/A	0.05	µg/L	2016-12-28	2016-12-28	
Naphthalene	< 0.20	10	0.20	µg/L	2016-12-28	2016-12-28	
Phenanthrene	< 0.10	3	0.10	µg/L	2016-12-28	2016-12-28	
Pyrene	< 0.02	0.2	0.02	µg/L	2016-12-28	2016-12-28	
Quinoline	< 0.05	34	0.05	µg/L	2016-12-28	2016-12-28	
Surrogate: Acridine-d9	*95*		*60-130*	%	*2016-12-28*	*2016-12-28*	
Surrogate: Naphthalene-d8	*92*		*60-130*	%	*2016-12-28*	*2016-12-28*	
Surrogate: Perylene-d12	*102*		*60-130*	%	*2016-12-28*	*2016-12-28*	
Volatile Organic Compounds (VOC)							
Benzene	< 0.5	1000	0.5	µg/L	2016-12-22	2016-12-24	
Bromodichloromethane	< 1.0	N/A	1.0	µg/L	2016-12-22	2016-12-24	
Bromoform	< 1.0	N/A	1.0	µg/L	2016-12-22	2016-12-24	
Carbon tetrachloride	< 0.5	130	0.5	µg/L	2016-12-22	2016-12-24	
Chlorobenzene	< 1.0	13	1.0	µg/L	2016-12-22	2016-12-24	
Chloroethane	< 2.0	N/A	2.0	µg/L	2016-12-22	2016-12-24	
Chloroform	< 1.0	20	1.0	µg/L	2016-12-22	2016-12-24	
Dibromochloromethane	< 1.0	N/A	1.0	µg/L	2016-12-22	2016-12-24	
1,2-Dibromoethane	< 0.2	N/A	0.2	µg/L	2016-12-22	2016-12-24	
Dibromomethane	< 1.0	N/A	1.0	µg/L	2016-12-22	2016-12-24	
1,2-Dichlorobenzene	< 0.5	7	0.5	µg/L	2016-12-22	2016-12-24	
1,3-Dichlorobenzene	< 1.0	1500	1.0	µg/L	2016-12-22	2016-12-24	
1,4-Dichlorobenzene	< 1.0	260	1.0	µg/L	2016-12-22	2016-12-24	
1,1-Dichloroethane	< 1.0	N/A	1.0	µg/L	2016-12-22	2016-12-24	
1,2-Dichloroethane	< 1.0	1000	1.0	µg/L	2016-12-22	2016-12-24	
1,1-Dichloroethene	< 1.0	N/A	1.0	µg/L	2016-12-22	2016-12-24	
cis-1,2-Dichloroethene	< 1.0	N/A	1.0	µg/L	2016-12-22	2016-12-24	
trans-1,2-Dichloroethene	< 1.0	N/A	1.0	µg/L	2016-12-22	2016-12-24	
1,2-Dichloropropane	< 1.0	N/A	1.0	µg/L	2016-12-22	2016-12-24	
1,3-Dichloropropene	< 1.0	N/A	1.0	µg/L	2016-12-22	2016-12-24	
Ethylbenzene	< 1.0	2000	1.0	µg/L	2016-12-22	2016-12-24	
Methyl tert-butyl ether	< 1.0	4400	1.0	µg/L	2016-12-22	2017-01-01	
Methylene chloride	< 3.0	980	3.0	µg/L	2016-12-22	2016-12-24	
Styrene	< 1.0	720	1.0	µg/L	2016-12-22	2016-12-24	
1,1,2,2-Tetrachloroethane	< 0.5	N/A	0.5	µg/L	2016-12-22	2016-12-24	
Tetrachloroethene	< 1.0	1100	1.0	µg/L	2016-12-22	2016-12-24	
Toluene	< 1.0	390	1.0	µg/L	2016-12-22	2016-12-24	
1,1,1-Trichloroethane	< 1.0	N/A	1.0	µg/L	2016-12-22	2016-12-24	
1,1,2-Trichloroethane	< 1.0	N/A	1.0	µg/L	2016-12-22	2016-12-24	
Trichloroethene	< 1.0	200	1.0	µg/L	2016-12-22	2016-12-24	
Trichlorofluoromethane	< 1.0	N/A	1.0	µg/L	2016-12-22	2016-12-24	
Vinyl chloride	< 1.0	N/A	1.0	µg/L	2016-12-22	2016-12-24	
Xylenes (total)	< 2.0	N/A	2.0	µg/L	2016-12-22	2016-12-24	
Surrogate: Toluene-d8	*107*		*70-130*	%	*2016-12-22*	*2016-12-24*	
Surrogate: 4-Bromofluorobenzene	*100*		*70-130*	%	*2016-12-22*	*2016-12-24*	
Surrogate: 1,4-Dichlorobenzene-d4	*102*		*70-130*	%	*2016-12-22*	*2016-12-24*	

REPORTED TO	Morrison Hershfield Limited - Burnaby	**WORK ORDER**	6121583
PROJECT	Whistler Landfill - Summer/Winter	**REPORTED**	2017-01-04

Analyte	Result / *Recovery*	Standard / Guideline	MRL / *Limits*	Units	Prepared	Analyzed	Notes

Sample / Analysis Qualifiers:

HT2 The 15 minute recommended holding time (from sampling to analysis) has been exceeded - field analysis is recommended.

REPORTED TO	Morrison Hershfield Limited - Burnaby	**WORK ORDER**	6121583
PROJECT	Whistler Landfill - Summer/Winter	**REPORTED**	2017-01-04

The following section displays the quality control (QC) data that is associated with your sample data. Groups of samples are prepared in "batches" and analyzed in conjunction with QC samples that ensure your data is of the highest quality. Common QC types include:

- **Method Blank (Blk)**: Laboratory reagent water is carried through sample preparation and analysis steps. Method Blanks indicate that results are free from contamination, i.e. not biased high from sources such as the sample container or the laboratory environment
- **Duplicate (Dup)**: Preparation and analysis of a replicate aliquot of a sample. Duplicates provide a measure of the analytical method's precision, i.e. how reproducible a result is. Duplicates are only reported if they are associated with your sample data.
- **Blank Spike (BS)**: A known amount of standard is carried through sample preparation and analysis steps. Blank Spikes, also known as laboratory control samples (LCS), are prepared from a different source of standard than used for the calibration. They ensure that the calibration is acceptable (i.e. not biased high or low) and also provide a measure of the analytical method's accuracy (i.e. closeness of the result to a target value).
- **Standard Reference Material (SRM)**: A material of similar matrix to the samples, externally certified for the parameter(s) listed. Standard Reference Materials ensure that the preparation steps in the method are adequate to achieve acceptable recoveries of the parameter(s) tested.

Each QC type is analyzed at a 5-10% frequency, i.e. one blank/duplicate/spike for every 10 samples. For all types of QC, the specified recovery (% Rec) and relative percent difference (RPD) limits are derived from long-term method performance averages and/or prescribed by the reference method.

Analyte	Result	MRL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Notes
Anions, Batch B6L1416										
Blank (B6L1416-BLK1)				Prepared: 2016-12-23, Analyzed: 2016-12-23						
Nitrite (as N)	< 0.005	0.005	mg/L							
Blank (B6L1416-BLK2)				Prepared: 2016-12-23, Analyzed: 2016-12-23						
Nitrite (as N)	< 0.005	0.005	mg/L							
LCS (B6L1416-BS1)				Prepared: 2016-12-23, Analyzed: 2016-12-23						
Nitrite (as N)	0.050	0.005	mg/L	0.0500		100	90-110			
LCS (B6L1416-BS2)				Prepared: 2016-12-23, Analyzed: 2016-12-23						
Nitrite (as N)	0.050	0.005	mg/L	0.0500		99	90-110			
Duplicate (B6L1416-DUP2)		**Source: 6121583-10**		Prepared: 2016-12-23, Analyzed: 2016-12-23						
Nitrite (as N)	0.011	0.005	mg/L		0.011				20	
Anions, Batch B6L1549										
Blank (B6L1549-BLK1)				Prepared: 2016-12-29, Analyzed: 2016-12-29						
Bromide	< 0.10	0.10	mg/L							
Chloride	< 0.10	0.10	mg/L							
Fluoride	< 0.10	0.01	mg/L							
Sulfate	< 1.0	1.0	mg/L							
Blank (B6L1549-BLK2)				Prepared: 2016-12-30, Analyzed: 2016-12-30						
Bromide	< 0.10	0.10	mg/L							
Chloride	< 0.10	0.10	mg/L							
Fluoride	< 0.10	0.01	mg/L							
Sulfate	< 1.0	1.0	mg/L							
LCS (B6L1549-BS1)				Prepared: 2016-12-29, Analyzed: 2016-12-29						
Bromide	3.94	0.10	mg/L	4.00		99	85-115			
Chloride	16.0	0.10	mg/L	16.0		100	90-110			
Fluoride	3.92	0.01	mg/L	4.00		98	88-108			
Sulfate	16.2	1.0	mg/L	16.0		101	91-109			

REPORTED TO	Morrison Hershfield Limited - Burnaby	**WORK ORDER**	6121583
PROJECT	Whistler Landfill - Summer/Winter	**REPORTED**	2017-01-04

Analyte	Result	MRL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Notes
Anions, Batch B6L1549, Continued										
LCS (B6L1549-BS2)				Prepared: 2016-12-30, Analyzed: 2016-12-30						
Bromide	4.00	0.10	mg/L	4.00		100	85-115			
Chloride	16.0	0.10	mg/L	16.0		100	90-110			
Fluoride	3.51	0.01	mg/L	4.00		88	88-108			
Sulfate	15.7	1.0	mg/L	16.0		98	91-109			
Anions, Batch B6L1556										
Blank (B6L1556-BLK1)				Prepared: 2016-12-30, Analyzed: 2016-12-30						
Nitrate+Nitrite (as N)	< 0.005	0.005	mg/L							
Blank (B6L1556-BLK2)				Prepared: 2016-12-30, Analyzed: 2016-12-30						
Nitrate+Nitrite (as N)	< 0.005	0.005	mg/L							
LCS (B6L1556-BS1)				Prepared: 2016-12-30, Analyzed: 2016-12-30						
Nitrate+Nitrite (as N)	0.505	0.005	mg/L	0.500		101	91-108			
LCS (B6L1556-BS2)				Prepared: 2016-12-30, Analyzed: 2016-12-30						
Nitrate+Nitrite (as N)	0.508	0.005	mg/L	0.500		102	91-108			
Duplicate (B6L1556-DUP1)		**Source: 6121583-03**		Prepared: 2016-12-30, Analyzed: 2016-12-30						
Nitrate+Nitrite (as N)	0.143	0.005	mg/L		0.143			< 1	15	
Matrix Spike (B6L1556-MS1)		**Source: 6121583-03**		Prepared: 2016-12-30, Analyzed: 2016-12-30						
Nitrate+Nitrite (as N)	0.249	0.005	mg/L	0.125	0.143	85	81-118			
BCMOE Aggregate Hydrocarbons, Batch B6L1443										
Blank (B6L1443-BLK1)				Prepared: 2016-12-27, Analyzed: 2016-12-28						
EPHw10-19	< 250	250	µg/L							
EPHw19-32	< 250	250	µg/L							
Surrogate: 2-Methylnonane	*407*		*µg/L*	444		*92*	*60-140*			
LCS (B6L1443-BS2)				Prepared: 2016-12-27, Analyzed: 2016-12-28						
EPHw10-19	17600	250	µg/L	15600		113	70-130			
EPHw19-32	20300	250	µg/L	22200		91	70-130			
Surrogate: 2-Methylnonane	*460*		*µg/L*	444		*104*	*60-140*			
Dissolved Metals, Batch B6L1440										
Blank (B6L1440-BLK1)				Prepared: 2016-12-27, Analyzed: 2016-12-27						
Mercury, dissolved	< 0.00002	0.00002	mg/L							
Reference (B6L1440-SRM1)				Prepared: 2016-12-27, Analyzed: 2016-12-27						
Mercury, dissolved	0.00445	0.00002	mg/L	0.00489		91	50-150			
Dissolved Metals, Batch B6L1497										
Blank (B6L1497-BLK1)				Prepared: 2016-12-29, Analyzed: 2016-12-29						
Aluminum, dissolved	< 0.005	0.005	mg/L							
Antimony, dissolved	< 0.0001	0.0001	mg/L							
Arsenic, dissolved	< 0.0005	0.0005	mg/L							
Barium, dissolved	< 0.005	0.005	mg/L							
Beryllium, dissolved	< 0.0001	0.0001	mg/L							
Bismuth, dissolved	< 0.0001	0.0001	mg/L							
Boron, dissolved	< 0.004	0.004	mg/L							

REPORTED TO	Morrison Hershfield Limited - Burnaby	**WORK ORDER**	6121583
PROJECT	Whistler Landfill - Summer/Winter	**REPORTED**	2017-01-04

Analyte	Result	MRL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Notes
Dissolved Metals, Batch B6L1497, Continued										
Blank (B6L1497-BLK1), Continued				Prepared: 2016-12-29, Analyzed: 2016-12-29						
Cadmium, dissolved	< 0.00001	0.00001	mg/L							
Calcium, dissolved	< 0.2	0.2	mg/L							
Chromium, dissolved	< 0.0005	0.0005	mg/L							
Cobalt, dissolved	< 0.00005	0.00005	mg/L							
Copper, dissolved	< 0.0002	0.0002	mg/L							
Iron, dissolved	< 0.010	0.010	mg/L							
Lead, dissolved	< 0.0001	0.0001	mg/L							
Lithium, dissolved	< 0.0001	0.0001	mg/L							
Magnesium, dissolved	< 0.01	0.01	mg/L							
Manganese, dissolved	< 0.0002	0.0002	mg/L							
Molybdenum, dissolved	< 0.0001	0.0001	mg/L							
Nickel, dissolved	< 0.0002	0.0002	mg/L							
Phosphorus, dissolved	< 0.02	0.02	mg/L							
Potassium, dissolved	< 0.02	0.02	mg/L							
Selenium, dissolved	< 0.0005	0.0005	mg/L							
Silicon, dissolved	< 0.5	0.5	mg/L							
Silver, dissolved	< 0.00005	0.00005	mg/L							
Sodium, dissolved	< 0.02	0.02	mg/L							
Strontium, dissolved	< 0.001	0.001	mg/L							
Sulfur, dissolved	< 1	1	mg/L							
Tellurium, dissolved	< 0.0002	0.0002	mg/L							
Thallium, dissolved	< 0.00002	0.00002	mg/L							
Thorium, dissolved	< 0.0001	0.0001	mg/L							
Tin, dissolved	< 0.0002	0.0002	mg/L							
Titanium, dissolved	< 0.005	0.005	mg/L							
Uranium, dissolved	< 0.00002	0.00002	mg/L							
Vanadium, dissolved	< 0.001	0.001	mg/L							
Zinc, dissolved	< 0.004	0.004	mg/L							
Zirconium, dissolved	< 0.0001	0.0001	mg/L							
Duplicate (B6L1497-DUP1)		**Source: 6121583-01**		Prepared: 2016-12-29, Analyzed: 2016-12-29						
Aluminum, dissolved	< 0.005	0.005	mg/L		< 0.005				11	
Antimony, dissolved	< 0.0001	0.0001	mg/L		< 0.0001				44	
Arsenic, dissolved	0.0148	0.0005	mg/L		0.0150			1	8	
Barium, dissolved	0.033	0.005	mg/L		0.033			2	7	
Beryllium, dissolved	< 0.0001	0.0001	mg/L		< 0.0001				14	
Bismuth, dissolved	< 0.0001	0.0001	mg/L		< 0.0001				20	
Boron, dissolved	0.295	0.004	mg/L		0.306			4	13	
Cadmium, dissolved	0.00001	0.00001	mg/L		< 0.00001				27	
Calcium, dissolved	143	0.2	mg/L		148			4	8	
Chromium, dissolved	< 0.0005	0.0005	mg/L		< 0.0005				14	
Cobalt, dissolved	0.0144	0.00005	mg/L		0.0147			1	10	
Copper, dissolved	< 0.0002	0.0002	mg/L		0.0002				28	
Iron, dissolved	62.1	0.010	mg/L		63.4			2	14	
Lead, dissolved	< 0.0001	0.0001	mg/L		< 0.0001				26	
Lithium, dissolved	< 0.0001	0.0001	mg/L		0.0001				14	
Magnesium, dissolved	17.6	0.01	mg/L		18.4			5	6	
Manganese, dissolved	4.02	0.0002	mg/L		4.17			3	9	
Molybdenum, dissolved	0.0149	0.0001	mg/L		0.0151			1	19	
Nickel, dissolved	0.0028	0.0002	mg/L		0.0029			4	21	
Phosphorus, dissolved	0.09	0.02	mg/L		0.10			3	14	
Potassium, dissolved	20.0	0.02	mg/L		20.9			4	8	
Selenium, dissolved	< 0.0005	0.0005	mg/L		< 0.0005				36	
Silicon, dissolved	14.0	0.5	mg/L		14.9			6	12	
Silver, dissolved	< 0.00005	0.00005	mg/L		< 0.00005				20	
Sodium, dissolved	33.0	0.02	mg/L		34.6			5	6	
Strontium, dissolved	0.567	0.001	mg/L		0.585			3	6	

REPORTED TO Morrison Hershfield Limited - Burnaby
PROJECT Whistler Landfill - Summer/Winter

WORK ORDER 6121583
REPORTED 2017-01-04

Analyte	Result	MRL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Notes
Dissolved Metals, Batch B6L1497, Continued										
Duplicate (B6L1497-DUP1), Continued		**Source: 6121583-01**		Prepared: 2016-12-29, Analyzed: 2016-12-29						
Sulfur, dissolved	89	1	mg/L		93			4	26	
Tellurium, dissolved	< 0.0002	0.0002	mg/L		< 0.0002				20	
Thallium, dissolved	< 0.00002	0.00002	mg/L		< 0.00002				13	
Thorium, dissolved	< 0.0001	0.0001	mg/L		< 0.0001				30	
Tin, dissolved	< 0.0002	0.0002	mg/L		< 0.0002				6	
Titanium, dissolved	< 0.005	0.005	mg/L		< 0.005				20	
Uranium, dissolved	0.00023	0.00002	mg/L		0.00022			2	14	
Vanadium, dissolved	< 0.001	0.001	mg/L		< 0.001				20	
Zinc, dissolved	0.004	0.004	mg/L		0.004				11	
Zirconium, dissolved	0.0001	0.0001	mg/L		0.0001				36	
Matrix Spike (B6L1497-MS1)		**Source: 6121583-02**		Prepared: 2016-12-29, Analyzed: 2016-12-29						
Antimony, dissolved	0.373	0.0001	mg/L	0.400	< 0.0001	93	76-114			
Arsenic, dissolved	0.224	0.0005	mg/L	0.200	0.0094	107	81-115			
Barium, dissolved	1.10	0.005	mg/L	1.00	0.113	98	80-113			
Beryllium, dissolved	0.0923	0.0001	mg/L	0.100	< 0.0001	92	69-109			
Cadmium, dissolved	0.103	0.00001	mg/L	0.100	< 0.00001	103	83-110			
Chromium, dissolved	0.414	0.0005	mg/L	0.400	< 0.0005	103	85-115			
Cobalt, dissolved	0.417	0.00005	mg/L	0.400	0.00278	103	86-114			
Copper, dissolved	0.422	0.0002	mg/L	0.400	< 0.0002	105	82-119			
Iron, dissolved	48.7	0.010	mg/L	2.00	50.4	NR	80-116			SPK1
Lead, dissolved	0.210	0.0001	mg/L	0.200	< 0.0001	105	83-112			
Manganese, dissolved	2.72	0.0002	mg/L	0.400	2.44	70	62-131			
Nickel, dissolved	0.418	0.0002	mg/L	0.400	0.0008	104	81-115			
Selenium, dissolved	0.112	0.0005	mg/L	0.100	< 0.0005	112	79-115			
Silver, dissolved	0.117	0.00005	mg/L	0.100	< 0.00005	117	69-121			
Thallium, dissolved	0.102	0.00002	mg/L	0.100	< 0.00002	102	84-115			
Vanadium, dissolved	0.427	0.001	mg/L	0.400	< 0.001	107	83-113			
Zinc, dissolved	1.12	0.004	mg/L	1.00	< 0.004	112	82-115			
Reference (B6L1497-SRM1)				Prepared: 2016-12-29, Analyzed: 2016-12-29						
Aluminum, dissolved	0.224	0.005	mg/L	0.233		96	58-142			
Antimony, dissolved	0.0449	0.0001	mg/L	0.0430		105	75-125			
Arsenic, dissolved	0.474	0.0005	mg/L	0.438		108	81-119			
Barium, dissolved	3.34	0.005	mg/L	3.35		100	83-117			
Beryllium, dissolved	0.201	0.0001	mg/L	0.213		94	80-120			
Boron, dissolved	1.62	0.004	mg/L	1.74		93	74-117			
Cadmium, dissolved	0.235	0.00001	mg/L	0.224		105	83-117			
Calcium, dissolved	7.6	0.2	mg/L	7.69		99	76-124			
Chromium, dissolved	0.457	0.0005	mg/L	0.437		105	81-119			
Cobalt, dissolved	0.137	0.00005	mg/L	0.128		107	76-124			
Copper, dissolved	0.909	0.0002	mg/L	0.844		108	84-116			
Iron, dissolved	1.32	0.010	mg/L	1.29		103	74-126			
Lead, dissolved	0.122	0.0001	mg/L	0.112		109	72-128			
Lithium, dissolved	0.0985	0.0001	mg/L	0.104		95	60-140			
Magnesium, dissolved	7.03	0.01	mg/L	6.92		102	81-119			
Manganese, dissolved	0.354	0.0002	mg/L	0.345		103	84-116			
Molybdenum, dissolved	0.422	0.0001	mg/L	0.426		99	83-117			
Nickel, dissolved	0.895	0.0002	mg/L	0.840		107	74-126			
Phosphorus, dissolved	0.50	0.02	mg/L	0.495		101	68-132			
Potassium, dissolved	3.26	0.02	mg/L	3.19		102	74-126			
Selenium, dissolved	0.0341	0.0005	mg/L	0.0331		103	70-130			
Sodium, dissolved	19.4	0.02	mg/L	19.1		101	72-128			
Strontium, dissolved	0.893	0.001	mg/L	0.916		98	84-113			
Thallium, dissolved	0.0424	0.00002	mg/L	0.0393		108	57-143			
Uranium, dissolved	0.296	0.00002	mg/L	0.266		111	85-115			
Vanadium, dissolved	0.934	0.001	mg/L	0.869		107	87-113			

REPORTED TO Morrison Hershfield Limited - Burnaby
PROJECT Whistler Landfill - Summer/Winter

WORK ORDER 6121583
REPORTED 2017-01-04

Analyte	Result	MRL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Notes
Dissolved Metals, Batch B6L1497, Continued										
Reference (B6L1497-SRM1), Continued				Prepared: 2016-12-29, Analyzed: 2016-12-29						
Zinc, dissolved	0.995	0.004	mg/L	0.881		113	72-128			
General Parameters, Batch B6L1439										
Blank (B6L1439-BLK1)				Prepared: 2016-12-29, Analyzed: 2016-12-29						
Ammonia, Total (as N)	< 0.020	0.005	mg/L							
Blank (B6L1439-BLK2)				Prepared: 2016-12-29, Analyzed: 2016-12-29						
Ammonia, Total (as N)	< 0.020	0.005	mg/L							
LCS (B6L1439-BS1)				Prepared: 2016-12-29, Analyzed: 2016-12-29						
Ammonia, Total (as N)	1.09	0.005	mg/L	1.00		109	86-111			
LCS (B6L1439-BS2)				Prepared: 2016-12-29, Analyzed: 2016-12-29						
Ammonia, Total (as N)	1.02	0.005	mg/L	1.00		102	86-111			
General Parameters, Batch B6L1460										
Blank (B6L1460-BLK1)				Prepared: 2016-12-29, Analyzed: 2016-12-29						
Solids, Total Suspended	< 2	2	mg/L							
Blank (B6L1460-BLK2)				Prepared: 2016-12-29, Analyzed: 2016-12-29						
Solids, Total Suspended	< 2	2	mg/L							
LCS (B6L1460-BS1)				Prepared: 2016-12-29, Analyzed: 2016-12-29						
Solids, Total Suspended	49	2	mg/L	51.0		97	83-107			
LCS (B6L1460-BS2)				Prepared: 2016-12-29, Analyzed: 2016-12-29						
Solids, Total Suspended	50	2	mg/L	53.0		94	83-107			
Duplicate (B6L1460-DUP2)		**Source: 6121583-04**		Prepared: 2016-12-29, Analyzed: 2016-12-29						
Solids, Total Suspended	686	2	mg/L		665			3	26	
General Parameters, Batch B6L1520										
Blank (B6L1520-BLK1)				Prepared: 2017-01-03, Analyzed: 2017-01-03						
Alkalinity, Total (as CaCO3)	< 1	2	mg/L							
Alkalinity, Phenolphthalein (as CaCO3)	< 1	2	mg/L							
Alkalinity, Bicarbonate (as CaCO3)	< 1	2	mg/L							
Alkalinity, Carbonate (as CaCO3)	< 1	2	mg/L							
Alkalinity, Hydroxide (as CaCO3)	< 1	2	mg/L							
Conductivity (EC)	< 2	2	µS/cm							
Blank (B6L1520-BLK2)				Prepared: 2017-01-03, Analyzed: 2017-01-03						
Alkalinity, Total (as CaCO3)	< 1	2	mg/L							
Alkalinity, Phenolphthalein (as CaCO3)	< 1	2	mg/L							
Alkalinity, Bicarbonate (as CaCO3)	< 1	2	mg/L							
Alkalinity, Carbonate (as CaCO3)	< 1	2	mg/L							
Alkalinity, Hydroxide (as CaCO3)	< 1	2	mg/L							
Conductivity (EC)	< 2	2	µS/cm							
LCS (B6L1520-BS1)				Prepared: 2017-01-03, Analyzed: 2017-01-03						
Alkalinity, Total (as CaCO3)	100	2	mg/L	100		100	92-106			
LCS (B6L1520-BS2)				Prepared: 2017-01-03, Analyzed: 2017-01-03						
Alkalinity, Total (as CaCO3)	101	2	mg/L	100		101	92-106			

REPORTED TO Morrison Hershfield Limited - Burnaby
PROJECT Whistler Landfill - Summer/Winter

WORK ORDER 6121583
REPORTED 2017-01-04

Analyte	Result	MRL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Notes
General Parameters, Batch B6L1520, Continued										
LCS (B6L1520-BS3)				Prepared: 2017-01-03, Analyzed: 2017-01-03						
Conductivity (EC)	1410	2	µS/cm	1410		100	95-104			
LCS (B6L1520-BS4)				Prepared: 2017-01-03, Analyzed: 2017-01-03						
Conductivity (EC)	1410	2	µS/cm	1410		100	95-104			
Duplicate (B6L1520-DUP1)		**Source: 6121583-01**		Prepared: 2017-01-03, Analyzed: 2017-01-03						
Alkalinity, Total (as CaCO3)	233	2	mg/L		236			1	10	
Alkalinity, Phenolphthalein (as CaCO3)	< 1	2	mg/L		< 1				10	
Alkalinity, Bicarbonate (as CaCO3)	233	2	mg/L		236			1	10	
Alkalinity, Carbonate (as CaCO3)	< 1	2	mg/L		< 1				10	
Alkalinity, Hydroxide (as CaCO3)	< 1	2	mg/L		< 1				10	
Conductivity (EC)	1030	2	µS/cm		1030			< 1	5	
pH	6.81	0.01	pH units		6.81			< 1	4	
Reference (B6L1520-SRM1)				Prepared: 2017-01-03, Analyzed: 2017-01-03						
pH	6.95	0.01	pH units	7.00		99	98-102			
Reference (B6L1520-SRM2)				Prepared: 2017-01-03, Analyzed: 2017-01-03						
pH	6.96	0.01	pH units	7.00		99	98-102			
General Parameters, Batch B6L1543										
Blank (B6L1543-BLK1)				Prepared: 2016-12-29, Analyzed: 2016-12-30						
Nitrogen, Total Kjeldahl	< 0.05	0.05	mg/L							
Blank (B6L1543-BLK2)				Prepared: 2016-12-29, Analyzed: 2016-12-30						
Nitrogen, Total Kjeldahl	< 0.05	0.05	mg/L							
LCS (B6L1543-BS1)				Prepared: 2016-12-29, Analyzed: 2016-12-30						
Nitrogen, Total Kjeldahl	10.5	0.05	mg/L	10.0		105	84-121			
LCS (B6L1543-BS2)				Prepared: 2016-12-29, Analyzed: 2016-12-30						
Nitrogen, Total Kjeldahl	10.3	0.05	mg/L	10.0		103	84-121			
Duplicate (B6L1543-DUP1)		**Source: 6121583-01**		Prepared: 2016-12-29, Analyzed: 2016-12-30						
Nitrogen, Total Kjeldahl	13.2	0.05	mg/L		13.3			< 1	16	
General Parameters, Batch B6L1565										
Blank (B6L1565-BLK1)				Prepared: 2016-12-29, Analyzed: 2016-12-30						
Phosphorus, Total (as P)	< 0.002	0.002	mg/L							
Blank (B6L1565-BLK2)				Prepared: 2016-12-29, Analyzed: 2016-12-30						
Phosphorus, Total (as P)	< 0.002	0.002	mg/L							
LCS (B6L1565-BS1)				Prepared: 2016-12-29, Analyzed: 2016-12-30						
Phosphorus, Total (as P)	0.094	0.002	mg/L	0.100		94	75-112			
LCS (B6L1565-BS2)				Prepared: 2016-12-29, Analyzed: 2016-12-30						
Phosphorus, Total (as P)	0.092	0.002	mg/L	0.100		92	75-112			
General Parameters, Batch B7A0032										
Blank (B7A0032-BLK1)				Prepared: 2017-01-03, Analyzed: 2017-01-03						
Chemical Oxygen Demand	< 20	20	mg/L							

REPORTED TO Morrison Hershfield Limited - Burnaby
PROJECT Whistler Landfill - Summer/Winter

WORK ORDER 6121583
REPORTED 2017-01-04

Analyte	Result	MRL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Notes
General Parameters, Batch B7A0032, Continued										
LCS (B7A0032-BS1)				Prepared: 2017-01-03, Analyzed: 2017-01-03						
Chemical Oxygen Demand	49	20	mg/L	50.0		98	85-115			
Duplicate (B7A0032-DUP1)		**Source: 6121583-01**		Prepared: 2017-01-03, Analyzed: 2017-01-03						
Chemical Oxygen Demand	25	20	mg/L		24				14	
Matrix Spike (B7A0032-MS1)		**Source: 6121583-01**		Prepared: 2017-01-03, Analyzed: 2017-01-03						
Chemical Oxygen Demand	213	20	mg/L	200	24	95	75-125			
Polycyclic Aromatic Hydrocarbons (PAH), Batch B6L1443										
Blank (B6L1443-BLK1)				Prepared: 2016-12-27, Analyzed: 2016-12-29						
Acenaphthene	< 0.05	0.05	µg/L							
Acenaphthylene	< 0.20	0.20	µg/L							
Acridine	< 0.05	0.05	µg/L							
Anthracene	< 0.01	0.01	µg/L							
Benz (a) anthracene	< 0.01	0.01	µg/L							
Benzo (a) pyrene	< 0.01	0.01	µg/L							
Benzo (b) fluoranthene	< 0.05	0.05	µg/L							
Benzo (b+j) fluoranthene	< 0.05	0.05	µg/L							
Benzo (g,h,i) perylene	< 0.05	0.05	µg/L							
Benzo (k) fluoranthene	< 0.05	0.05	µg/L							
Chrysene	< 0.05	0.05	µg/L							
Dibenz (a,h) anthracene	< 0.05	0.05	µg/L							
Fluoranthene	< 0.03	0.03	µg/L							
Fluorene	< 0.05	0.05	µg/L							
Indeno (1,2,3-cd) pyrene	< 0.05	0.05	µg/L							
Naphthalene	< 0.20	0.20	µg/L							
Phenanthrene	< 0.10	0.10	µg/L							
Pyrene	< 0.02	0.02	µg/L							
Quinoline	< 0.05	0.05	µg/L							
Surrogate: Acridine-d9	*1.90*		*µg/L*	4.44		*43*	*60-130*			*S02*
Surrogate: Naphthalene-d8	*3.96*		*µg/L*	4.44		*89*	*60-130*			
Surrogate: Perylene-d12	*4.31*		*µg/L*	4.44		*97*	*60-130*			
LCS (B6L1443-BS1)				Prepared: 2016-12-27, Analyzed: 2016-12-28						
Acenaphthene	4.11	0.05	µg/L	4.44		92	70-130			
Acenaphthylene	4.32	0.20	µg/L	4.44		97	70-130			
Acridine	3.72	0.05	µg/L	4.44		84	60-130			
Anthracene	4.36	0.01	µg/L	4.44		98	70-130			
Benz (a) anthracene	4.04	0.01	µg/L	4.44		91	70-130			
Benzo (a) pyrene	4.00	0.01	µg/L	4.44		90	70-130			
Benzo (b) fluoranthene	4.51	0.05	µg/L	4.44		102	70-130			
Benzo (b+j) fluoranthene	8.59	0.05	µg/L	8.89		97	70-130			
Benzo (g,h,i) perylene	4.49	0.05	µg/L	4.44		101	70-130			
Benzo (k) fluoranthene	4.47	0.05	µg/L	4.44		100	70-130			
Chrysene	4.03	0.05	µg/L	4.44		91	70-130			
Dibenz (a,h) anthracene	4.15	0.05	µg/L	4.44		93	70-130			
Fluoranthene	4.42	0.03	µg/L	4.44		100	70-130			
Fluorene	4.01	0.05	µg/L	4.44		90	70-130			
Indeno (1,2,3-cd) pyrene	4.27	0.05	µg/L	4.44		96	70-130			
Naphthalene	3.99	0.20	µg/L	4.44		90	70-130			
Phenanthrene	4.30	0.10	µg/L	4.44		97	70-130			
Pyrene	4.42	0.02	µg/L	4.44		100	70-130			
Quinoline	4.79	0.05	µg/L	4.44		108	70-130			
Surrogate: Acridine-d9	*3.87*		*µg/L*	4.44		*87*	*60-130*			
Surrogate: Naphthalene-d8	*4.10*		*µg/L*	4.44		*92*	*60-130*			

REPORTED TO Morrison Hershfield Limited - Burnaby
PROJECT Whistler Landfill - Summer/Winter

WORK ORDER 6121583
REPORTED 2017-01-04

Analyte	Result	MRL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Notes
Polycyclic Aromatic Hydrocarbons (PAH), Batch B6L1443, Continued										
LCS (B6L1443-BS1), Continued				Prepared: 2016-12-27, Analyzed: 2016-12-28						
Surrogate: Perylene-d12	*4.50*		*µg/L*	4.44		*101*	*60-130*			
LCS Dup (B6L1443-BSD1)				Prepared: 2016-12-27, Analyzed: 2016-12-28						
Acenaphthene	4.20	0.05	µg/L	4.44		95	70-130	2	20	
Acenaphthylene	4.39	0.20	µg/L	4.44		99	70-130	2	20	
Acridine	3.75	0.05	µg/L	4.44		84	60-130	< 1	20	
Anthracene	4.42	0.01	µg/L	4.44		99	70-130	1	20	
Benz (a) anthracene	4.02	0.01	µg/L	4.44		91	70-130	< 1	20	
Benzo (a) pyrene	3.97	0.01	µg/L	4.44		89	70-130	< 1	20	
Benzo (b) fluoranthene	4.47	0.05	µg/L	4.44		101	70-130	1	20	
Benzo (b+j) fluoranthene	8.65	0.05	µg/L	8.89		97	70-130	< 1	20	
Benzo (g,h,i) perylene	4.44	0.05	µg/L	4.44		100	70-130	1	20	
Benzo (k) fluoranthene	4.43	0.05	µg/L	4.44		100	70-130	< 1	20	
Chrysene	4.04	0.05	µg/L	4.44		91	70-130	< 1	20	
Dibenz (a,h) anthracene	4.11	0.05	µg/L	4.44		92	70-130	1	20	
Fluoranthene	4.42	0.03	µg/L	4.44		100	70-130	< 1	20	
Fluorene	4.07	0.05	µg/L	4.44		92	70-130	1	20	
Indeno (1,2,3-cd) pyrene	4.22	0.05	µg/L	4.44		95	70-130	1	20	
Naphthalene	4.14	0.20	µg/L	4.44		93	70-130	4	20	
Phenanthrene	4.36	0.10	µg/L	4.44		98	70-130	1	20	
Pyrene	4.44	0.02	µg/L	4.44		100	70-130	< 1	20	
Quinoline	4.75	0.05	µg/L	4.44		107	70-130	< 1	20	
Surrogate: Acridine-d9	*3.93*		*µg/L*	4.44		*88*	*60-130*			
Surrogate: Naphthalene-d8	*4.28*		*µg/L*	4.44		*96*	*60-130*			
Surrogate: Perylene-d12	*4.77*		*µg/L*	4.44		*107*	*60-130*			
Total Metals, Batch B6L1441										
Blank (B6L1441-BLK1)				Prepared: 2016-12-27, Analyzed: 2016-12-28						
Mercury, total	< 0.00002	0.00002	mg/L							
Blank (B6L1441-BLK2)				Prepared: 2016-12-27, Analyzed: 2016-12-28						
Mercury, total	< 0.00002	0.00002	mg/L							
Duplicate (B6L1441-DUP2)			**Source: 6121583-07**	Prepared: 2016-12-27, Analyzed: 2016-12-28						
Mercury, total	< 0.00002	0.00002	mg/L		< 0.00002				20	
Matrix Spike (B6L1441-MS2)			**Source: 6121583-08**	Prepared: 2016-12-27, Analyzed: 2016-12-28						
Mercury, total	0.00024	0.00002	mg/L	0.000250	< 0.00002	96	70-130			
Reference (B6L1441-SRM1)				Prepared: 2016-12-27, Analyzed: 2016-12-28						
Mercury, total	0.00521	0.00002	mg/L	0.00489		106	50-150			
Reference (B6L1441-SRM2)				Prepared: 2016-12-27, Analyzed: 2016-12-28						
Mercury, total	0.00501	0.00002	mg/L	0.00489		103	50-150			
Total Metals, Batch B6L1469										
Blank (B6L1469-BLK1)				Prepared: 2016-12-28, Analyzed: 2016-12-29						
Aluminum, total	< 0.005	0.005	mg/L							
Antimony, total	< 0.0001	0.0001	mg/L							
Arsenic, total	< 0.0005	0.0005	mg/L							
Barium, total	< 0.005	0.005	mg/L							
Beryllium, total	< 0.0001	0.0001	mg/L							
Bismuth, total	< 0.0001	0.0001	mg/L							
Boron, total	< 0.004	0.004	mg/L							

REPORTED TO	Morrison Hershfield Limited - Burnaby	**WORK ORDER**	6121583
PROJECT	Whistler Landfill - Summer/Winter	**REPORTED**	2017-01-04

Analyte	Result	MRL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Notes
Total Metals, Batch B6L1469, Continued										
Blank (B6L1469-BLK1), Continued				Prepared: 2016-12-28, Analyzed: 2016-12-29						
Cadmium, total	< 0.00001	0.00001	mg/L							
Calcium, total	< 0.2	0.2	mg/L							
Chromium, total	< 0.0005	0.0005	mg/L							
Cobalt, total	< 0.00005	0.00005	mg/L							
Copper, total	< 0.0002	0.0002	mg/L							
Iron, total	< 0.01	0.01	mg/L							
Lead, total	< 0.0001	0.0001	mg/L							
Lithium, total	< 0.0001	0.0001	mg/L							
Magnesium, total	< 0.01	0.01	mg/L							
Manganese, total	< 0.0002	0.0002	mg/L							
Molybdenum, total	< 0.0001	0.0001	mg/L							
Nickel, total	< 0.0002	0.0002	mg/L							
Phosphorus, total	< 0.02	0.02	mg/L							
Potassium, total	< 0.02	0.02	mg/L							
Selenium, total	< 0.0005	0.0005	mg/L							
Silicon, total	< 0.5	0.5	mg/L							
Silver, total	< 0.00005	0.00005	mg/L							
Sodium, total	< 0.02	0.02	mg/L							
Strontium, total	< 0.001	0.001	mg/L							
Sulfur, total	< 1	1	mg/L							
Tellurium, total	< 0.0002	0.0002	mg/L							
Thallium, total	< 0.00002	0.00002	mg/L							
Thorium, total	< 0.0001	0.0001	mg/L							
Tin, total	< 0.0002	0.0002	mg/L							
Titanium, total	< 0.005	0.005	mg/L							
Uranium, total	< 0.00002	0.00002	mg/L							
Vanadium, total	< 0.001	0.001	mg/L							
Zinc, total	< 0.004	0.004	mg/L							
Zirconium, total	< 0.0001	0.0001	mg/L							
Reference (B6L1469-SRM1)				Prepared: 2016-12-28, Analyzed: 2016-12-29						
Aluminum, total	0.285	0.005	mg/L	0.303		94	81-129			
Antimony, total	0.0493	0.0001	mg/L	0.0511		96	88-114			
Arsenic, total	0.120	0.0005	mg/L	0.118		101	88-114			
Barium, total	0.770	0.005	mg/L	0.823		94	72-104			
Beryllium, total	0.0456	0.0001	mg/L	0.0496		92	76-131			
Boron, total	3.09	0.004	mg/L	3.45		90	75-121			
Cadmium, total	0.0497	0.00001	mg/L	0.0495		100	89-111			
Calcium, total	11.1	0.2	mg/L	11.6		96	86-121			
Chromium, total	0.253	0.0005	mg/L	0.250		101	89-114			
Cobalt, total	0.0396	0.00005	mg/L	0.0377		105	91-113			
Copper, total	0.519	0.0002	mg/L	0.486		107	91-115			
Iron, total	0.50	0.01	mg/L	0.488		102	77-124			
Lead, total	0.217	0.0001	mg/L	0.204		106	92-113			
Lithium, total	0.375	0.0001	mg/L	0.403		93	85-115			
Magnesium, total	3.84	0.01	mg/L	3.79		101	78-120			
Manganese, total	0.106	0.0002	mg/L	0.109		97	90-114			
Molybdenum, total	0.190	0.0001	mg/L	0.198		96	90-111			
Nickel, total	0.256	0.0002	mg/L	0.249		103	90-111			
Phosphorus, total	0.23	0.02	mg/L	0.227		102	85-115			
Potassium, total	7.30	0.02	mg/L	7.21		101	84-113			
Selenium, total	0.121	0.0005	mg/L	0.121		100	85-115			
Sodium, total	7.56	0.02	mg/L	7.54		100	82-123			
Strontium, total	0.360	0.001	mg/L	0.375		96	88-112			
Thallium, total	0.0845	0.00002	mg/L	0.0805		105	91-114			
Uranium, total	0.0339	0.00002	mg/L	0.0306		111	85-120			
Vanadium, total	0.401	0.001	mg/L	0.386		104	86-111			

REPORTED TO	Morrison Hershfield Limited - Burnaby	**WORK ORDER**	6121583
PROJECT	Whistler Landfill - Summer/Winter	**REPORTED**	2017-01-04

Analyte	Result	MRL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Notes
Total Metals, Batch B6L1469, Continued										
Reference (B6L1469-SRM1), Continued				Prepared: 2016-12-28, Analyzed: 2016-12-29						
Zinc, total	2.64	0.004	mg/L	2.49		106	85-111			
Volatile Organic Compounds (VOC), Batch B6L1411										
Blank (B6L1411-BLK1)				Prepared: 2016-12-24, Analyzed: 2016-12-24						
Benzene	< 0.5	0.5	µg/L							
Bromodichloromethane	< 1.0	1.0	µg/L							
Bromoform	< 1.0	1.0	µg/L							
Carbon tetrachloride	< 0.5	0.5	µg/L							
Chlorobenzene	< 1.0	1.0	µg/L							
Chloroethane	< 2.0	2.0	µg/L							
Chloroform	< 1.0	1.0	µg/L							
Dibromochloromethane	< 1.0	1.0	µg/L							
1,2-Dibromoethane	< 0.2	0.2	µg/L							
Dibromomethane	< 1.0	1.0	µg/L							
1,2-Dichlorobenzene	< 0.5	0.5	µg/L							
1,3-Dichlorobenzene	< 1.0	1.0	µg/L							
1,4-Dichlorobenzene	< 1.0	1.0	µg/L							
1,1-Dichloroethane	< 1.0	1.0	µg/L							
1,2-Dichloroethane	< 1.0	1.0	µg/L							
1,1-Dichloroethene	< 1.0	1.0	µg/L							
cis-1,2-Dichloroethene	< 1.0	1.0	µg/L							
trans-1,2-Dichloroethene	< 1.0	1.0	µg/L							
1,2-Dichloropropane	< 1.0	1.0	µg/L							
1,3-Dichloropropene	< 1.0	1.0	µg/L							
Ethylbenzene	< 1.0	1.0	µg/L							
Methyl tert-butyl ether	< 1.0	1.0	µg/L							
Methylene chloride	< 3.0	3.0	µg/L							
Styrene	< 1.0	1.0	µg/L							
1,1,2,2-Tetrachloroethane	< 0.5	0.5	µg/L							
Tetrachloroethene	< 1.0	1.0	µg/L							
Toluene	< 1.0	1.0	µg/L							
1,1,1-Trichloroethane	< 1.0	1.0	µg/L							
1,1,2-Trichloroethane	< 1.0	1.0	µg/L							
Trichloroethene	< 1.0	1.0	µg/L							
Trichlorofluoromethane	< 1.0	1.0	µg/L							
Vinyl chloride	< 1.0	1.0	µg/L							
Xylenes (total)	< 2.0	2.0	µg/L							
Surrogate: Toluene-d8	*26.7*		*µg/L*	25.0		*107*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*25.6*		*µg/L*	25.0		*103*	*70-130*			
Surrogate: 1,4-Dichlorobenzene-d4	*23.0*		*µg/L*	25.0		*92*	*70-130*			
LCS (B6L1411-BS1)				Prepared: 2016-12-24, Analyzed: 2016-12-24						
Benzene	22.7	0.5	µg/L	20.0		114	70-130			
Bromodichloromethane	22.9	1.0	µg/L	20.0		114	70-130			
Bromoform	24.5	1.0	µg/L	20.0		122	70-130			
Carbon tetrachloride	23.4	0.5	µg/L	20.0		117	70-130			
Chlorobenzene	22.3	1.0	µg/L	20.0		112	70-130			
Chloroethane	17.4	2.0	µg/L	20.0		87	70-130			
Chloroform	23.0	1.0	µg/L	20.0		115	70-130			
Dibromochloromethane	22.5	1.0	µg/L	20.0		112	70-130			
1,2-Dibromoethane	21.6	0.2	µg/L	20.0		108	70-130			
Dibromomethane	22.5	1.0	µg/L	20.0		112	70-130			
1,2-Dichlorobenzene	23.4	0.5	µg/L	20.0		117	70-130			
1,3-Dichlorobenzene	24.7	1.0	µg/L	20.0		123	70-130			
1,4-Dichlorobenzene	24.5	1.0	µg/L	20.0		122	70-130			

REPORTED TO	Morrison Hershfield Limited - Burnaby	**WORK ORDER**	6121583
PROJECT	Whistler Landfill - Summer/Winter	**REPORTED**	2017-01-04

Analyte	Result	MRL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Notes
Volatile Organic Compounds (VOC), Batch B6L1411, Continued										
LCS (B6L1411-BS1), Continued				Prepared: 2016-12-24, Analyzed: 2016-12-24						
1,1-Dichloroethane	21.2	1.0	µg/L	20.0		106	70-130			
1,2-Dichloroethane	22.9	1.0	µg/L	20.0		115	70-130			
1,1-Dichloroethene	22.0	1.0	µg/L	20.0		110	70-130			
cis-1,2-Dichloroethene	21.4	1.0	µg/L	20.0		107	70-130			
trans-1,2-Dichloroethene	20.5	1.0	µg/L	20.0		102	70-130			
1,2-Dichloropropane	21.8	1.0	µg/L	20.0		109	70-130			
1,3-Dichloropropene	39.9	1.0	µg/L	40.0		100	70-130			
Ethylbenzene	22.7	1.0	µg/L	20.0		113	70-130			
Methyl tert-butyl ether	23.7	1.0	µg/L	20.0		119	70-130			
Methylene chloride	21.3	3.0	µg/L	20.0		106	70-130			
Styrene	22.3	1.0	µg/L	20.0		112	70-130			
1,1,2,2-Tetrachloroethane	24.2	0.5	µg/L	20.0		121	70-130			
Tetrachloroethene	22.1	1.0	µg/L	20.0		110	70-130			
Toluene	22.4	1.0	µg/L	20.0		112	70-130			
1,1,1-Trichloroethane	23.0	1.0	µg/L	20.0		115	70-130			
1,1,2-Trichloroethane	23.2	1.0	µg/L	20.0		116	70-130			
Trichloroethene	22.4	1.0	µg/L	20.0		112	70-130			
Trichlorofluoromethane	24.7	1.0	µg/L	20.0		124	70-130			
Vinyl chloride	21.6	1.0	µg/L	20.0		108	70-130			
Xylenes (total)	65.1	2.0	µg/L	60.0		109	70-130			
Surrogate: Toluene-d8	*29.0*		*µg/L*	25.0		*116*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*26.5*		*µg/L*	25.0		*106*	*70-130*			
Surrogate: 1,4-Dichlorobenzene-d4	*28.5*		*µg/L*	25.0		*114*	*70-130*			
Duplicate (B6L1411-DUP1)		**Source: 6121583-10**		Prepared: 2016-12-24, Analyzed: 2016-12-24						
Benzene	< 0.5	0.5	µg/L		< 0.5				20	
Bromodichloromethane	< 1.0	1.0	µg/L		< 1.0				20	
Bromoform	< 1.0	1.0	µg/L		< 1.0				20	
Carbon tetrachloride	< 0.5	0.5	µg/L		< 0.5				20	
Chlorobenzene	< 1.0	1.0	µg/L		< 1.0				20	
Chloroethane	< 2.0	2.0	µg/L		< 2.0				20	
Chloroform	< 1.0	1.0	µg/L		< 1.0				20	
Dibromochloromethane	< 1.0	1.0	µg/L		< 1.0				20	
1,2-Dibromoethane	< 0.2	0.2	µg/L		< 0.2				20	
Dibromomethane	< 1.0	1.0	µg/L		< 1.0				20	
1,2-Dichlorobenzene	< 0.5	0.5	µg/L		< 0.5				20	
1,3-Dichlorobenzene	< 1.0	1.0	µg/L		< 1.0				20	
1,4-Dichlorobenzene	< 1.0	1.0	µg/L		< 1.0				20	
1,1-Dichloroethane	< 1.0	1.0	µg/L		< 1.0				20	
1,2-Dichloroethane	< 1.0	1.0	µg/L		< 1.0				20	
1,1-Dichloroethene	< 1.0	1.0	µg/L		< 1.0				20	
cis-1,2-Dichloroethene	< 1.0	1.0	µg/L		< 1.0				20	
trans-1,2-Dichloroethene	< 1.0	1.0	µg/L		< 1.0				20	
1,2-Dichloropropane	< 1.0	1.0	µg/L		< 1.0				20	
1,3-Dichloropropene	< 1.0	1.0	µg/L		< 1.0				20	
Ethylbenzene	< 1.0	1.0	µg/L		< 1.0				20	
Methyl tert-butyl ether	< 1.0	1.0	µg/L		< 1.0				20	
Methylene chloride	< 3.0	3.0	µg/L		< 3.0				20	
Styrene	< 1.0	1.0	µg/L		< 1.0				20	
1,1,2,2-Tetrachloroethane	< 0.5	0.5	µg/L		< 0.5				20	
Tetrachloroethene	< 1.0	1.0	µg/L		< 1.0				20	
Toluene	< 1.0	1.0	µg/L		< 1.0				20	
1,1,1-Trichloroethane	< 1.0	1.0	µg/L		< 1.0				20	
1,1,2-Trichloroethane	< 1.0	1.0	µg/L		< 1.0				20	
Trichloroethene	< 1.0	1.0	µg/L		< 1.0				20	
Trichlorofluoromethane	< 1.0	1.0	µg/L		< 1.0				20	

REPORTED TO	Morrison Hershfield Limited - Burnaby	**WORK ORDER**	6121583
PROJECT	Whistler Landfill - Summer/Winter	**REPORTED**	2017-01-04

Analyte	Result	MRL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Notes
Volatile Organic Compounds (VOC), Batch B6L1411, Continued										
Duplicate (B6L1411-DUP1), Continued	**Source: 6121583-10**			Prepared: 2016-12-24, Analyzed: 2016-12-24						
Vinyl chloride	< 1.0	1.0	µg/L		< 1.0				20	
Xylenes (total)	< 2.0	2.0	µg/L		< 2.0				20	
Surrogate: Toluene-d8	*27.3*		*µg/L*	25.0		*109*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*27.6*		*µg/L*	25.0		*110*	*70-130*			
Surrogate: 1,4-Dichlorobenzene-d4	*28.7*		*µg/L*	25.0		*115*	*70-130*			

QC Qualifiers:

S02	Surrogate recovery outside of control limits. Data accepted based on acceptable recovery of other surrogates.
SPK1	The recovery of this analyte was outside of established control limits. The data was accepted based on performance of other batch QC.

APPENDIX B: Field Data Collection Results for Leachate, Groundwater, and Surface Water Monitoring

		Groundwater Levels					Water Quality					
Well ID	Date	Ground Surface elevation	Top of Well Riser Elevation	Depth to Water	Static Water Level Elevation		Temp	Conductivi	D.O.	pH	ORP	Comments
		mASML	mASML	m below top of well riser	mASL		C	uS/cm	mg/l			
MW2D	Q1 -March 25, 2016	603.84	604.9	5.8	599.10		7.4	12.1	2.11	6.64	-4.6	New tubing
MW2S		603.84	604.94	5.74	599.20		7.3	0.27	1.97	6.85	8.4	New tubing
MW3		600.61	601.47	1.43	600.04		7.7	0.13	19	5.89	48	
MW4		596.54	677.54	3.98	673.56		7.8	0.36	3.3	6.16	51.4	
MW6		610.88	610.88		610.88		5.5	0.46	7.5	5.96	91.1	New tubing
SFC2							4.8	0.10	13.7	7.09	48.0	
SFC2B							7.0	0.27	8.34	5.21	120.9	
SFC3							4.5	0.14	13.87	6.48	131.2	
SFC11							4.4	0.03	14.8	6.54	103.6	
SFC4B							6.0	0.2	10.04	6.6	86.4	
Leachate Manhole							6.0	0.46	7.74	6.76	90	
GW Interceptor							8.1	0.74	1.88	6.34	87.6	
MW2D	Q2 - June 29, 2016	603.84	604.9	7.66	597.24		9.1	1213	2.16	6.66	-2.8	
MW2S		603.84	604.94	7.6	597.34		9.5	423	2.17	6.92	-26.4	
MW3		600.61	601.47	1.89	599.58		9.8	154	5.83	6.2	32.1	
MW4		596.54	677.54	4.16	673.38		9.5	470.6	1.21	6.73	-0.3	
MW6		610.88	610.88	5.63	605.25		9.5	862	4.23	5.52	126	
SFC2							9.5	320	7.71	6.78	42.1	Very little flow, lots of orange algae
SFC2B							13.8	NM	0.23	3.87	163.1	Conductivity was not measured. Stagnant, no connection to SFC2.
SFC3							12.4	136.5	4.36	6.82	36.4	Very little flow, lots of orange algae
SFC11							7.9	140.4	10.24	6.99	49.5	Clear moderate flow
SFC4B							11.8	263.6	10	7.22	38.2	Clear flow, dense veg, new parking lot so there is soil distrubance in the area.
GW Interceptor							12.4	797	1.32	6.35	82.4	
MW2D	Q3 - September 21, 2016	603.84	604.9	6.88	598.02		8.8	780	13.30%	6.5	-29.5	
MW2S		603.84	604.94	6.83	598.11		8.8	327.1	8.40%	6.63	-58.4	
MW3		600.61	601.47	2.02	599.45		9.8	105.2	16.20%	6.26	96.2	
MW4		596.54	677.54	4.46	673.08		9.2	236.7	20.70%	6.6	19.6	
MW6		610.88	610.88		610.88							Due to construction in the area, the flushmount well has been either burried or destroyed. Well could not be located.
SFC2							9.6	215.3	38.50%	6.56	34.6	
SFC2B												No water in the ditch, no sample or paramters measured.
SFC3							10.3	92.7	40.60%	6.83	-13.4	
SFC11							6.9	92.4	52.90%	6.66	67.8	
SFC4B							8.6	181.8	74.10%	6.98	74.4	
GW Interceptor							9.4	531	5.90%	6.19	21	
Leachate Manhole												Not sampled this time.
MW2D	Q4 - December 22, 2016	603.84	604.9	6.16	598.74		7.2	762	2.82	6.62	37.4	
MW2S		603.84	604.94	6.11	598.83		6.2	353.7	44.7	6.84	9.9	
MW3		600.61	601.47	1.57	599.9		8.2	98.3	3.35	6.26	54.3	
MW4		596.54	677.54	4.33	673.21		6.5	173	9.31	6.98	921.6	
MW6		610.88	610.88									Could not locate well.
SFC2							8.2	211	5.98	6.75	67.2	
SFC2B												Could not sample - outlet was dry.
SFC3							3.3	97.2	10.3	7.18	50.1	
SFC11							5.2	67.7	9.35	7.42	39.4	
SFC4B							3.2	208.2	10.29	7.2	76.1	
GW Interceptor							8.6	573	3.49	6.52	73.4	

APPENDIX C: List of Analytical Parameters

ANALYTICAL SERVICES CAPABILITIES

PREPARED FOR Morrison Hershfield Limited **DATE** May-06-15

Packages and their Respective Analyses:

Package: **BTEX/VH/VPH in Water Pkg** TAT (Days): 5
Container(s): 2 x 40 mL AG - NaHSO4 HT (Days): 14

Calculated Analyte(s) Included: VPHw

Analyses Included:

BTEX in Water	VH in Water

Package: **Dissolved Metals by ICPMS (low) Pkg** TAT (Days): 5
Container(s): 125 mL HDPE - Filtered + HNO3 HT (Days): 180

Calculated Analyte(s) Included: Hardness, Total (Diss. as CaCO3)

Analyses Included:

Aluminum, dissolved by ICPMS (low)	Antimony, dissolved by ICPMS (low)	Arsenic, dissolved by ICPMS (low)
Barium, dissolved by ICPMS (low)	Beryllium, dissolved by ICPMS (low)	Bismuth, dissolved by ICPMS (low)
Boron, dissolved by ICPMS (low)	Cadmium, dissolved by ICPMS (low)	Calcium, dissolved by ICPMS (low)
Chromium, dissolved by ICPMS (low)	Cobalt, dissolved by ICPMS (low)	Copper, dissolved by ICPMS (low)
Iron, dissolved by ICPMS (low)	Lead, dissolved by ICPMS (low)	Lithium, dissolved by ICPMS (low)
Magnesium, dissolved by ICPMS (low)	Manganese, dissolved by ICPMS (low)	Molybdenum, dissolved by ICPMS (low)
Nickel, dissolved by ICPMS (low)	Phosphorus, dissolved by ICPMS (low)	Potassium, dissolved by ICPMS (low)
Selenium, dissolved by ICPMS (low)	Silicon, dissolved by ICPMS (low)	Silver, dissolved by ICPMS (low)
Sodium, dissolved by ICPMS (low)	Strontium, dissolved by ICPMS (low)	Sulfur, dissolved by ICPMS (low)
Tellurium, dissolved by ICPMS (low)	Thallium, dissolved by ICPMS (low)	Thorium, dissolved by ICPMS (low)
Tin, dissolved by ICPMS (low)	Titanium, dissolved by ICPMS (low)	Uranium, dissolved by ICPMS (low)
Vanadium, dissolved by ICPMS (low)	Zinc, dissolved by ICPMS (low)	Zirconium, dissolved by ICPMS (low)

Package: **Dissolved Metals by ICPMS (ultra low) Pkg** TAT (Days): 5
Container(s): 125 mL HDPE - Filtered + HNO3 HT (Days): 180

Calculated Analyte(s) Included: Hardness, Total (Diss. as CaCO3)

Analyses Included:

Aluminum, dissolved by ICPMS (ultra low)	Antimony, dissolved by ICPMS (ultra low)	Arsenic, dissolved by ICPMS (ultra low)
Barium, dissolved by ICPMS (ultra low)	Beryllium, dissolved by ICPMS (ultra low)	Bismuth, dissolved by ICPMS (ultra low)
Boron, dissolved by ICPMS (ultra low)	Cadmium, dissolved by ICPMS (ultra low)	Calcium, dissolved by ICPMS (ultra low)
Chromium, dissolved by ICPMS (ultra low)	Cobalt, dissolved by ICPMS (ultra low)	Copper, dissolved by ICPMS (ultra low)
Iron, dissolved by ICPMS (ultra low)	Lead, dissolved by ICPMS (ultra low)	Lithium, dissolved by ICPMS (ultra low)
Magnesium, dissolved by ICPMS (ultra low)	Manganese, dissolved by ICPMS (ultra low)	Molybdenum, dissolved by ICPMS (ultra low)
Nickel, dissolved by ICPMS (ultra low)	Phosphorus, dissolved by ICPMS (ultra low)	Potassium, dissolved by ICPMS (ultra low)
Selenium, dissolved by ICPMS (ultra low)	Silicon, dissolved by ICPMS (ultra low)	Silver, dissolved by ICPMS (ultra low)
Sodium, dissolved by ICPMS (ultra low)	Strontium, dissolved by ICPMS (ultra low)	Sulfur, dissolved by ICPMS (ultra low)
Tellurium, dissolved by ICPMS (ultra low)	Thallium, dissolved by ICPMS (ultra low)	Thorium, dissolved by ICPMS (ultra low)
Tin, dissolved by ICPMS (ultra low)	Titanium, dissolved by ICPMS (ultra low)	Uranium, dissolved by ICPMS (ultra low)
Vanadium, dissolved by ICPMS (ultra low)	Zinc, dissolved by ICPMS (ultra low)	Zirconium, dissolved by ICPMS (ultra low)

ANALYTICAL SERVICES CAPABILITIES

PREPARED FOR Morrison Hershfield Limited **DATE** May-06-15

Packages and their Respective Analyses:

Package: **Dissolved Metals by ICPMS Pkg** TAT (Days): 5
Container(s): 125 mL HDPE - Filtered + HNO3 HT (Days): 180

Calculated Analyte(s) Included: Hardness, Total (Diss. as CaCO3)

Analyses Included:

Aluminum, dissolved by ICPMS	Antimony, dissolved by ICPMS	Arsenic, dissolved by ICPMS
Barium, dissolved by ICPMS	Beryllium, dissolved by ICPMS	Bismuth, dissolved by ICPMS
Boron, dissolved by ICPMS	Cadmium, dissolved by ICPMS	Calcium, dissolved by ICPMS
Chromium, dissolved by ICPMS	Cobalt, dissolved by ICPMS	Copper, dissolved by ICPMS
Iron, dissolved by ICPMS	Lead, dissolved by ICPMS	Lithium, dissolved by ICPMS
Magnesium, dissolved by ICPMS	Manganese, dissolved by ICPMS	Molybdenum, dissolved by ICPMS
Nickel, dissolved by ICPMS	Phosphorus, dissolved by ICPMS	Potassium, dissolved by ICPMS
Selenium, dissolved by ICPMS	Silicon, dissolved by ICPMS	Silver, dissolved by ICPMS
Sodium, dissolved by ICPMS	Strontium, dissolved by ICPMS	Sulfur, dissolved by ICPMS
Tellurium, dissolved by ICPMS	Thallium, dissolved by ICPMS	Thorium, dissolved by ICPMS
Tin, dissolved by ICPMS	Titanium, dissolved by ICPMS	Uranium, dissolved by ICPMS
Vanadium, dissolved by ICPMS	Zinc, dissolved by ICPMS	Zirconium, dissolved by ICPMS

Package: **L/HEPH in Water Pkg** TAT (Days): 5
Container(s): 1 L AG - NaHSO4 HT (Days): 14

Calculated Analyte(s) Included: LEPHw; HEPHw; Total PAH

Analyses Included:

EPH in Water	PAH in Water

Package: **Total Nitrogen in Water Pkg** TAT (Days): 5
Container(s): 125 mL HDPE - H2SO4 500 mL HDPE - Unpreserved HT (Days): 3

Analyses Included:

Nitrate+Nitrite-N in Water	Nitrite-N in Water, colorimetric	Total Kjeldahl Nitrogen

Package: **Total Recoverable Metals by ICPMS (low) Pkg** TAT (Days): 5
Container(s): 125 mL HDPE - HNO3 HT (Days): 180

Calculated Analyte(s) Included: Hardness, Total (Total as CaCO3)

Analyses Included:

Aluminum, total by ICPMS (low)	Antimony, total by ICPMS (low)	Arsenic, total by ICPMS (low)
Barium, total by ICPMS (low)	Beryllium, total by ICPMS (low)	Bismuth, total by ICPMS (low)
Boron, total by ICPMS (low)	Cadmium, total by ICPMS (low)	Calcium, total by ICPMS (low)
Chromium, total by ICPMS (low)	Cobalt, total by ICPMS (low)	Copper, total by ICPMS (low)
Iron, total by ICPMS (low)	Lead, total by ICPMS (low)	Lithium, total by ICPMS (low)
Magnesium, total by ICPMS (low)	Manganese, total by ICPMS (low)	Molybedenum, total by ICPMS (low)
Nickel, total by ICPMS (low)	Phosphorus, total by ICPMS (low)	Potassium, total by ICPMS (low)
Selenium, total by ICPMS (low)	Silicon, total by ICPMS (low)	Silver, total by ICPMS (low)
Sodium, total by ICPMS (low)	Strontium, total by ICPMS (low)	Sulfur, total by ICPMS (low)
Tellurium, total by ICPMS (low)	Thallium, total by ICPMS (low)	Thorium, total by ICPMS (low)
Tin, total by ICPMS (low)	Titanium, total by ICPMS (low)	Uranium, total by ICPMS (low)
Vanadium, total by ICPMS (low)	Zinc, total by ICPMS (low)	Zirconium, total by ICPMS (low)

ANALYTICAL SERVICES CAPABILITIES

PREPARED FOR Morrison Hershfield Limited **DATE** May-06-15

Packages and their Respective Analyses:

Package: **Total Recoverable Metals by ICPMS (ultra low) Pkg** TAT (Days): 5
Container(s): 125 mL HDPE - HNO3 HT (Days): 180

Calculated Analyte(s) Included: Hardness, Total (Total as CaCO3)

Analyses Included:

Aluminum, total by ICPMS (ultra low)	Antimony, total by ICPMS (ultra low)	Arsenic, total by ICPMS (ultra low)
Barium, total by ICPMS (ultra low)	Beryllium, total by ICPMS (ultra low)	Bismuth, total by ICPMS (ultra low)
Boron, total by ICPMS (ultra low)	Cadmium, total by ICPMS (ultra low)	Calcium, total by ICPMS (ultra low)
Chromium, total by ICPMS (ultra low)	Cobalt, total by ICPMS (ultra low)	Copper, total by ICPMS (ultra low)
Iron, total by ICPMS (ultra low)	Lead, total by ICPMS (ultra low)	Lithium, total by ICPMS (ultra low)
Magnesium, total by ICPMS (ultra low)	Manganese, total by ICPMS (ultra low)	Molybedenum, total by ICPMS (Ultra low)
Nickel, total by ICPMS (ultra low)	Phosphorus, total by ICPMS (ultra low)	Potassium, total by ICPMS (ultra low)
Selenium, total by ICPMS (ultra low)	Silicon, total by ICPMS (ultra low)	Silver, total by ICPMS (ultra low)
Sodium, total by ICPMS (ultra low)	Strontium, total by ICPMS (ultra low)	Sulfur, total by ICPMS (ultra low)
Tellurium, total by ICPMS (ultra low)	Thallium, total by ICPMS (ultra low)	Thorium, total by ICPMS (ultra low)
Tin, total by ICPMS (ultra low)	Titanium, total by ICPMS (ultra low)	Uranium, total by ICPMS (ultra low)
Vanadium, total by ICPMS (ultra low)	Zinc, total by ICPMS (ultra low)	Zirconium, total by ICPMS (ultra low)

Package: **Total Recoverable Metals by ICPMS Pkg** TAT (Days): 5
Container(s): 125 mL HDPE - HNO3 HT (Days): 180

Calculated Analyte(s) Included: Hardness, Total (Total as CaCO3)

Analyses Included:

Aluminum, total by ICPMS	Antimony, total by ICPMS	Arsenic, total by ICPMS
Barium, total by ICPMS	Beryllium, total by ICPMS	Bismuth, total by ICPMS
Boron, total by ICPMS	Cadmium, total by ICPMS	Calcium, total by ICPMS
Chromium, total by ICPMS	Cobalt, total by ICPMS	Copper, total by ICPMS
Iron, total by ICPMS	Lead, total by ICPMS	Lithium, total by ICPMS
Magnesium, total by ICPMS	Manganese, total by ICPMS	Molybedenum, total by ICPMS
Nickel, total by ICPMS	Phosphorus, total by ICPMS	Potassium, total by ICPMS
Selenium, total by ICPMS	Silicon, total by ICPMS	Silver, total by ICPMS
Sodium, total by ICPMS	Strontium, total by ICPMS	Sulfur, total by ICPMS
Tellurium, total by ICPMS	Thallium, total by ICPMS	Thorium, total by ICPMS
Tin, total by ICPMS	Titanium, total by ICPMS	Uranium, total by ICPMS
Vanadium, total by ICPMS	Zinc, total by ICPMS	Zirconium, total by ICPMS

Package: **VOC/VH/VPH in Water Pkg** TAT (Days): 5
Container(s): 2 x 40 mL AG - NaHSO4 HT (Days): 14

Calculated Analyte(s) Included: VPHw

Analyses Included:

VH in Water	VOC in Water

ANALYTICAL SERVICES CAPABILITIES

PREPARED FOR Morrison Hershfield Limited **DATE** May-06-15

Analysis Details:

Analysis: Bromide in Water by IC | Matrix: Water | TAT (Days): 5
Version: Default | Units: mg/L | Location: Kelowna | HT (Days): 28
Analysis Ref: APHA 4110 B | Prep Ref: KEL | Container: 500 mL HDPE - Unpreserved

Analyte / Default RDL:	
Bromide	0.05

Analysis: BTEX in Water | Matrix: Water | TAT (Days): 5
Version: Default | Units: ug/L | Location: Richmond | HT (Days): 14
Analysis Ref: EPA 8260B | Prep Ref: N/A | Container: 2 x 40 mL AG - NaHSO4

Analyte / Default RDL:					
Benzene	0.5	Ethylbenzene	0.5	Methyl tert-butyl ether	0.5
Styrene	0.5	Toluene	0.5	Xylenes (total)	1

Analysis: Chemical Oxygen Demand | Matrix: Water | TAT (Days): 5
Version: Default | Units: mg/L | Location: Kelowna | HT (Days): 28
Analysis Ref: APHA 5220 D | Prep Ref: N/A | Container: 125 mL HDPE - H2SO4

Analyte / Default RDL:	
Chemical Oxygen Demand	20

Analysis: Chloride in Water by IC | Matrix: Water | TAT (Days): 5
Version: Default | Units: mg/L | Location: Kelowna | HT (Days): 28
Analysis Ref: APHA 4110 B | Prep Ref: KEL | Container: 500 mL HDPE - Unpreserved

Analyte / Default RDL:	
Chloride	0.05

Analysis: Conductivity in Water | Matrix: Water | TAT (Days): 5
Version: Default | Units: uS/cm | Location: Richmond | HT (Days): 28
Analysis Ref: APHA 2510 B | Prep Ref: N/A | Container: 1 L HDPE - Unpreserved

Analyte / Default RDL:	
Conductivity (EC)	1

Analysis: Dissolved Metals by ICPMS | Matrix: Water | TAT (Days): 5
Version: Default | Units: mg/L | Location: Richmond | HT (Days): 180
Analysis Ref: APHA 3125 B | Prep Ref: N/A | Container: 125 mL HDPE - Filtered + HNO3

Analyte / Default RDL:					
Aluminum, dissolved	0.05	Antimony, dissolved	0.001	Arsenic, dissolved	0.005
Barium, dissolved	0.05	Beryllium, dissolved	0.001	Bismuth, dissolved	0.001
Boron, dissolved	0.04	Cadmium, dissolved	0.0001	Calcium, dissolved	2
Chromium, dissolved	0.005	Cobalt, dissolved	0.0005	Copper, dissolved	0.002
Iron, dissolved	0.1	Lead, dissolved	0.001	Lithium, dissolved	0.001
Magnesium, dissolved	0.1	Manganese, dissolved	0.002	Molybdenum, dissolved	0.001
Nickel, dissolved	0.002	Phosphorus, dissolved	0.2	Potassium, dissolved	0.2
Selenium, dissolved	0.005	Silicon, dissolved	5	Silver, dissolved	0.0005
Sodium, dissolved	0.2	Strontium, dissolved	0.01	Tellurium, dissolved	0.002
Thallium, dissolved	0.0002	Thorium, dissolved	0.001	Tin, dissolved	0.002
Titanium, dissolved	0.05	Uranium, dissolved	0.0002	Vanadium, dissolved	0.01
Zinc, dissolved	0.04	Zirconium, dissolved	0.001		

PREPARED FOR Morrison Hershfield Limited **DATE** May-06-15

Analysis Details:

Analysis:	**Dissolved Metals by ICPMS (Low)**			Matrix:	Water	TAT (Days):	5
Version:	Default		Units: mg/L	Location:	Richmond	HT (Days):	180
Analysis Ref:	APHA 3125 B	Prep Ref:	N/A	Container:	125 mL HDPE - Filtered + HNO3		

Analyte / Default RDL:					
Aluminum, dissolved	0.005	Antimony, dissolved	0.0001	Arsenic, dissolved	0.0005
Barium, dissolved	0.005	Beryllium, dissolved	0.0001	Bismuth, dissolved	0.0001
Boron, dissolved	0.004	Cadmium, dissolved	0.00001	Calcium, dissolved	0.2
Chromium, dissolved	0.0005	Cobalt, dissolved	0.00005	Copper, dissolved	0.0002
Iron, dissolved	0.01	Lead, dissolved	0.0001	Lithium, dissolved	0.0001
Magnesium, dissolved	0.01	Manganese, dissolved	0.0002	Molybdenum, dissolved	0.0001
Nickel, dissolved	0.0002	Phosphorus, dissolved	0.02	Potassium, dissolved	0.02
Selenium, dissolved	0.0005	Silicon, dissolved	0.5	Silver, dissolved	0.00005
Sodium, dissolved	0.02	Strontium, dissolved	0.001	Sulfur, dissolved	1
Tellurium, dissolved	0.0002	Thallium, dissolved	0.00002	Thorium, dissolved	0.0001
Tin, dissolved	0.0002	Titanium, dissolved	0.005	Uranium, dissolved	0.00002
Vanadium, dissolved	0.001	Zinc, dissolved	0.004	Zirconium, dissolved	0.0001

Analysis:	**Dissolved Metals by ICPMS (Ultra Low)**			Matrix:	Water	TAT (Days):	5
Version:	Default		Units: ug/L	Location:	Richmond	HT (Days):	180
Analysis Ref:	APHA 3125 B	Prep Ref:	N/A	Container:	125 mL HDPE - Filtered + HNO3		

Analyte / Default RDL:					
Aluminum, dissolved	1	Antimony, dissolved	0.05	Arsenic, dissolved	0.05
Barium, dissolved	0.1	Beryllium, dissolved	0.01	Bismuth, dissolved	0.01
Boron, dissolved	1	Cadmium, dissolved	0.002	Calcium, dissolved	40
Chromium, dissolved	0.1	Cobalt, dissolved	0.005	Copper, dissolved	0.1
Iron, dissolved	2	Lead, dissolved	0.05	Lithium, dissolved	0.05
Magnesium, dissolved	5	Manganese, dissolved	0.05	Molybdenum, dissolved	0.01
Nickel, dissolved	0.02	Phosphorus, dissolved	10	Potassium, dissolved	10
Selenium, dissolved	0.1	Silicon, dissolved	50	Silver, dissolved	0.01
Sodium, dissolved	10	Strontium, dissolved	0.1	Sulfur, dissolved	500
Tellurium, dissolved	0.05	Thallium, dissolved	0.004	Thorium, dissolved	0.01
Tin, dissolved	0.05	Titanium, dissolved	0.2	Uranium, dissolved	0.001
Vanadium, dissolved	0.2	Zinc, dissolved	1	Zirconium, dissolved	0.01

Analysis:	**EPH in Water**			Matrix:	Water	TAT (Days):	5
Version:	Default		Units: ug/L	Location:	Richmond	HT (Days):	14
Analysis Ref:	BCMOE EPHw	Prep Ref:	Base/Neutral	Container:	1 L AG - NaHSO4		

Analyte / Default RDL:			
EPHw (10-19)	50	EPHw (19-32)	50

Analysis:	**Fluoride in Water by IC**			Matrix:	Water	TAT (Days):	5
Version:	Default		Units: mg/L	Location:	Kelowna	HT (Days):	28
Analysis Ref:	APHA 4110 B	Prep Ref:	KEL	Container:	500 mL HDPE - Unpreserved		

Analyte / Default RDL:	
Fluoride	0.05

Analysis:	**Nitrate+Nitrite-N in Water**			Matrix:	Water	TAT (Days):	5
Version:	Default		Units: mg/L	Location:	Kelowna	HT (Days):	28
Analysis Ref:	APHA 4500-NO3- F	Prep Ref:	N/A	Container:	125 mL HDPE - H2SO4		

Analyte / Default RDL:	
Nitrate+Nitrite as N	0.002

PREPARED FOR Morrison Hershfield Limited **DATE** May-06-15

Analysis Details:

Analysis:	**Nitrite-N in Water, colorimetric**			Matrix:	Water	TAT (Days):	5
Version:	Default		Units: mg/L	Location:	Kelowna	HT (Days):	3
Analysis Ref:	APHA 4500-NO2 B	Prep Ref:	N/A	Container:	500 mL HDPE - Unpreserved		

Analyte / Default RDL:	
Nitrite as N	0.002

Analysis:	**PAH in Water**			Matrix:	Water	TAT (Days):	5
Version:	Default		Units: ug/L	Location:	Richmond	HT (Days):	14
Analysis Ref:	EPA 8270D	Prep Ref:	Base/Neutral	Container:	1 L AG - NaHSO4		

Analyte / Default RDL:					
Acenaphthene	0.05	Acenaphthylene	0.05	Acridine	0.05
Anthracene	0.05	Benz (a) anthracene	0.05	Benzo (a) pyrene	0.01
Benzo (b) fluoranthene	0.05	Benzo (g,h,i) perylene	0.05	Benzo (k) fluoranthene	0.05
Chrysene	0.05	Dibenz (a,h) anthracene	0.05	Fluoranthene	0.05
Fluorene	0.05	Indeno (1,2,3-cd) pyrene	0.05	Naphthalene	0.3
Phenanthrene	0.1	Pyrene	0.02	Quinoline	0.1

Analysis:	**pH in Water**			Matrix:	Water	TAT (Days):	5
Version:	Default		Units: pH units	Location:	Richmond	HT (Days):	0.01
Analysis Ref:	APHA 4500-H+ B	Prep Ref:	N/A	Container:	1 L HDPE - Unpreserved		

Analyte / Default RDL:	
pH	0.01

Analysis:	**Phosphorus, Total (persulfate)**			Matrix:	Water	TAT (Days):	5
Version:	Default		Units: mg/L	Location:	Kelowna	HT (Days):	28
Analysis Ref:	APHA 4500-P H	Prep Ref:	N/A	Container:	125 mL HDPE - H2SO4		

Analyte / Default RDL:	
Phosphorus, Total as P	0.001

Analysis:	**Sulfate in Water by IC**			Matrix:	Water	TAT (Days):	5
Version:	Default		Units: mg/L	Location:	Kelowna	HT (Days):	28
Analysis Ref:	APHA 4110 B	Prep Ref:	KEL	Container:	500 mL HDPE - Unpreserved		

Analyte / Default RDL:	
Sulfate	0.2

Analysis:	**Total Recoverable Metals by ICPMS**			Matrix:	Water	TAT (Days):	5
Version:	Default		Units: mg/L	Location:	Richmond	HT (Days):	180
Analysis Ref:	APHA 3125 B	Prep Ref:	N/A	Container:	125 mL HDPE - HNO3		

Analyte / Default RDL:					
Aluminum, total	0.05	Antimony, total	0.001	Arsenic, total	0.005
Barium, total	0.05	Beryllium, total	0.001	Bismuth, total	0.001
Boron, total	0.04	Cadmium, total	0.0001	Calcium, total	2
Chromium, total	0.005	Cobalt, total	0.0005	Copper, total	0.002
Iron, total	0.1	Lead, total	0.001	Lithium, total	0.001
Magnesium, total	0.1	Manganese, total	0.002	Molybdenum, total	0.001
Nickel, total	0.002	Phosphorus, total	0.2	Potassium, total	0.2
Selenium, total	0.005	Silicon, total	5	Silver, total	0.0005
Sodium, total	0.2	Strontium, total	0.01	Sulfur, total	10
Tellurium, total	0.002	Thallium, total	0.0002	Thorium, total	0.001
Tin, total	0.002	Titanium, total	0.05	Uranium, total	0.0002
Vanadium, total	0.01	Zinc, total	0.04	Zirconium, total	0.001

PREPARED FOR Morrison Hershfield Limited **DATE** May-06-15

Analysis Details:

Analysis:	**Total Recoverable Metals by ICPMS (Low)**			Matrix:	Water	TAT (Days):	5
Version:	Default		Units: mg/L	Location:	Richmond	HT (Days):	180
Analysis Ref:	APHA 3125 B	Prep Ref:	N/A	Container:	125 mL HDPE - HNO3		

Analyte / Default RDL:					
Aluminum, total	0.005	Antimony, total	0.0001	Arsenic, total	0.0005
Barium, total	0.005	Beryllium, total	0.0001	Bismuth, total	0.0001
Boron, total	0.004	Cadmium, total	0.00001	Calcium, total	0.2
Chromium, total	0.0005	Cobalt, total	0.00005	Copper, total	0.0002
Iron, total	0.01	Lead, total	0.0001	Lithium, total	0.0001
Magnesium, total	0.01	Manganese, total	0.0002	Molybdenum, total	0.0001
Nickel, total	0.0002	Phosphorus, total	0.02	Potassium, total	0.02
Selenium, total	0.0005	Silicon, total	0.5	Silver, total	0.00005
Sodium, total	0.02	Strontium, total	0.001	Sulfur, total	1
Tellurium, total	0.0002	Thallium, total	0.00002	Thorium, total	0.0001
Tin, total	0.0002	Titanium, total	0.005	Uranium, total	0.00002
Vanadium, total	0.001	Zinc, total	0.004	Zirconium, total	0.0001

Analysis:	**Total Recoverable Metals by ICPMS (Ultra Low)**			Matrix:	Water	TAT (Days):	5
Version:	Default		Units: ug/L	Location:	Richmond	HT (Days):	180
Analysis Ref:	APHA 3125 B	Prep Ref:	N/A	Container:	125 mL HDPE - HNO3		

Analyte / Default RDL:					
Aluminum, total	1	Antimony, total	0.05	Arsenic, total	0.05
Barium, total	0.1	Beryllium, total	0.01	Bismuth, total	0.01
Boron, total	1	Cadmium, total	0.002	Calcium, total	40
Chromium, total	0.1	Cobalt, total	0.005	Copper, total	0.1
Iron, total	2	Lead, total	0.05	Lithium, total	0.05
Magnesium, total	5	Manganese, total	0.05	Molybdenum, total	0.01
Nickel, total	0.02	Phosphorus, total	10	Potassium, total	10
Selenium, total	0.1	Silicon, total	50	Silver, total	0.01
Sodium, total	10	Strontium, total	0.1	Sulfur, total	500
Tellurium, total	0.05	Thallium, total	0.004	Thorium, total	0.01
Tin, total	0.05	Titanium, total	0.2	Uranium, total	0.001
Vanadium, total	0.2	Zinc, total	1	Zirconium, total	0.01

Analysis:	**Total Suspended Solids**			Matrix:	Water	TAT (Days):	5
Version:	Default		Units: mg/L	Location:	Edmonton	HT (Days):	7
Analysis Ref:	APHA 2540 D*	Prep Ref:	N/A	Container:	1 L HDPE - Unpreserved		

Analyte / Default RDL:	
Solids, Total Suspended	1

Analysis:	**VH in Water**			Matrix:	Water	TAT (Days):	5
Version:	Default		Units: ug/L	Location:	Richmond	HT (Days):	14
Analysis Ref:	BCMOE VHw	Prep Ref:	N/A	Container:	2 x 40 mL AG - NaHSO4		

Analyte / Default RDL:	
VHw (6-10)	100

ANALYTICAL SERVICES CAPABILITIES

PREPARED FOR Morrison Hershfield Limited **DATE** May-06-15

Analysis Details:

Analysis:	**VOC in Water**		Matrix:	Water	TAT (Days): 5
Version:	Default	Units: ug/L	Location:	Richmond	HT (Days): 14
Analysis Ref:	EPA 8260B	Prep Ref: N/A	Container:	2 x 40 mL AG - NaHSO4	

Analyte / Default RDL:					
Benzene	0.5	Bromodichloromethane	0.5	Bromoform	0.5
Carbon tetrachloride	0.5	Chlorobenzene	0.5	Chloroethane	1
Chloroform	0.5	Dibromochloromethane	0.5	1,2-Dibromoethane	0.3
Dibromomethane	1	1,2-Dichlorobenzene	0.5	1,3-Dichlorobenzene	0.5
1,4-Dichlorobenzene	0.5	1,1-Dichloroethane	0.5	1,2-Dichloroethane	0.5
1,1-Dichloroethene	1	cis-1,2-Dichloroethene	0.5	trans-1,2-Dichloroethene	0.5
1,2-Dichloropropane	0.5	cis-1,3-Dichloropropene	0.5	trans-1,3-Dichloropropene	0.5
Ethylbenzene	0.5	Methyl tert-butyl ether	0.5	Methylene chloride	1
Styrene	0.5	1,1,2,2-Tetrachloroethane	0.5	Tetrachloroethene	0.5
Toluene	0.5	1,1,1-Trichloroethane	0.5	1,1,2-Trichloroethane	0.5
Trichloroethene	0.5	Trichlorofluoromethane	1	Vinyl chloride	1
Xylenes (total)	1				

* in Analysis/Prep Ref indicates that modifications have been made from the reference method