GROUNDWATER MONITORING REPORT
FIRST 2018 SEMI-ANNUAL MONITORING EVENT

SAMPLED APRIL 19, 2018

TEKOI LANDFILL
Tooele County, Utah

PROJECT NO: 18-04-29

Prepared for:

Waste Management of Utah

June 2018

Prepared by

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EXECUTIVE SUMMARY

This report presents the results of groundwater monitoring of the first 2018 semi-annual groundwater sampling event for the Tekoi Landfill in Skull Valley, Utah. The Tekoi Landfill includes separate cells for municipal solid waste (MSW) and construction and demolition (C&D) waste. The landfill is owned by the Skull Valley Band of Goshute Indians Reservation and is operated by CR Group, LLC, a subsidiary of Waste Management, Utah (WMU). The Tekoi Landfill is located about 43 road miles west and 26 road miles south of Salt Lake City, Utah, near Mile Marker 9 on Skull Valley Road (State Highway 196), and occupies 480 acres in the south part of Section 26, Township 5 South, Range 8 West in Tooele County, Utah, Figure 1.

The first 2018 monitoring event included detection monitoring for wells MW-5D, MW-5S, MW-6D, MW-6S and MW-7D. Wells MW-5D, MW-6D and MW-7D were sampled on April 19, 2018. Wells MW-5S and MW-6S were dry.

Inorganic parameter monitoring results are statistically analyzed using the statistical analysis program DUMPStat® based on an intra-well statistical approach. The intra-well approach compares each new measurement at an individual well to its own historic background data set for a given constituent.

Volatile organic compounds (VOCs) are evaluated by comparison to their reporting limits. A VOC exceedance is defined as a verified detection of any VOC above its reporting limit (RL), which is equal to the laboratory Practical Quantitation Limit (PQL).

No VOCs were detected in facility monitor well samples during this event. No evaluated constituent produced a statistical exceedance in downgradient detection monitoring wells during the first 2018 semi-annual monitoring event except for bicarbonate alkalinity (as $CaCO_3$) in monitor well MW-5D. Details are provided in Section 5.1.

1 INTRODUCTION

This report presents the results of groundwater monitoring during the first 2018 semi-annual event for the Tekoi Landfill in Skull Valley, Utah. The Tekoi Landfill includes separate cells for municipal waste (MSW) and construction and demolition (C&D) waste owned by the Skull Valley Band of Goshute Indians Reservation and operated by CR Group, LLC, a subsidiary of Waste Management, Utah (WMU). The Tekoi Landfill is located about 43 road miles west and 26 road miles south of Salt Lake City, Utah, near Mile Marker 9 on Skull Valley Road (State Highway 196), and occupies 480 acres in the south part of Section 26, Township 5 South, Range 8 West in Tooele County, Utah. A site location map is included as Figure 1.

WMU began operation of the Tekoi Landfill in early 2008. In compliance with the permitting documents as presented in the November 2005 Municipal Solid Waste Balefill Permit Design Engineering Report and the December 2005 Construction and Demolition Landfill Design Engineering Report, and applicable USEPA regulations, WMU continued environmental monitoring activities that began in 2005. Those activities include routine groundwater monitoring and reporting performed under the Groundwater Monitoring and Reporting Plan (GMRP), dated March 2009, revised August 2013. The GMRP incorporates monitoring elements that optimize environmental protection during and after landfill development. The GMRP includes monitor well locations selected on the basis of hydrogeologic conditions beneath the site that will provide early detection of a potential release from the facility in accordance with detection monitoring requirements as outlined in federal regulation 40 CFR Part 258 (Subtitle D). As an American Indian Reservation location, federal (i.e., USEPA) solid waste regulations are applicable.

2 GROUNDWATER MONITORING PROGRAM

2.1 Monitoring Network and Programs

The groundwater detection monitoring network consists of five monitor wells (MW-5S, MW-5D, MW-6S, MW-6D and MW-7D). The wells are completed in the uppermost water-bearing unit, called the G3/G4 Gravel, or in the overlying dry unit, called the G2 Gravel, beneath and down-gradient from the active MSW and C&D cells. One well (MW-1) and two piezometers (P-5 and P-6) also are monitored for water levels for purposes of generating technically viable groundwater contour maps. The following table summarizes the groundwater monitoring system at the Tekoi Landfill.

Well/Piezometer	Screened Stratum	Monitoring Function
MW-5S	G2 Gravel (dry)	MSW Cells, C&D Cells
MW-5D	G3/G4 Gravel	MSW Cells, C&D Cells
MW-6S	G2 Gravel (dry)	MSW Cells, C&D Cells*
MW-6D	G3/G4 Gravel	MSW Cells, C&D Cells*
MW-7D	G3/G4 Gravel	MSW Cells, C&D Cells
MW-1	G2 Gravel (silt above/connected to the G2 Gravel)	(water levels only)
P-5	G2 Gravel	(water levels only)
P-6	G3/G4 Gravel	(water levels only)

* Wells MW-6S and MW-6D are designated primarily as C&D wells until Phase 3 MSW disposal starts in the future.

2.2 Monitoring Schedule and Parameters

This report describes the first 2018 semi-annual groundwater monitoring event for the Tekoi Landfill. Samples were collected April 19, 2018 from groundwater monitor wells MW-5D, MW-6D and MW-7D. Monitoring well MW-5S and MW-6S did not produce a sufficient volume for sample collection and analysis and are designated as dry wells for this sampling event.

The following table summarizes the sampling schedule for initial background and detection monitoring sample collection for performing compliance monitoring using an intra-well statistical methodology. Initial background monitoring was conducted for indicator parameters and 40 CFR 258 Appendix I parameters. Detection monitoring is conducted semi-annually for indicator parameters, and annually for 40 CFR 258 Appendix I parameters following the establishment of initial background and after each routine updating of background.

MSW Landfill	Type of Monitoring	Frequency
Wells monitored during Phases 1 through 6 MW-5S, MW-5D, and MW-7D	Initial Background	Quarterly (for eight sampling events): Appendix I, Indicators
	Detection	Semi-Annual: Indicators Annual: Appendix I
Additional wells monitored during Phases 3 through 6 MW-6S and MW-6D	Initial Background	Quarterly (for eight sampling events): Appendix I, Indicators. To begin about two years before disposal in Phase 3
	Detection	Semi-Annual: Indicators Annual: Appendix I

C&D Landfill	Type of Monitoring	Frequency
MW-5S, MW-5D, MW-7D during disposal in North C&D cell	Initial Background	Quarterly (for eight sampling events): Appendix I, Indicators.
	Detection	Annual: Appendix I, Indicators.
MW-6S and MW-6D during disposal in South C&D cell	Initial Background	Quarterly (for eight sampling events): Appendix I, Indicators.
	Detection	Annual: Appendix I, Indicators.

Notes:

Monitoring for the C&D Landfill does not require separate sampling events; accordingly, monitoring will be done at the same time as monitoring for the MSW disposal cells.

Wells MW-6S and MW-6D are monitored annually in the first half of each year. These wells are designated as C&D wells, which have an annual sampling requirement for Appendix I and leachate indicators (typically performed in April). This sampling schedule will continue until Phase 3 MSW disposal starts, which is when semi-annual detection monitoring will begin on a schedule consistent with wells MW-5S, MW-5D, and MW-7D.

The next semi-annual detection monitoring event is tentatively planned to occur in October 2018 with sample analyses for indicator parameters only. In addition, water

levels will be measured at wells MW-6S and MW-6D, and piezometers MW-1, P-5, and P-6.

2.3 Monitor Well Inspection

Visual inspection of the surface condition of wells and piezometers was done by sampling personnel. The wells and piezometers were observed for functionality and integrity, including labeling, concrete pads, and surface seals. The well ID tags were noted to be faded and difficult to read, also weep holes were noted to be missing for wells MW-1 and MW-7D. The facility has been informed of the matters and new ID tags are planned as well as weep holes for MW-1 and MW-7D. A copy of the well condition inspection form completed for the subject sampling event is included in Appendix A.

2.4 Monitor Well Purging

Water levels were measured and recorded prior to purging. After water-level measurements were recorded, each well was purged using low-flow techniques until field parameter stabilization. Field measurements of pH, temperature, specific conductance, and turbidity were recorded during purging and prior to sample collection. Groundwater color, clarity, and odor were also noted on groundwater sampling forms. No unusual observations were noted. Groundwater sampling field information forms are included in Appendix A.

2.5 Monitor Well Sampling

Samples were collected in containers provided by the laboratory, labeled, and placed in insulated coolers with sufficient ice to maintain the temperatures as close as possible at 4°C for sample preservation purposes. All wells produced a sufficient volume of water for sampling and analysis of the required parameters, with the exception of monitoring well MW-5S and MW-6S, which were dry. Groundwater samples were shipped to the analytical laboratory on April 20, 2018 via overnight courier. The samples arrived in good condition based on information provide in the laboratory login sample receipt checklist.

3 GROUNDWATER CONDITIONS

The Tekoi Landfill is located on the eastern topographic flank of the north-south oriented Skull Valley, on alluvial fan sediments eroded from the Stansbury Mountains. Groundwater beneath the Tekoi Landfill occurs in three separate water-bearing strata: two lenticular clayey sandy gravels, and a clay stratum beneath the gravels. The shallower zone, called G2 Gravel, is the shallowest water-bearing stratum and is present beneath the western portion of the Tekoi Landfill. The second zone, called G3/G4 Gravel, is about 10 feet deeper and also is present beneath the western portion of the Tekoi Landfill. The third zone is comprised primarily of low permeability clay that encases the lenticular gravels and is present beneath the entire property. The shallow gravels are not water-bearing everywhere likely because of Skull Valley's very dry climate, which minimizes surface water recharge. The G2 and G3/G4 Gravels contain groundwater in some areas under primarily unconfined conditions, with water levels ranging from 30 to 80 feet below ground surface (bgs). Groundwater occurs in several isolated zones within the clay units at depths between 75 and 160 feet bgs. These zones are hydraulically isolated from the overlying gravels.

The monitor well system emphasizes monitoring in the G3/G4 Gravel, the uppermost water-bearing unit beneath and down-gradient from the active MSW and C&D cells. Groundwater levels within the strata screened by site monitor wells are illustrated on the Groundwater Contour Map, Figure 2.

3.1 Groundwater Flow Gradient and Rate

In general, shallow groundwater within the G3/G4 gravel beneath the facility flows to the north. The detection monitoring wells are strategically located within the shallow gravel and downgradient from the disposal cell sump areas since such wells are capable of a much earlier detection of a potential leachate release than wells placed in the low permeability clay. Further, any potential leachate head buildup would occur at the sumps, if at all, considering Skull Valley's very dry climate. Figure 2 provides the water-level elevations for the uppermost water-bearing zone (G3/G4 gravel) for April 2018.

The hydraulic gradient was estimated from the water-level measurements collected during the semi-annual sampling event. The gradient for a particular part of the site is determined by calculating the difference between the groundwater contours (head difference) and dividing by the horizontal distance between the contours. The values are in ft./ft.; multiply

by 5,280 for the gradient in feet per mile. Minimum and maximum rates of groundwater movement were estimated using the groundwater velocity equation (Driscoll, 1986):

$$v = 2{,}830Ki/n_e$$

Where:

v = groundwater velocity (ft./day);
K = hydraulic conductivity (cm/sec);
i = hydraulic gradient (ft./ft.);
n_e = effective porosity (percent); and
2,830 converts cm/sec to ft./day.

The hydraulic conductivity for the G3/G4 Gravel is estimated to be 4.24 x 10^{-4} cm/sec. and the average effective porosity is estimated to be 20 percent, based on values provided in the GMRP. The average hydraulic gradient was estimated for the G3/G4 Gravel from Figure 2 to be 0.004 ft./ft.

Using the equation and the values described above, the estimated minimum and maximum groundwater velocities (with flow directions) for the G3/G4 Gravel during the first 2018 semi-annual sampling event is as follows:

First 2018 Semi-Annual Monitoring Event

$$v_{avg} = \frac{2{,}830 \times 4.24E\text{-}04 \times 0.004}{0.20} * 365$$

$$v_{avg} = 8.8 \text{ ft/year (northwesterly)}$$

4 LABORATORY ANALYTICAL DATA

Groundwater samples were analyzed for 40 CFR 258 Appendix I parameters and inorganic constituents, as listed in the GMRP, Table 5-1, "Groundwater Monitoring Parameters." The parameters analyzed are consistent with the requirements of Utah Solid Waste Regulations. Laboratory analyses were performed by TestAmerica Laboratories, Inc. of Arvada, Colorado. The analytical data are summarized in Table 1. The laboratory report and chain-of-custody forms are included in Appendix B.

4.1 Field QA/QC Samples

Field Quality Assurance/Quality Control (QA/QC) samples prepared during the first 2018 semi-annual groundwater monitoring event consisted of one (1) trip blank, and one (1) monitor well duplicate sample. The trip blank was prepared by the laboratory, delivered to the site and returned with the samples. The monitor well duplicate sample (DUP) was collected at MW-5D. The trip blank was analyzed for VOCs only. The monitor well duplicate sample was analyzed for all monitoring parameters.

Analysis of the trip did not indicate problems with procedures as all constituents occurred below reporting limits (RLs) except for the low-level detection of acetone. Since acetone was not detected in any of the monitor well samples and is a common laboratory artifact, no corrective action was deemed necessary.

The duplicate sample was taken from well MW-5D and analyzed for organic and inorganic parameters. Original and duplicate sample results are included in Table 2, which show the relative percent difference (RPD) between the original and duplicate sample results for inorganic parameters. The RPD is a calculated value used to compare original and duplicate sample results and provide an estimate of analytical precision. The original and duplicate sample results for well MW-5D indicate that analytical results show reasonable precision and demonstrate overall consistency for all parameters.

5 STATISTICAL ANALYSIS OF GROUNDWATER DATA

5.1 Metals and Inorganic Indicator Constituents

Inorganic parameter monitoring results are analyzed using the statistical analysis program DUMPStat® (based on an intra-well statistical approach). Use of intra-well comparisons as the statistical evaluation method at the Tekoi Landfill is described in the GMRP, Section 5.3, "Monitoring Data Evaluation Using Statistical Methods." In order to eliminate the effects of spatial variability and to increase the power of the statistics, an intra-well combined Shewhart CUSUM control chart approach is used for the Tekoi Landfill. With intra-well statistics, the effect of spatial variability is eliminated when performing intra-well statistical comparisons because each well's chemistry is compared to its own monitoring history. This method is consistent with the United States Environmental Protection Agency (EPA) *Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities Unified Guidance*, March 2009 (Unified Guidance).

The background monitoring data for MW-5D is August 2008 through December 2017 in accordance with the December 2017 Alternate Source Demonstration prepared by Swift River. The background period for MW-6D is August 2008 through June 2016 and MW-7D is March 2009 through December 2016. Monitor wells MW-5S and MW-6S remain components of the monitoring program, but have been dry in each previous monitoring event. As such, no background monitoring database has been developed for these wells. As continuously dry wells, the "background monitoring" at these wells has confirmed the absence of water quality impacts to the G2 Gravel.

The combined Shewhart-CUSUM procedure requires a minimum of eight historical independent samples (i.e., background data) to provide a reliable estimate of the mean and standard deviation of each constituent in each well. Some constituents have detection frequencies that are less than 25 percent, which are needed to establish control limits. Constituents that have less than 25 percent detection frequency, utilize a non-parametric prediction limit (NPPL).

No evaluated constituent produced a statistical exceedance in downgradient detection monitoring wells during the first 2018 semi-annual monitoring event. Statistical data are presented in both graphical and tabular form in Appendix C of this report.

5.2 Power Curves

Statistical power analysis, based on site-specific conditions, indicates that the annual site-wide positive rate is less than 10 percent, a rate that is consistent with published USEPA power curves. Statistical power is used to determine a statistical method's effectiveness at correctly identifying true changes in the groundwater chemistry. A target false positive rate for semi-annual results of approximately five percent (based on an annual rate goal of 10 percent) and at 50 percent and 80 percent for differences of three to four standard deviations, respectively, is in accordance with the USEPA Unified Guidance. It is noted that the false positive rate could be reduced by reducing the number of constituents that are subjected to statistical comparison. Reduction of the number of monitored constituents may be recommended for consideration in the future, but is not included in this groundwater monitoring report.

5.3 Volatile Organic Compounds (VOCs)

Since VOCs are anthropogenic and have not been detected in background, classical statistical evaluation of these data is not performed nor are these data included in the statistical power computations. Instead, a VOC exceedance is defined as a verified detection of any VOC above its reporting limit (RL). VOCs have never been detected and verified at the Tekoi Landfill. Therefore, the laboratory RLs represent a reasonable non-parametric prediction limit (NPPL) for each VOC that will be used for future data comparisons.

5.4 Conclusions

Based on the statistical results for the first 2018 sampling event and the absence of any VOC detections, groundwater monitoring results do not indicate a landfill-related release has occurred and the facility continues to be in compliance with Solid Waste Disposal Facility criteria stipulated in 40 CFR Part 258 (Subtitle D) regulations.

TABLE 1

ANALYTICAL DATA SUMMARY

Table 1

Analytical Data Summary for 4/19/2018

Constituents	Units	MW-5D	MW-6D	MW-7D
Alkalinity, total (as caco3)	mg/L	470	350	170
Ammonia (as n)	mg/L	<.2	<.2	<.2
Antimony	mg/L	<.01	<.01	<.01
Arsenic	mg/L	<.015	<.015	<.015
Barium	mg/L	.025	.028	.047
Beryllium	mg/L	<.001	<.001	<.001
Bicarbonate (as caco3)	mg/L	470	350	170
Cadmium	mg/L	<.005	<.005	<.005
Calcium	mg/L	200	320	220
Carbonate (as caco3)	mg/L	<5	<5	<5
Chloride	mg/L	2100	3000	2100
Chromium	mg/L	<.01	<.01	<.01
Cobalt	mg/L	<.01	<.01	<.01
COD	mg/L	<100	<100 *	<100
Copper	mg/L	<.015	<.015	<.015
Iron	mg/L	<.1	.2	<.1
Lead	mg/L	<.009	<.009	<.009
Magnesium	mg/L	240	310	240
Manganese	mg/L	<.01	<.01	<.01
Mercury	mg/L	<.0002	<.0002	<.0002
Nickel	mg/L	<.04	<.04	<.04
Potassium	mg/L	33	39	39
Selenium	mg/L	<.015	<.015	<.015
Silver	mg/L	<.01	<.01	<.01
Sodium	mg/L	1300	1600	920
Sulfate	mg/L	900	1500	470
TDS	mg/L	5100	6700	3800
Thallium	mg/L	<.015	<.015	<.015
Total kjeldahl nitrogen	mg/L	<.5	<.5	<.5
Total organic carbon	mg/L	1.1 *	1.6 *	<1.0 *
Vanadium	mg/L	<.01	<.01	<.01
Zinc	mg/L	<.02	<.02	<.02

* - The displayed value is the arithmetic mean of multiple database matches.

TABLE 2

DUPLICATE SAMPLE ANALYSIS

Table 2
Duplicate Sample Analysis

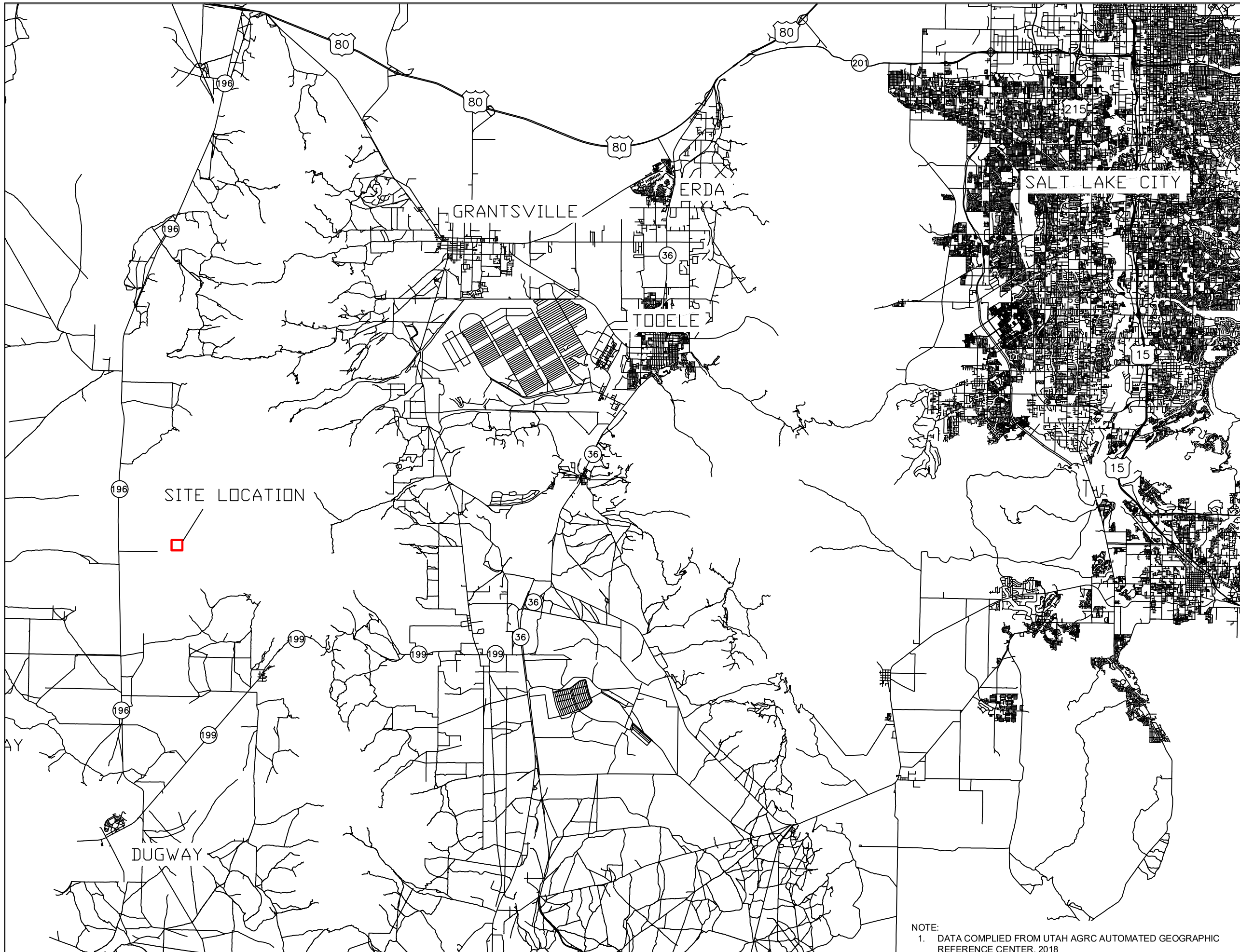
Constituent (mg/L)	RL	5xRL	Duplicate	MW-5D	RPD or Absolute Difference
Antimony	0.01	0.05	ND	ND	NC
Arsenic	0.015	0.075	ND	ND	NC
Barium	0.01	0.05	0.025	0.025	0.00
Beryllium	0.001	0.005	ND	ND	NC
Cadmium	0.005	0.025	ND	ND	NC
Calcium	0.2	1	210	200	4.88
Chromium	0.01	0.05	ND	ND	NC
Cobalt	0.01	0.05	ND	ND	NC
Copper	0.015	0.075	ND	ND	NC
Iron	0.1	0.5	ND	ND	NC
Lead	0.009	0.045	ND	ND	NC
Magnesium	0.2	1	240	240	0.00
Manganese	0.01	0.05	ND	ND	NC
Mercury	0.0002	0.001	ND	ND	NC
Nickel	0.04	0.2	ND	ND	NC
Potassium	3	15	34	33	2.99
Selenium	0.015	0.075	ND	ND	NC
Silver	0.01	0.05	ND	ND	NC
Sodium	1	5	1300	1300	0.00
Thallium	0.015	0.075	ND	ND	NC
Vanadium	0.01	0.05	ND	ND	NC
Zinc	0.02	0.1	ND	ND	NC
Ammonia	0.2	1	ND	ND	NC
Bicarbonate Alkalinity	5.0	25	470	470	0.00
Carbonate Alkalinity	5.0	25	ND	ND	NC
Total Alkalinity	5.0	25	470	470	0.00
Chemical Oxygen Demand	100	500	ND	ND	NC
Chloride	60	300	2200	2100	4.65
TKN	0.5	2.5	ND	ND	NC
Sulfate	100	500	890	900	1.12
TDS	40	200	4800	5100	6.06
TOC Result 1	1	5	1.1	1.1	0.00
TOC Result 2	1	5	1	1.1	9.52

Notes:

$$RPD = [\ |S-D|/(S+D)/2\ ] \times 100$$

Where,
RPD - Relative Percent Difference
S - Sample Result (original sample)
D - Duplicate Sample Result
A control limit of 20% for the RPD is used for original and duplicate sample values > 5x the RL.
A control limit of the RL is used if either the original or duplicate sample value is <5x the RL.
RL - Reporting Limit
ND - Not Detected
NC - Not Calculated

FIGURES



NOTE:
1. DATA COMPLIED FROM UTAH AGRC AUTOMATED GEOGRAPHIC REFERENCE CENTER, 2018

The CAREL CORPORATION

136 Pecan Street, Keller, TX 76248

N

SCALE:

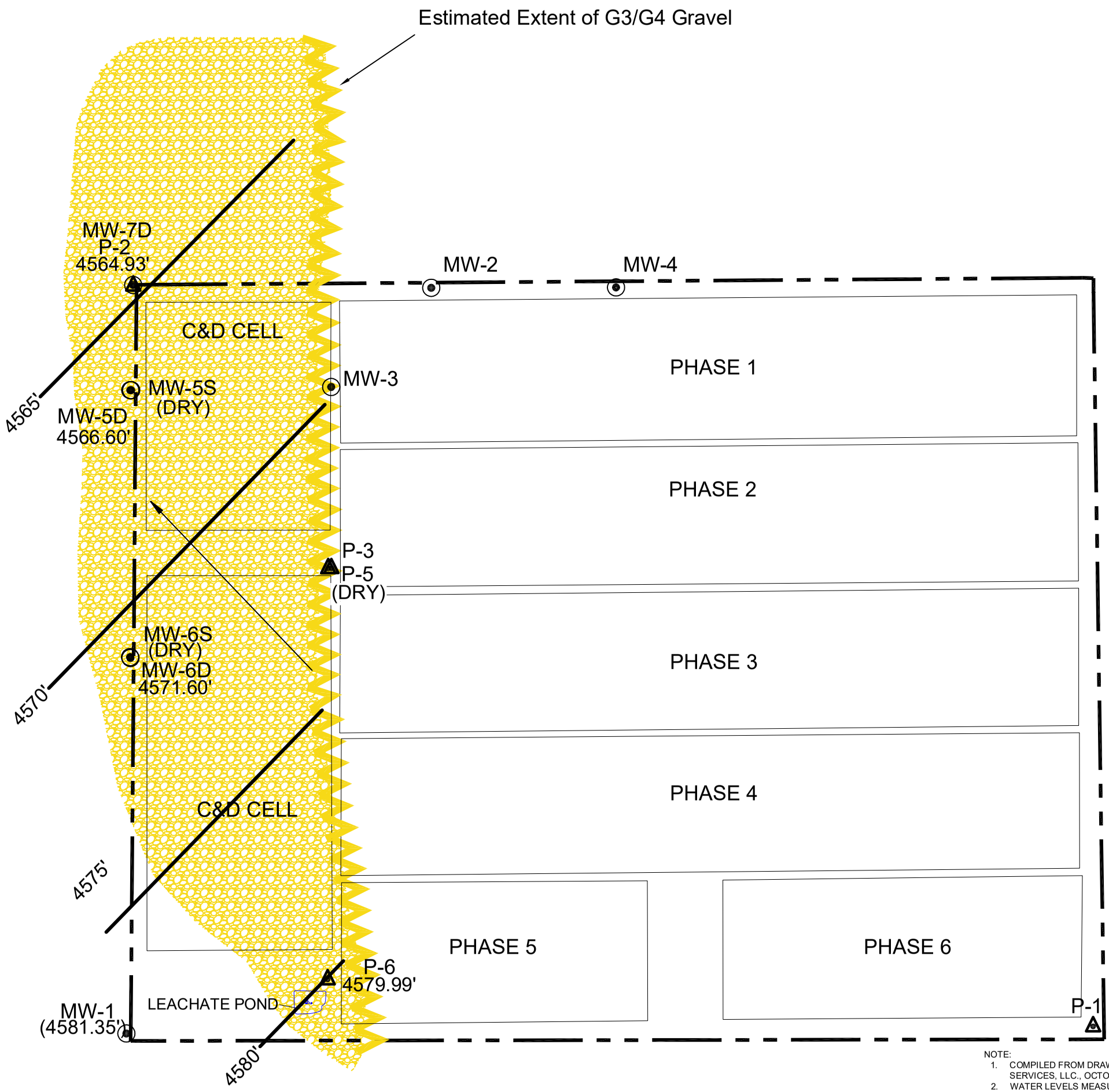
0 2.5 5 Miles

SITE LOCATION MAP

TEKOI LANDFILL

TOOELE COUNT, UTAH

DATE DRAFTED: April 27, 2018	REV. NO.: 0
FILENAME: I:\UTAH\Tekoi\Contour Maps\2018\2018_SITE LOCATION.dwg	
DESIGNED BY: CMT	FIGURE:
DRAWN BY: CMT	1
CHECKED BY:	
APPROVED BY:	



NOTE:
1. COMPILED FROM DRAWING BY SWIFT RIVER ENVIRONMENTAL SERVICES, LLC., OCTOBER 2017
2. WATER LEVELS MEASURED APRIL 19, 2018.
3. G2 GRAVEL NOT CONTOURED - ELEVATIONS IN PARENTHESIS

The CAREL CORPORATION

136 Pecan Street, Keller, TX 76248

LEGEND:

PROPERTY BOUNDARY

GROUNDWATER MONITORING WELL

PIEZOMETER

N

SCALE:

0 300 600
FEET

GROUNDWATER CONTOUR MAP
G3/G4 GRAVEL

APRIL 2018

TEKOI LANDFILL

TOOELE COUNT, UTAH

DATE DRAFTED: April 26, 2018	REV. NO.: 0
FILENAME: I:\UTAH\Tekoi\Contour Maps\2018\2018_COUNTOUR MAPS.dwg	
DESIGNED BY: CMT	FIGURE:
DRAWN BY: CMT	2
CHECKED BY:	
APPROVED BY:	

APPENDIX A

WELL CONDITION INSPECTION FORM
AND
FIELD INFORMATION FORMS, APRIL 19, 2018

TEKOI LANDFILL

WELL CONDITION INSPECTION FORM

SAMPLE DATE: Apr 19, 2018 **SAMPLING PERSONNEL:** M Price & J Wassem

WASTE MANAGEMENT

	P-5	P-6	MW-01	MW-5D	MW-5S	MW-6D	MW-6S	MW-07D
Depth to Water	Dry	50.15	35.76	75.18	Dry	50.09	Dry	81.93
Total Depth	63.1	62.7	46.6	83.4	60.7	87.9	48.3	100.8
Is the well's location appropriately shown on a facility map & adequately flagged if hard to find?	Y	Y	Y	Y	Y	Y	Y	Y
Is the well elevation information inscribed at or on the well correct?	NA	NA	NA	NA	NA	NA	NA	NA
Is the well flush with surface or above ground?	AG	AG	AG	AG	AG	AG	AG	AG
Is the well free of physical damage?	Y	Y	Y	Y	Y	Y	Y	Y
? Is there a label on the outside of the casing intact with legible Well ID?	N	N	N	N	N	N	N	N
Is the casing protected by posts?	Y	Y	Y	Y	Y	Y	Y	N
Do above ground wells have weep holes at the base of the protective casing?	NA	NA	N	Y	Y	Y	Y	N
? Does the area around the well appear clean and free from weeds and trash?	Y	Y	Y	Y	Y	Y	Y	Y
Is the casing secure (attempt to move along two perpendicular axes)?	NA	NA	Y	Y	Y	Y	Y	Y
Is the surface seal a concrete pad or natural ground surface?	NG	NG	CP	CP	CP	CP	CP	CP
If concrete, is the surface seal void of differential erosion and free from cracks?	NA	NA	Y	Y	Y	Y	Y	Y
Is the surface seal/ground surface sloped to prevent ponding & free from water?	Y	Y	Y	Y	Y	Y	Y	Y
Is the well locked & casing cap void of large gaps to prevent unauthorized access?	Y	Y	Y	Y	Y	Y	Y	Y
Is there a survey mark on the riser/wellhead assembly cap?	Y	Y	Y	Y	Y	Y	Y	Y
Is the riser cap vented?	N	N	Y	Y	N	Y	N	Y
Is the annular space free of animal/insect nests?	NA	NA	Y	Y	Y	Y	Y	Y
Is the annular space appropriately filled with filtering material?	NA	NA	Y	Y	NA	Y	NA	Y
If a pump, can it be lifted a few inches? (do not test prior to sampling) (if NA, there is no pump in well)	NA	NA	Y	Y	NA	Y	NA	Y
Is the well free of kinks or bends?	Y	Y	Y	Y	Y	Y	Y	Y

Y=Yes; N=No; NA=Not Applicable; AG=Above Ground; FS=Flush with surface; CP=Concrete Pad; NG=Natural Ground Surface

Comments: _____

FIELD INFORMATION FORM

WASTE MANAGEMENT

Site Name: Tekoi

Site No.: 2769 Sample Point: MW-05D (Sample ID)

This Waste Management Field Information Form is Required
This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID:

PURGE INFO

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hrs:min)	WATER VOL IN ~~CASING~~ PET ~~(Gallons)~~ mL	ACTUAL VOL PURGED ~~(Gallons)~~ mL	WELL VOLs PURGED
041918	1035	0025	5000	25000	5

Note For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark changes, record field data, below

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment . . . Dedicated. Y or N

Filter Device: Y or N ~~0.45 µ or~~ µ (circle or fill in)

Purging Device: C — A-Submersible Pump, B-Peristaltic Pump, C-QED Bladder Pump, D-Bailer, E-Piston Pump, F-Dipper/Bottle

Sampling Device: C

Filter Type: NA — A-In-line Disposable, B-Pressure, C-Vacuum, X-Other —

X-Other:

Sample Tube Type: D — A-Teflon, B-Stainless Steel, C-PVC, D-Polypropylene, X-Other: —

WELL DATA

Well Elevation (at TOC): 4641.78 (ft/msl) — Depth to Water (DTW) (from TOC): 7518 (ft) — Groundwater Elevation (site datum, from TOC): 4566.6 (ft/msl)

Total Well Depth (from TOC): 852 (ft) — Stick Up (from ground elevation): (ft) — Casing ID: 2 (in) — Casing Material: PVC

Note Total Well Depth, Stick Up, Casing Id etc are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and Groundwater Elevation must be current.

STABILIZATION DATA (Optional)

Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) (µmhos/cm@25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
1045	1st	7.10	6.35	138	6.59	—	—	75.26
1050	2nd	7.10	6.29	135	4.83	—	—	75.26
1055	3rd	7.12	6.21	135	3.61	—	—	75.26
1100	4th	7.12	6.30	135	3.41	—	—	75.26
Suggested range for 3 consec. readings or note Permit/State requirements:		+/- 0.2	+/- 3%	–	–	+/- 10%	+/- 25 mV	Stabilize

Stabilization Data Fields are Optional *(i.e. complete stabilization readings for parameters required by WM, Site, or State) These fields can be used where four (4) field measurements are required by State/Permit/Site If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. If more fields above are needed, use separate sheet or form.*

FIELD DATA

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (umhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L-ppm)	eH/ORP (mV)	Other: DTW Units ft
041918	7.12	6.30	135	3.41	—	—	75.26

Final Field Readings are required *(i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site.*

FIELD COMMENTS

Sample Appearance: Clear — Odor: None — Color: Clear — Other:

Weather Conditions (required daily, or as conditions change): Direction/Speed: — Outlook: Cloudy, 50°F — Precipitation: Y or N

Specific Comments (including purge/well volume calculations if required):

Sample time 1105.

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):

Date	Name	Signature	Company
4/19/18	Michael Price	[signature]	Hansen, Allen & Luce
4/19/18	Jevin Warren	[signature]	HAL

DISTRIBUTION: WHITE/ORIGINAL - Stays with Sample, YELLOW - Returned to Client. PINK - Field Copy

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TAL-8029 WM (10/13) 3/31/2018

FIELD INFORMATION FORM

WASTE MANAGEMENT

Site Name: Tekoi

Site No.: 2769 Sample Point: MW-05S (Sample ID)

This Waste Management Field Information Form is Required
This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID.

PURGE INFO

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hrs:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (Gallons)	WELL VOLs PURGED
041918	1035				

Note For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark changes, record field data, below

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment . . . Dedicated: Y or N

Filter Device: Y or N 0.45 µ or ____ µ (circle or fill in)

Purging Device: A-Submersible Pump, B-Peristaltic Pump, C-QED Bladder Pump, D-Bailer, E-Piston Pump, F-Dipper/Bottle

Sampling Device:

X-Other:

Filter Type: A-In-line Disposable, B-Pressure, C-Vacuum, X-Other

Sample Tube Type: A-Teflon, B-Stainless Steel, C-PVC, D-Polypropylene, X-Other:

WELL DATA

Well Elevation (at TOC) (ft/msl) | Depth to Water (DTW) (from TOC) (ft) | Groundwater Elevation (site datum, from TOC) (ft/msl)

Total Well Depth (from TOC) (ft) | Stick Up (from ground elevation) (ft) | Casing ID (in) | Casing Material

Note: Total Well Depth, Stick Up, Casing Id etc are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and Groundwater Elevation must be current.

STABILIZATION DATA (Optional)

Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) (µmhos/cm@25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
	1st	1st						
	2nd	2nd						
	3rd	3rd						
	4th	4th						
Suggested range for 3 consec. readings or note Permit/State requirements:		+/- 0.2	+/- 3%	--	--	+/- 10%	+/- 25 mV	Stabilize

Stabilization Data Fields are Optional *(i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. If more fields above are needed, use separate sheet or form.*

FIELD DATA

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (umhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L-ppm)	eH/ORP (mV)	Other: Units

Final Field Readings are required *(i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site.*

FIELD COMMENTS

Sample Appearance: ____ Odor: ____ Color: ____ Other: ____

Weather Conditions (required daily, or as conditions change): Direction/Speed: ____ Outlook: ____ Precipitation: Y or N

Specific Comments (including purge/well volume calculations if required):

Well dry at TD 60.7'

No sample collected

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):

Date	Name	Signature	Company
4/19/18	Michael Price	[signature]	Hansen Allen & Luce
4/19/18	Jevin Warren	[signature]	HAL

DISTRIBUTION: WHITE/ORIGINAL - Stays with Sample, YELLOW - Returned to Client. PINK - Field Copy

13

TAL-8029 WM (10/13) 6/31/2018

FIELD INFORMATION FORM

WASTE MANAGEMENT

Site Name: Tekoi

Site No.: 2769 Sample Point: MW-06D (Sample ID)

This Waste Management Field Information Form is Required
This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID:

PURGE INFO

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hrs:min)	WATER VOL IN ~~CASING~~ PCT ~~(Gallons)~~ mL	ACTUAL VOL PURGED ~~(Gallons)~~ mL	WELL VOLs PURGED
041918	0835	0030	500	2500.0	5

Note For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark changes, record field data, below.

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment... Dedicated: (Y) or N

Purging Device: C — A-Submersible Pump, B-Peristaltic Pump, C-QED Bladder Pump, D-Bailer, E-Piston Pump, F-Dipper/Bottle

Sampling Device: C

X-Other:

Filter Device: Y or (N) — 0.45 µ or ____ µ (circle or fill in)

Filter Type: NA — A-In-line Disposable, B-Pressure, C-Vacuum, X-Other —

Sample Tube Type: C — A-Teflon, B-Stainless Steel, C-PVC, D-Polypropylene, X-Other: —

WELL DATA

Well Elevation (at TOC): 462169 (ft/msl)

Depth to Water (DTW) (from TOC): 50.09 (ft)

Groundwater Elevation (site datum, from TOC): 437.16 (ft/msl)

Total Well Depth (from TOC): 885 (ft)

Stick Up (from ground elevation): — (ft)

Casing ID: 2 (in)

Casing Material: PVC

Note: Total Well Depth, Stick Up, Casing Id. etc. are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and Groundwater Elevation must be current

STABILIZATION DATA (Optional)

Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) ~~(umhos/cm~~ mS@25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
0850	1st	7.14	1st 7.78	1.10	1.99	—	—	50.14
0855	2nd	7.23	2nd 7.91	1.12	2.85	—	—	50.16
0900	3rd	7.21	3rd 7.95	1.13	2.51	—	—	50.15
0905	4th	7.26	4th 7.96	1.14	3.40	—	—	50.16
Suggested range for 3 consec. readings or note Permit/State requirements:		+/- 0.2	+/- 3%	–	--	+/- 10%	+/- 25 mV	Stabilize

Stabilization Data Fields are Optional *(i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. If more fields above are needed, use separate sheet or form.*

FIELD DATA

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (umhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L-ppm)	eH/ORP (mV)	Other: DTW Units ft
041918	7.26	7.96	1.14	3.40	—	—	50.16

Final Field Readings are required *(i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site)*

FIELD COMMENTS

Sample Appearance: Clear Odor: None Color: Clear Other: —

Weather Conditions (required daily, or as conditions change): Direction/Speed: ____ Outlook: Cloudy, 45°F Precipitation: Y or (N)

Specific Comments (including purge/well volume calculations if required):

Sample time 0910

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):

Date	Name	Signature	Company
4/19/18	Michael Price	[signature]	Hansen, Allen & Luce
4/19/18	Jenna Warren	[signature]	HAL

DISTRIBUTION: WHITE/ORIGINAL - Stays with Sample, YELLOW - Returned to Client, PINK - Field Copy

13

TAL-8029WM (1013) 5/29/2018

FIELD INFORMATION FORM

WASTE MANAGEMENT

Site Name: Teko

Site No.: 2769 Sample Point: MW-065 (Sample ID)

This Waste Management Field Information Form is Required
This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID:

PURGE INFO

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hrs:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (Gallons)	WELL VOLs PURGED
041918	0835				

Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark changes, record field data, below.

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment... Dedicated: Y or N

Filter Device: Y or N 0.45 µ or ___ µ (circle or fill in)

Purging Device ___ A-Submersible Pump B-Peristaltic Pump C-QED Bladder Pump D-Bailer E-Piston Pump F-Dipper/Bottle

Filter Type: ___ A-In-line Disposable B-Pressure C-Vacuum X-Other ___

Sampling Device ___

X-Other: ___

Sample Tube Type: ___ A-Teflon B-Stainless Steel C-PVC D-Polypropylene X-Other: ___

WELL DATA

Well Elevation (at TOC) ___ (ft/msl)

Depth to Water (DTW) (from TOC) ___ (ft)

Groundwater Elevation (site datum, from TOC) ___ (ft/msl)

Total Well Depth (from TOC) ___ (ft)

Stick Up (from ground elevation) ___ (ft)

Casing ID ___ (in)

Casing Material ___

Note: Total Well Depth, Stick Up, Casing Id etc. are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and Groundwater Elevation must be current.

STABILIZATION DATA (Optional)

Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) (µmhos/cm@25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
	1st	1st	1st					
	2nd	2nd	2nd					
	3rd	3rd	3rd					
	4th	4th	4th					
Suggested range for 3 consec. readings or note Permit/State requirements:		+/- 0.2	+/- 3%	–	–	+/- 10%	+/- 25 mV	Stabilize

Stabilization Data Fields are Optional *(i.e. complete stabilization readings for parameters required by WM, Site, or State) These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. If more fields above are needed, use separate sheet or form.*

FIELD DATA

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (umhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L-ppm)	eH/ORP (mV)	Other: ___ Units ___

Final Field Readings are required *(i.e record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site.*

Sample Appearance: ___ Odor: ___ Color: ___ Other: ___

Weather Conditions (required daily, or as conditions change): Direction/Speed: ___ Outlook: ___ Precipitation: Y or N

FIELD COMMENTS

Specific Comments (including purge/well volume calculations if required):

Well dry at TD 48.3'
No sample collected

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):

Date	Name	Signature	Company
4/19/18	Michael Price	[signature]	Haley Aitken & Luce
4/19/18	Jevin Warren	[signature]	HAL

DISTRIBUTION: WHITE/ORIGINAL - Stays with Sample, YELLOW - Returned to Client, PINK - Field Copy

TAL-8029WM (1013) 5/31/2018

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FIELD INFORMATION FORM

WASTE MANAGEMENT

Site Name: Tekoi

Site No.: 2769 Sample Point: MW-07D (Sample ID)

This Waste Management Field Information Form is Required
This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID:

PURGE INFO

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hrs:min)	WATER VOL IN ~~CASING~~ P+T (~~Gallons~~) mL	ACTUAL VOL PURGED (~~Gallons~~) mL	WELL VOLs PURGED
041918	1245	0030	500	2500.0	5

Note For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged Mark changes, record field data, below.

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment . . . Dedicated: (Y) or N

Purging Device: C — A-Submersible Pump, B-Peristaltic Pump, C-QED Bladder Pump, D-Bailer, E-Piston Pump, F-Dipper/Bottle

Sampling Device: C

X-Other:

Filter Device: Y or (N) ~~0.45 µ~~ or ____ µ (circle or fill in)

Filter Type: NA — A-In-line Disposable, B-Pressure, C-Vacuum, X-Other ____

Sample Tube Type: D — A-Teflon, B-Stainless Steel, C-PVC, D-Polypropylene, X-Other: ____

WELL DATA

Well Elevation (at TOC): 464686 (ft/msl)

Depth to Water (DTW) (from TOC): 8193 (ft)

Groundwater Elevation (site datum, from TOC): 456493 (ft/msl)

Total Well Depth (from TOC): 1008 (ft)

Stick Up (from ground elevation): ____ (ft)

Casing ID: 2 (in)

Casing Material: PVC

Note: Total Well Depth, Stick Up, Casing Id. etc. are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and Groundwater Elevation must be current

STABILIZATION DATA (Optional)

Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) mS (~~umhos~~/cm@25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
1300	1st	7.38	5.54	13.6	4.63			81.95
1305	2nd	7.37	5.56	13.6	4.61			81.94
1310	3rd	7.40	5.57	13.8	3.31			81.94
1315	4th	7.41	5.59	13.9	2.76			81.94
Suggested range for 3 consec. readings or note Permit/State requirements.		+/- 0.2	+/- 3%	--	--	+/- 10%	+/- 25 mV	Stabilize

Stabilization Data Fields are Optional *(i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. If more fields above are needed, use separate sheet or form.*

FIELD DATA

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE mS (~~umhos~~/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L-ppm)	eH/ORP (mV)	Other: DTW Units ft
041918	7.41	5.59	13.9	2.76			81.94

Final Field Readings are required *(i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site*

FIELD COMMENTS

Sample Appearance: Clear Odor: None Color: Clear Other:

Weather Conditions (required daily, or as conditions change): Direction/Speed: Outlook: Cloudy, 60°F Precipitation: Y or (N)

Specific Comments (including purge/well volume calculations if required):

Sample taken 1320

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):

Date	Name	Signature	Company
4/19/18	Michael Price	Michael Price	Hansen, Allen + Luce
4/19/18	Jevin Warren	JWarren	HAL

DISTRIBUTION: WHITE/ORIGINAL - Stays with Sample, YELLOW - Returned to Client, PINK - Field Copy

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TAL-8029WM (1013) 5/31/2018

FIELD INFORMATION FORM

WASTE MANAGEMENT

Site Name: Tekoi

Site No.: 2769 Sample Point: DUP (Sample ID)

This Waste Management Field Information Form is Required
This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID:

PURGE INFO

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hrs:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (Gallons)	WELL VOLs PURGED

Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark changes, record field data, below.

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment . . . Dedicated: Y or N

Filter Device: Y or N 0.45 µ or ____ µ (circle or fill in)

Purging Device ____ A-Submersible Pump B-Peristaltic Pump C-QED Bladder Pump D-Bailer E-Piston Pump F-Dipper/Bottle

Sampling Device ____

X-Other: ____

Filter Type: ____ A-In-line Disposable B-Pressure C-Vacuum X-Other ____

Sample Tube Type: ____ A-Teflon B-Stainless Steel C-PVC D-Polypropylene X-Other: ____

WELL DATA

Well Elevation (at TOC) ____ (ft/msl) Depth to Water (DTW) (from TOC) ____ (ft) Groundwater Elevation (site datum, from TOC) ____ (ft/msl)

Total Well Depth (from TOC) ____ (ft) Stick Up (from ground elevation) ____ (ft) Casing ID ____ (in) Casing Material ____

Note Total Well Depth, Stick Up, Casing Id. etc. are optional and can be from historical data, unless required by Site/Permit Well Elevation, DTW, and Groundwater Elevation must be current

STABILIZATION DATA (Optional)

Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) (µmhos/cm@25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
	1st	1st						
	2nd	2nd						
	3rd	3rd						
	4th	4th						
Suggested range for 3 consec. readings or note Permit/State requirements:		+/- 0.2	+/- 3%	–	–	+/- 10%	+/- 25 mV	Stabilize

Stabilization Data Fields are Optional *(i.e. complete stabilization readings for parameters required by WM, Site, or State) These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site If more fields above are needed, use separate sheet or form.*

FIELD DATA

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (umhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L-ppm)	eH/ORP (mV)	Other: ____ Units ____

Final Field Readings are required *(i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site*

FIELD COMMENTS

Sample Appearance: ____ Odor: ____ Color: ____ Other: ____

Weather Conditions (required daily, or as conditions change): Direction/Speed: ____ Outlook: ____ Precipitation: Y or N

Specific Comments (including purge/well volume calculations if required):

Sample taken from MW-5D at 1135.
See field information form for MW-5D.

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):

Date	Name	Signature	Company
4/19/18	Michael Price	[signature]	Hansen, Allen + Luce
4/19/18	Jevin Warren	[signature]	HAL

DISTRIBUTION: WHITE/ORIGINAL - Stays with Sample, YELLOW - Returned to Client, PINK - Field Copy

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TAL-8029 WM (10/13) 5/31/2018

APPENDIX B

LABORATORY ANALYTICAL DATA AND CHAIN-OF-CUSTODY FORMS

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Denver
4955 Yarrow Street
Arvada, CO 80002
Tel: (303)736-0100

received
5-31-18

TestAmerica Job ID: 280-108811-1
Client Project/Site: 2769|Tekoi Balefill - 7314
Sampling Event: Semiannual April

For:
Waste Management
3683 S. 4975 W.
West Haven, Utah 84401

Attn: Mr. Mark Franc

Danielle Harrington

Authorized for release by:
5/31/2018 2:53:45 PM

Danielle Harrington, Project Manager II
(303)736-0176
danielle.harrington@testamericainc.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Definitions/Glossary

Client: Waste Management
Project/Site: 2769|Tekoi Balefill - 7314

TestAmerica Job ID: 280-108811-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
F1	MS and/or MSD Recovery is outside acceptance limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Metals

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.

General Chemistry

Qualifier	Qualifier Description
F1	MS and/or MSD Recovery is outside acceptance limits.
F2	MS/MSD RPD exceeds control limits
H	Sample was prepped or analyzed beyond the specified holding time
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Job ID: 280-108811-1

Laboratory: TestAmerica Denver

Narrative

CASE NARRATIVE

Client: Waste Management

Project: 2769|Tekoi Balefill

Report Number: 280-108811-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

This report may include reporting limits (RLs) less than TestAmerica's standard reporting limit. The reported sample results and associated reporting limits are being used specifically to meet the needs of this project. Note that data are not normally reported to these levels without qualification because they are inherently less reliable and potentially less defensible than required by the latest industry standards.

This submission may contain field data obtained by the sampler. The methods referenced in this submission for the field data results may not be the methods used to obtain the field data by the sampler.

RECEIPT
The samples were received on 4/20/2018; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the coolers at receipt time were 1.3° C and 1.9° C.

All sample bottles were received in acceptable condition.

HOLDING TIMES
The Total Dissolved Solid analysis for sample MW-05D was outside of historical data range biased low. The sample was re-analyzed outside of holding time and is within historical data range, therefore the re-analysis is being reported. The re-analysis result is also confirmed by the field duplicate that was collected at MW-05D and performed within holding time.

All other Holding Times were met.

METHOD BLANKS
All Method Blanks were within the acceptance limits.

LABORATORY CONTROL SAMPLES (LCS)
All Laboratory Control Samples were within the acceptance limits.

MATRIX SPIKE (MS) and MATRIX SPIKE DUPLICATES (MSD)
MS/MSD analyses were performed on sample MW-05D. The MS/MSD for method 8260B exhibited spike compound recoveries outside the QC limits for Styrene. The acceptable LCS analysis data indicated that the analytical system was operating within control; therefore, corrective action is deemed unnecessary.

The accuracy and precision of the Calcium, Magnesium, and Sodium MS/MSD performed on sample MW-05D could not be reliably evaluated, as the concentrations present in the parent sample were 4 times greater than the matrix spike concentration. The acceptable LCS analysis data indicated that the analytical system was operating within control; therefore, corrective action is deemed unnecessary.

The accuracy and precision of the Chloride MS/MSD performed on sample DUP could not be reliably evaluated, as the concentrations present in the parent sample were 4 times greater than the matrix spike concentration. The acceptable LCS analysis data indicated that

Job ID: 280-108811-1 (Continued)

Laboratory: TestAmerica Denver (Continued)

the analytical system was operating within control; therefore, corrective action is deemed unnecessary.

Laboratory generated MS/MSD analysis data have been provided. The MS/MSD for Total Kjeldahl Nitrogen method 351.2 exhibited spike compound recoveries outside the QC limits. Method precision and accuracy have been verified by the acceptable LCS/LCSD analysis data; therefore, corrective action is deemed unnecessary.

Laboratory generated MS/MSD analysis data have been provided. The MS/MSD for Chemical Oxygen Demand method 410.4 exhibited spike compound recoveries outside the QC limits. Method precision and accuracy have been verified by the acceptable LCS/LCSD analysis data; therefore, corrective action is deemed unnecessary.

All other Matrix Spike and Matrix Spike Duplicates were within the acceptance limits.

SAMPLE DUPLICATE
The method required Sample Duplicate could not be reported in batch 280-413499 for Total Alkalinity due to instrument error.

GENERAL CHEMISTRY
Several samples were analyzed at dilutions or smaller aliquot sizes for multiple parameters due to high concentrations of target analytes or matrix interferences. The reporting limits have been adjusted accordingly.

Detection Summary

Client: Waste Management
Project/Site: 2769|Tekoi Balefill - 7314

TestAmerica Job ID: 280-108811-1

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Client Sample ID: MW-05D — Lab Sample ID: 280-108811-1

Analyte	Result	Qualifier	NONE	NONE	Unit	Dil Fac	D	Method	Prep Type
Well Elevation	4641.78				ft/msl	1		Field Sampling	Total/NA
Depth to water	75.18				ft	1		Field Sampling	Total/NA
Groundwater Elevation	4566.6				ft/msl	1		Field Sampling	Total/NA
Field pH	7.12				SU	1		Field Sampling	Total/NA
Field Conductivity	6300				umhos/cm	1		Field Sampling	Total/NA
Field Temperature	13.5				Degrees C	1		Field Sampling	Total/NA
Field Turbidity	3.41				NTU	1		Field Sampling	Total/NA

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	25		10		ug/L	1		6010B	Total Recoverable
Calcium	200000		200		ug/L	1		6010B	Total Recoverable
Magnesium	240000		200		ug/L	1		6010B	Total Recoverable
Potassium	33000		3000		ug/L	1		6010B	Total Recoverable
Sodium	1300000		1000		ug/L	1		6010B	Total Recoverable
Chloride	2100		60		mg/L	20		300.0	Total/NA
Sulfate	900		100		mg/L	20		300.0	Total/NA
Total Alkalinity	470		5.0		mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	470		5.0		mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	5100	H	40		mg/L	1		SM 2540C	Total/NA
TOC Result 1	1.1		1.0		mg/L	1		SM 5310B	Total/NA
TOC Result 2	1.1		1.0		mg/L	1		SM 5310B	Total/NA

Client Sample ID: MW-07D — Lab Sample ID: 280-108811-2

Analyte	Result	Qualifier	NONE	NONE	Unit	Dil Fac	D	Method	Prep Type
Well Elevation	4646.86				ft/msl	1		Field Sampling	Total/NA
Depth to water	81.93				ft	1		Field Sampling	Total/NA
Groundwater Elevation	4564.93				ft/msl	1		Field Sampling	Total/NA
Field pH	7.41				SU	1		Field Sampling	Total/NA
Field Conductivity	5590				umhos/cm	1		Field Sampling	Total/NA
Field Temperature	13.9				Degrees C	1		Field Sampling	Total/NA
Field Turbidity	2.76				NTU	1		Field Sampling	Total/NA

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	47		10		ug/L	1		6010B	Total Recoverable
Calcium	220000		200		ug/L	1		6010B	Total Recoverable
Magnesium	240000		200		ug/L	1		6010B	Total Recoverable
Potassium	39000		3000		ug/L	1		6010B	Total Recoverable
Sodium	920000		1000		ug/L	1		6010B	Total Recoverable
Chloride	2100		60		mg/L	20		300.0	Total/NA
Sulfate	470		100		mg/L	20		300.0	Total/NA
Total Alkalinity	170		5.0		mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	170		5.0		mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	3800		40		mg/L	1		SM 2540C	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: Waste Management
Project/Site: 2769|Tekoi Balefill - 7314

TestAmerica Job ID: 280-108811-1

Client Sample ID: DUP — Lab Sample ID: 280-108811-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	25		10		ug/L	1		6010B	Total Recoverable
Calcium	210000		200		ug/L	1		6010B	Total Recoverable
Magnesium	240000		200		ug/L	1		6010B	Total Recoverable
Potassium	34000		3000		ug/L	1		6010B	Total Recoverable
Sodium	1300000		1000		ug/L	1		6010B	Total Recoverable
Chloride	2200		60		mg/L	20		300.0	Total/NA
Sulfate	890		50		mg/L	10		300.0	Total/NA
Total Alkalinity	470		5.0		mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	470		5.0		mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	4800		40		mg/L	1		SM 2540C	Total/NA
TOC Result 1	1.1		1.0		mg/L	1		SM 5310B	Total/NA
TOC Result 2	1.0		1.0		mg/L	1		SM 5310B	Total/NA

Client Sample ID: TRIP BLANK — Lab Sample ID: 280-108811-4

No Detections.

This Detection Summary does not include radiochemical test results.

Method Summary

Client: Waste Management
Project/Site: 2769|Tekoi Balefill - 7314

TestAmerica Job ID: 280-108811-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL DEN
6010B	Metals (ICP)	SW846	TAL DEN
7470A	Mercury (CVAA)	SW846	TAL DEN
300.0	Anions, Ion Chromatography	MCAWW	TAL DEN
350.1	Nitrogen, Ammonia	MCAWW	TAL DEN
351.2	Nitrogen, Total Kjeldahl	MCAWW	TAL DEN
410.4	COD	MCAWW	TAL DEN
SM 2320B	Alkalinity	SM	TAL DEN
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL DEN
SM 5310B	Organic Carbon, Total (TOC)	SM	TAL DEN
Field Sampling	Field Sampling	EPA	TAL DEN
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	TAL DEN
351.2	Nitrogen, Total Kjeldahl	MCAWW	TAL DEN
5030B	Purge and Trap	SW846	TAL DEN
7470A	Preparation, Mercury	SW846	TAL DEN

Protocol References:

EPA = US Environmental Protection Agency
MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.
SM = "Standard Methods For The Examination Of Water And Wastewater"
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

Sample Summary

Client: Waste Management
Project/Site: 2769|Tekoi Balefill - 7314

TestAmerica Job ID: 280-108811-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
280-108811-1	MW-05D	Water	04/19/18 11:05	04/20/18 09:00
280-108811-2	MW-07D	Water	04/19/18 13:20	04/20/18 09:00
280-108811-3	DUP	Water	04/19/18 11:35	04/20/18 09:00
280-108811-4	TRIP BLANK	Water	04/19/18 00:00	04/20/18 09:00

Client Sample Results

Client: Waste Management
Project/Site: 2769|Tekoi Balefill - 7314

TestAmerica Job ID: 280-108811-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Client Sample ID: MW-05D
Date Collected: 04/19/18 11:05
Date Received: 04/20/18 09:00

Lab Sample ID: 280-108811-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		1.0		ug/L			05/02/18 12:49	1
1,1,1-Trichloroethane	ND		1.0		ug/L			05/02/18 12:49	1
1,1,2,2-Tetrachloroethane	ND		1.0		ug/L			05/02/18 12:49	1
1,1,2-Trichloroethane	ND		1.0		ug/L			05/02/18 12:49	1
1,1-Dichloroethane	ND		1.0		ug/L			05/02/18 12:49	1
1,1-Dichloroethene	ND		1.0		ug/L			05/02/18 12:49	1
1,2,3-Trichloropropane	ND		2.5		ug/L			05/02/18 12:49	1
1,2-Dibromo-3-Chloropropane	ND		5.0		ug/L			05/02/18 12:49	1
1,2-Dibromoethane	ND		1.0		ug/L			05/02/18 12:49	1
1,2-Dichlorobenzene	ND		1.0		ug/L			05/02/18 12:49	1
1,2-Dichloroethane	ND		1.0		ug/L			05/02/18 12:49	1
1,2-Dichloropropane	ND		1.0		ug/L			05/02/18 12:49	1
1,4-Dichlorobenzene	ND		1.0		ug/L			05/02/18 12:49	1
2-Butanone (MEK)	ND		6.0		ug/L			05/02/18 12:49	1
2-Hexanone	ND		5.0		ug/L			05/02/18 12:49	1
4-Methyl-2-pentanone (MIBK)	ND		5.0		ug/L			05/02/18 12:49	1
Acetone	ND		10		ug/L			05/02/18 12:49	1
Acrolein	ND		20		ug/L			05/02/18 12:49	1
Acrylonitrile	ND		20		ug/L			05/02/18 12:49	1
Benzene	ND		1.0		ug/L			05/02/18 12:49	1
Bromodichloromethane	ND		1.0		ug/L			05/02/18 12:49	1
Bromoform	ND		1.0		ug/L			05/02/18 12:49	1
Bromomethane	ND		2.0		ug/L			05/02/18 12:49	1
Carbon disulfide	ND		2.0		ug/L			05/02/18 12:49	1
Carbon tetrachloride	ND		1.0		ug/L			05/02/18 12:49	1
Chlorobenzene	ND		1.0		ug/L			05/02/18 12:49	1
Chlorobromomethane	ND		1.0		ug/L			05/02/18 12:49	1
Chlorodibromomethane	ND		1.0		ug/L			05/02/18 12:49	1
Chloroethane	ND		2.0		ug/L			05/02/18 12:49	1
Chloroform	ND		1.0		ug/L			05/02/18 12:49	1
Chloromethane	ND		2.0		ug/L			05/02/18 12:49	1
cis-1,2-Dichloroethene	ND		1.0		ug/L			05/02/18 12:49	1
cis-1,3-Dichloropropene	ND		1.0		ug/L			05/02/18 12:49	1
Dibromomethane	ND		1.0		ug/L			05/02/18 12:49	1
Ethylbenzene	ND		1.0		ug/L			05/02/18 12:49	1
Iodomethane	ND		1.0		ug/L			05/02/18 12:49	1
Methylene Chloride	ND		2.0		ug/L			05/02/18 12:49	1
Styrene	ND	F1	1.0		ug/L			05/02/18 12:49	1
Tetrachloroethene	ND		1.0		ug/L			05/02/18 12:49	1
Toluene	ND		1.0		ug/L			05/02/18 12:49	1
trans-1,2-Dichloroethene	ND		1.0		ug/L			05/02/18 12:49	1
trans-1,3-Dichloropropene	ND		3.0		ug/L			05/02/18 12:49	1
trans-1,4-Dichloro-2-butene	ND		3.0		ug/L			05/02/18 12:49	1
Trichloroethene	ND		1.0		ug/L			05/02/18 12:49	1
Trichlorofluoromethane	ND		2.0		ug/L			05/02/18 12:49	1
Vinyl acetate	ND		3.0		ug/L			05/02/18 12:49	1
Vinyl chloride	ND		1.0		ug/L			05/02/18 12:49	1
Xylenes, Total	ND		2.0		ug/L			05/02/18 12:49	1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	99		70 - 127		05/02/18 12:49	1
4-Bromofluorobenzene (Surr)	95		78 - 120		05/02/18 12:49	1
Dibromofluoromethane (Surr)	98		77 - 120		05/02/18 12:49	1
Toluene-d8 (Surr)	99		80 - 125		05/02/18 12:49	1

Client Sample ID: MW-07D
Date Collected: 04/19/18 13:20
Date Received: 04/20/18 09:00

Lab Sample ID: 280-108811-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		1.0		ug/L			05/02/18 13:52	1
1,1,1-Trichloroethane	ND		1.0		ug/L			05/02/18 13:52	1
1,1,2,2-Tetrachloroethane	ND		1.0		ug/L			05/02/18 13:52	1
1,1,2-Trichloroethane	ND		1.0		ug/L			05/02/18 13:52	1
1,1-Dichloroethane	ND		1.0		ug/L			05/02/18 13:52	1
1,1-Dichloroethene	ND		1.0		ug/L			05/02/18 13:52	1
1,2,3-Trichloropropane	ND		2.5		ug/L			05/02/18 13:52	1
1,2-Dibromo-3-Chloropropane	ND		5.0		ug/L			05/02/18 13:52	1
1,2-Dibromoethane	ND		1.0		ug/L			05/02/18 13:52	1
1,2-Dichlorobenzene	ND		1.0		ug/L			05/02/18 13:52	1
1,2-Dichloroethane	ND		1.0		ug/L			05/02/18 13:52	1
1,2-Dichloropropane	ND		1.0		ug/L			05/02/18 13:52	1
1,4-Dichlorobenzene	ND		1.0		ug/L			05/02/18 13:52	1
2-Butanone (MEK)	ND		6.0		ug/L			05/02/18 13:52	1
2-Hexanone	ND		5.0		ug/L			05/02/18 13:52	1
4-Methyl-2-pentanone (MIBK)	ND		5.0		ug/L			05/02/18 13:52	1
Acetone	ND		10		ug/L			05/02/18 13:52	1
Acrolein	ND		20		ug/L			05/02/18 13:52	1
Acrylonitrile	ND		20		ug/L			05/02/18 13:52	1
Benzene	ND		1.0		ug/L			05/02/18 13:52	1
Bromodichloromethane	ND		1.0		ug/L			05/02/18 13:52	1
Bromoform	ND		1.0		ug/L			05/02/18 13:52	1
Bromomethane	ND		2.0		ug/L			05/02/18 13:52	1
Carbon disulfide	ND		2.0		ug/L			05/02/18 13:52	1
Carbon tetrachloride	ND		1.0		ug/L			05/02/18 13:52	1
Chlorobenzene	ND		1.0		ug/L			05/02/18 13:52	1
Chlorobromomethane	ND		1.0		ug/L			05/02/18 13:52	1
Chlorodibromomethane	ND		1.0		ug/L			05/02/18 13:52	1
Chloroethane	ND		2.0		ug/L			05/02/18 13:52	1
Chloroform	ND		1.0		ug/L			05/02/18 13:52	1
Chloromethane	ND		2.0		ug/L			05/02/18 13:52	1
cis-1,2-Dichloroethene	ND		1.0		ug/L			05/02/18 13:52	1
cis-1,3-Dichloropropene	ND		1.0		ug/L			05/02/18 13:52	1
Dibromomethane	ND		1.0		ug/L			05/02/18 13:52	1
Ethylbenzene	ND		1.0		ug/L			05/02/18 13:52	1
Iodomethane	ND		1.0		ug/L			05/02/18 13:52	1
Methylene Chloride	ND		2.0		ug/L			05/02/18 13:52	1
Styrene	ND		1.0		ug/L			05/02/18 13:52	1
Tetrachloroethene	ND		1.0		ug/L			05/02/18 13:52	1
Toluene	ND		1.0		ug/L			05/02/18 13:52	1
trans-1,2-Dichloroethene	ND		1.0		ug/L			05/02/18 13:52	1
trans-1,3-Dichloropropene	ND		3.0		ug/L			05/02/18 13:52	1
trans-1,4-Dichloro-2-butene	ND		3.0		ug/L			05/02/18 13:52	1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Client Sample ID: MW-07D
Date Collected: 04/19/18 13:20
Date Received: 04/20/18 09:00

Lab Sample ID: 280-108811-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	ND		1.0		ug/L			05/02/18 13:52	1
Trichlorofluoromethane	ND		2.0		ug/L			05/02/18 13:52	1
Vinyl acetate	ND		3.0		ug/L			05/02/18 13:52	1
Vinyl chloride	ND		1.0		ug/L			05/02/18 13:52	1
Xylenes, Total	ND		2.0		ug/L			05/02/18 13:52	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*101*		*70 - 127*		*05/02/18 13:52*	*1*
4-Bromofluorobenzene (Surr)	*97*		*78 - 120*		*05/02/18 13:52*	*1*
Dibromofluoromethane (Surr)	*98*		*77 - 120*		*05/02/18 13:52*	*1*
Toluene-d8 (Surr)	*97*		*80 - 125*		*05/02/18 13:52*	*1*

Client Sample ID: DUP
Date Collected: 04/19/18 11:35
Date Received: 04/20/18 09:00

Lab Sample ID: 280-108811-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		1.0		ug/L			05/02/18 14:12	1
1,1,1-Trichloroethane	ND		1.0		ug/L			05/02/18 14:12	1
1,1,2,2-Tetrachloroethane	ND		1.0		ug/L			05/02/18 14:12	1
1,1,2-Trichloroethane	ND		1.0		ug/L			05/02/18 14:12	1
1,1-Dichloroethane	ND		1.0		ug/L			05/02/18 14:12	1
1,1-Dichloroethene	ND		1.0		ug/L			05/02/18 14:12	1
1,2,3-Trichloropropane	ND		2.5		ug/L			05/02/18 14:12	1
1,2-Dibromo-3-Chloropropane	ND		5.0		ug/L			05/02/18 14:12	1
1,2-Dibromoethane	ND		1.0		ug/L			05/02/18 14:12	1
1,2-Dichlorobenzene	ND		1.0		ug/L			05/02/18 14:12	1
1,2-Dichloroethane	ND		1.0		ug/L			05/02/18 14:12	1
1,2-Dichloropropane	ND		1.0		ug/L			05/02/18 14:12	1
1,4-Dichlorobenzene	ND		1.0		ug/L			05/02/18 14:12	1
2-Butanone (MEK)	ND		6.0		ug/L			05/02/18 14:12	1
2-Hexanone	ND		5.0		ug/L			05/02/18 14:12	1
4-Methyl-2-pentanone (MIBK)	ND		5.0		ug/L			05/02/18 14:12	1
Acetone	ND		10		ug/L			05/02/18 14:12	1
Acrolein	ND		20		ug/L			05/02/18 14:12	1
Acrylonitrile	ND		20		ug/L			05/02/18 14:12	1
Benzene	ND		1.0		ug/L			05/02/18 14:12	1
Bromodichloromethane	ND		1.0		ug/L			05/02/18 14:12	1
Bromoform	ND		1.0		ug/L			05/02/18 14:12	1
Bromomethane	ND		2.0		ug/L			05/02/18 14:12	1
Carbon disulfide	ND		2.0		ug/L			05/02/18 14:12	1
Carbon tetrachloride	ND		1.0		ug/L			05/02/18 14:12	1
Chlorobenzene	ND		1.0		ug/L			05/02/18 14:12	1
Chlorobromomethane	ND		1.0		ug/L			05/02/18 14:12	1
Chlorodibromomethane	ND		1.0		ug/L			05/02/18 14:12	1
Chloroethane	ND		2.0		ug/L			05/02/18 14:12	1
Chloroform	ND		1.0		ug/L			05/02/18 14:12	1
Chloromethane	ND		2.0		ug/L			05/02/18 14:12	1
cis-1,2-Dichloroethene	ND		1.0		ug/L			05/02/18 14:12	1
cis-1,3-Dichloropropene	ND		1.0		ug/L			05/02/18 14:12	1
Dibromomethane	ND		1.0		ug/L			05/02/18 14:12	1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Client Sample ID: DUP
Date Collected: 04/19/18 11:35
Date Received: 04/20/18 09:00

Lab Sample ID: 280-108811-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND		1.0		ug/L			05/02/18 14:12	1
Iodomethane	ND		1.0		ug/L			05/02/18 14:12	1
Methylene Chloride	ND		2.0		ug/L			05/02/18 14:12	1
Styrene	ND		1.0		ug/L			05/02/18 14:12	1
Tetrachloroethene	ND		1.0		ug/L			05/02/18 14:12	1
Toluene	ND		1.0		ug/L			05/02/18 14:12	1
trans-1,2-Dichloroethene	ND		1.0		ug/L			05/02/18 14:12	1
trans-1,3-Dichloropropene	ND		3.0		ug/L			05/02/18 14:12	1
trans-1,4-Dichloro-2-butene	ND		3.0		ug/L			05/02/18 14:12	1
Trichloroethene	ND		1.0		ug/L			05/02/18 14:12	1
Trichlorofluoromethane	ND		2.0		ug/L			05/02/18 14:12	1
Vinyl acetate	ND		3.0		ug/L			05/02/18 14:12	1
Vinyl chloride	ND		1.0		ug/L			05/02/18 14:12	1
Xylenes, Total	ND		2.0		ug/L			05/02/18 14:12	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*108*		*70 - 127*		*05/02/18 14:12*	*1*
4-Bromofluorobenzene (Surr)	*99*		*78 - 120*		*05/02/18 14:12*	*1*
Dibromofluoromethane (Surr)	*101*		*77 - 120*		*05/02/18 14:12*	*1*
Toluene-d8 (Surr)	*98*		*80 - 125*		*05/02/18 14:12*	*1*

Client Sample ID: TRIP BLANK
Date Collected: 04/19/18 00:00
Date Received: 04/20/18 09:00

Lab Sample ID: 280-108811-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		1.0		ug/L			05/02/18 09:31	1
1,1,1-Trichloroethane	ND		1.0		ug/L			05/02/18 09:31	1
1,1,2,2-Tetrachloroethane	ND		1.0		ug/L			05/02/18 09:31	1
1,1,2-Trichloroethane	ND		1.0		ug/L			05/02/18 09:31	1
1,1-Dichloroethane	ND		1.0		ug/L			05/02/18 09:31	1
1,1-Dichloroethene	ND		1.0		ug/L			05/02/18 09:31	1
1,2,3-Trichloropropane	ND		2.5		ug/L			05/02/18 09:31	1
1,2-Dibromo-3-Chloropropane	ND		5.0		ug/L			05/02/18 09:31	1
1,2-Dibromoethane	ND		1.0		ug/L			05/02/18 09:31	1
1,2-Dichlorobenzene	ND		1.0		ug/L			05/02/18 09:31	1
1,2-Dichloroethane	ND		1.0		ug/L			05/02/18 09:31	1
1,2-Dichloropropane	ND		1.0		ug/L			05/02/18 09:31	1
1,4-Dichlorobenzene	ND		1.0		ug/L			05/02/18 09:31	1
2-Butanone (MEK)	ND		6.0		ug/L			05/02/18 09:31	1
2-Hexanone	ND		5.0		ug/L			05/02/18 09:31	1
4-Methyl-2-pentanone (MIBK)	ND		5.0		ug/L			05/02/18 09:31	1
Acetone	ND		10		ug/L			05/02/18 09:31	1
Acrolein	ND		20		ug/L			05/02/18 09:31	1
Acrylonitrile	ND		20		ug/L			05/02/18 09:31	1
Benzene	ND		1.0		ug/L			05/02/18 09:31	1
Bromodichloromethane	ND		1.0		ug/L			05/02/18 09:31	1
Bromoform	ND		1.0		ug/L			05/02/18 09:31	1
Bromomethane	ND		2.0		ug/L			05/02/18 09:31	1
Carbon disulfide	ND		2.0		ug/L			05/02/18 09:31	1
Carbon tetrachloride	ND		1.0		ug/L			05/02/18 09:31	1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Client Sample ID: TRIP BLANK
Date Collected: 04/19/18 00:00
Date Received: 04/20/18 09:00

Lab Sample ID: 280-108811-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorobenzene	ND		1.0		ug/L			05/02/18 09:31	1
Chlorobromomethane	ND		1.0		ug/L			05/02/18 09:31	1
Chlorodibromomethane	ND		1.0		ug/L			05/02/18 09:31	1
Chloroethane	ND		2.0		ug/L			05/02/18 09:31	1
Chloroform	ND		1.0		ug/L			05/02/18 09:31	1
Chloromethane	ND		2.0		ug/L			05/02/18 09:31	1
cis-1,2-Dichloroethene	ND		1.0		ug/L			05/02/18 09:31	1
cis-1,3-Dichloropropene	ND		1.0		ug/L			05/02/18 09:31	1
Dibromomethane	ND		1.0		ug/L			05/02/18 09:31	1
Ethylbenzene	ND		1.0		ug/L			05/02/18 09:31	1
Iodomethane	ND		1.0		ug/L			05/02/18 09:31	1
Methylene Chloride	ND		2.0		ug/L			05/02/18 09:31	1
Styrene	ND		1.0		ug/L			05/02/18 09:31	1
Tetrachloroethene	ND		1.0		ug/L			05/02/18 09:31	1
Toluene	ND		1.0		ug/L			05/02/18 09:31	1
trans-1,2-Dichloroethene	ND		1.0		ug/L			05/02/18 09:31	1
trans-1,3-Dichloropropene	ND		3.0		ug/L			05/02/18 09:31	1
trans-1,4-Dichloro-2-butene	ND		3.0		ug/L			05/02/18 09:31	1
Trichloroethene	ND		1.0		ug/L			05/02/18 09:31	1
Trichlorofluoromethane	ND		2.0		ug/L			05/02/18 09:31	1
Vinyl acetate	ND		3.0		ug/L			05/02/18 09:31	1
Vinyl chloride	ND		1.0		ug/L			05/02/18 09:31	1
Xylenes, Total	ND		2.0		ug/L			05/02/18 09:31	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*87*		*70 - 127*		*05/02/18 09:31*	*1*
4-Bromofluorobenzene (Surr)	*101*		*78 - 120*		*05/02/18 09:31*	*1*
Dibromofluoromethane (Surr)	*92*		*77 - 120*		*05/02/18 09:31*	*1*
Toluene-d8 (Surr)	*103*		*80 - 125*		*05/02/18 09:31*	*1*

Method: 6010B - Metals (ICP) - Total Recoverable

Client Sample ID: MW-05D
Date Collected: 04/19/18 11:05
Date Received: 04/20/18 09:00

Lab Sample ID: 280-108811-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		15		ug/L		04/30/18 17:00	05/01/18 21:09	1
Barium	**25**		10		ug/L		04/30/18 17:00	05/01/18 21:09	1
Beryllium	ND		1.0		ug/L		04/30/18 17:00	05/01/18 21:09	1
Cadmium	ND		5.0		ug/L		04/30/18 17:00	05/01/18 21:09	1
Cobalt	ND		10		ug/L		04/30/18 17:00	05/01/18 21:09	1
Chromium	ND		10		ug/L		04/30/18 17:00	05/01/18 21:09	1
Copper	ND		15		ug/L		04/30/18 17:00	05/01/18 21:09	1
Calcium	**200000**		200		ug/L		04/30/18 17:00	05/01/18 21:09	1
Nickel	ND		40		ug/L		04/30/18 17:00	05/01/18 21:09	1
Lead	ND		9.0		ug/L		04/30/18 17:00	05/01/18 21:09	1
Antimony	ND		10		ug/L		04/30/18 17:00	05/01/18 21:09	1
Selenium	ND		15		ug/L		04/30/18 17:00	05/01/18 21:09	1
Iron	ND		100		ug/L		04/30/18 17:00	05/01/18 21:09	1
Thallium	ND		15		ug/L		04/30/18 17:00	05/01/18 21:09	1

Method: 6010B - Metals (ICP) - Total Recoverable (Continued)

Client Sample ID: MW-05D
Date Collected: 04/19/18 11:05
Date Received: 04/20/18 09:00

Lab Sample ID: 280-108811-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Vanadium	ND		10		ug/L		04/30/18 17:00	05/01/18 21:09	1
Zinc	ND		20		ug/L		04/30/18 17:00	05/01/18 21:09	1
Magnesium	**240000**		200		ug/L		04/30/18 17:00	05/01/18 21:09	1
Silver	ND		10		ug/L		04/30/18 17:00	05/01/18 21:09	1
Manganese	ND		10		ug/L		04/30/18 17:00	05/01/18 21:09	1
Potassium	**33000**		3000		ug/L		04/30/18 17:00	05/01/18 21:09	1
Sodium	**1300000**		1000		ug/L		04/30/18 17:00	05/01/18 21:09	1

Client Sample ID: MW-07D
Date Collected: 04/19/18 13:20
Date Received: 04/20/18 09:00

Lab Sample ID: 280-108811-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		15		ug/L		04/30/18 17:00	05/01/18 21:22	1
Barium	**47**		10		ug/L		04/30/18 17:00	05/01/18 21:22	1
Beryllium	ND		1.0		ug/L		04/30/18 17:00	05/01/18 21:22	1
Cadmium	ND		5.0		ug/L		04/30/18 17:00	05/01/18 21:22	1
Cobalt	ND		10		ug/L		04/30/18 17:00	05/01/18 21:22	1
Chromium	ND		10		ug/L		04/30/18 17:00	05/01/18 21:22	1
Copper	ND		15		ug/L		04/30/18 17:00	05/01/18 21:22	1
Calcium	**220000**		200		ug/L		04/30/18 17:00	05/01/18 21:22	1
Nickel	ND		40		ug/L		04/30/18 17:00	05/01/18 21:22	1
Lead	ND		9.0		ug/L		04/30/18 17:00	05/01/18 21:22	1
Antimony	ND		10		ug/L		04/30/18 17:00	05/01/18 21:22	1
Selenium	ND		15		ug/L		04/30/18 17:00	05/01/18 21:22	1
Iron	ND		100		ug/L		04/30/18 17:00	05/01/18 21:22	1
Thallium	ND		15		ug/L		04/30/18 17:00	05/01/18 21:22	1
Vanadium	ND		10		ug/L		04/30/18 17:00	05/01/18 21:22	1
Zinc	ND		20		ug/L		04/30/18 17:00	05/01/18 21:22	1
Magnesium	**240000**		200		ug/L		04/30/18 17:00	05/01/18 21:22	1
Silver	ND		10		ug/L		04/30/18 17:00	05/01/18 21:22	1
Manganese	ND		10		ug/L		04/30/18 17:00	05/01/18 21:22	1
Potassium	**39000**		3000		ug/L		04/30/18 17:00	05/01/18 21:22	1
Sodium	**920000**		1000		ug/L		04/30/18 17:00	05/01/18 21:22	1

Client Sample ID: DUP
Date Collected: 04/19/18 11:35
Date Received: 04/20/18 09:00

Lab Sample ID: 280-108811-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		15		ug/L		04/30/18 17:00	05/01/18 21:26	1
Barium	**25**		10		ug/L		04/30/18 17:00	05/01/18 21:26	1
Beryllium	ND		1.0		ug/L		04/30/18 17:00	05/01/18 21:26	1
Cadmium	ND		5.0		ug/L		04/30/18 17:00	05/01/18 21:26	1
Cobalt	ND		10		ug/L		04/30/18 17:00	05/01/18 21:26	1
Chromium	ND		10		ug/L		04/30/18 17:00	05/01/18 21:26	1
Copper	ND		15		ug/L		04/30/18 17:00	05/01/18 21:26	1
Calcium	**210000**		200		ug/L		04/30/18 17:00	05/01/18 21:26	1
Nickel	ND		40		ug/L		04/30/18 17:00	05/01/18 21:26	1
Lead	ND		9.0		ug/L		04/30/18 17:00	05/01/18 21:26	1
Antimony	ND		10		ug/L		04/30/18 17:00	05/01/18 21:26	1
Selenium	ND		15		ug/L		04/30/18 17:00	05/01/18 21:26	1

Method: 6010B - Metals (ICP) - Total Recoverable (Continued)

Client Sample ID: DUP
Date Collected: 04/19/18 11:35
Date Received: 04/20/18 09:00

Lab Sample ID: 280-108811-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	ND		100		ug/L		04/30/18 17:00	05/01/18 21:26	1
Thallium	ND		15		ug/L		04/30/18 17:00	05/01/18 21:26	1
Vanadium	ND		10		ug/L		04/30/18 17:00	05/01/18 21:26	1
Zinc	ND		20		ug/L		04/30/18 17:00	05/01/18 21:26	1
Magnesium	**240000**		200		ug/L		04/30/18 17:00	05/01/18 21:26	1
Silver	ND		10		ug/L		04/30/18 17:00	05/01/18 21:26	1
Manganese	ND		10		ug/L		04/30/18 17:00	05/01/18 21:26	1
Potassium	**34000**		3000		ug/L		04/30/18 17:00	05/01/18 21:26	1
Sodium	**1300000**		1000		ug/L		04/30/18 17:00	05/01/18 21:26	1

Method: 7470A - Mercury (CVAA)

Client Sample ID: MW-05D
Date Collected: 04/19/18 11:05
Date Received: 04/20/18 09:00

Lab Sample ID: 280-108811-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		05/02/18 12:21	05/02/18 19:02	1

Client Sample ID: MW-07D
Date Collected: 04/19/18 13:20
Date Received: 04/20/18 09:00

Lab Sample ID: 280-108811-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		05/02/18 12:21	05/02/18 19:04	1

Client Sample ID: DUP
Date Collected: 04/19/18 11:35
Date Received: 04/20/18 09:00

Lab Sample ID: 280-108811-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		05/02/18 12:21	05/02/18 19:07	1

General Chemistry

Client Sample ID: MW-05D
Date Collected: 04/19/18 11:05
Date Received: 04/20/18 09:00

Lab Sample ID: 280-108811-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**2100**		60		mg/L			05/06/18 18:30	20
Sulfate	**900**		100		mg/L			05/06/18 18:30	20
Ammonia as N	ND		0.20		mg/L			05/16/18 14:36	1
Total Kjeldahl Nitrogen	ND		0.50		mg/L		05/01/18 18:28	05/03/18 19:50	1
Chemical Oxygen Demand	ND		100		mg/L			05/16/18 09:28	5
Total Alkalinity	**470**		5.0		mg/L			05/02/18 10:57	1
Bicarbonate Alkalinity as CaCO3	**470**		5.0		mg/L			05/02/18 10:57	1
Carbonate Alkalinity as CaCO3	ND		5.0		mg/L			05/02/18 10:57	1
Total Dissolved Solids	**5100**	**H**	40		mg/L			05/17/18 14:22	1
TOC Result 1	**1.1**		1.0		mg/L			05/12/18 04:48	1
TOC Result 2	**1.1**		1.0		mg/L			05/12/18 04:48	1

General Chemistry

Client Sample ID: MW-07D
Date Collected: 04/19/18 13:20
Date Received: 04/20/18 09:00

Lab Sample ID: 280-108811-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**2100**		60		mg/L			05/06/18 18:48	20
Sulfate	**470**		100		mg/L			05/06/18 18:48	20
Ammonia as N	ND		0.20		mg/L			05/16/18 14:38	1
Total Kjeldahl Nitrogen	ND		0.50		mg/L		05/01/18 18:28	05/03/18 19:52	1
Chemical Oxygen Demand	ND		100		mg/L			05/16/18 09:28	5
Total Alkalinity	**170**		5.0		mg/L			05/02/18 11:04	1
Bicarbonate Alkalinity as CaCO3	**170**		5.0		mg/L			05/02/18 11:04	1
Carbonate Alkalinity as CaCO3	ND		5.0		mg/L			05/02/18 11:04	1
Total Dissolved Solids	**3800**		40		mg/L			04/26/18 14:33	1
TOC Result 1	ND		1.0		mg/L			05/12/18 04:26	1
TOC Result 2	ND		1.0		mg/L			05/12/18 04:26	1

Client Sample ID: DUP
Date Collected: 04/19/18 11:35
Date Received: 04/20/18 09:00

Lab Sample ID: 280-108811-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**2200**		60		mg/L			05/07/18 22:34	20
Sulfate	**890**		50		mg/L			05/06/18 19:06	10
Ammonia as N	ND		0.20		mg/L			05/16/18 14:40	1
Total Kjeldahl Nitrogen	ND		0.50		mg/L		05/01/18 18:28	05/03/18 19:53	1
Chemical Oxygen Demand	ND		40		mg/L			05/16/18 09:28	2
Total Alkalinity	**470**		5.0		mg/L			05/02/18 11:14	1
Bicarbonate Alkalinity as CaCO3	**470**		5.0		mg/L			05/02/18 11:14	1
Carbonate Alkalinity as CaCO3	ND		5.0		mg/L			05/02/18 11:14	1
Total Dissolved Solids	**4800**		40		mg/L			04/26/18 14:33	1
TOC Result 1	**1.1**		1.0		mg/L			05/12/18 04:04	1
TOC Result 2	**1.0**		1.0		mg/L			05/12/18 04:04	1

Method: Field Sampling - Field Sampling

Client Sample ID: MW-05D
Date Collected: 04/19/18 11:05
Date Received: 04/20/18 09:00

Lab Sample ID: 280-108811-1
Matrix: Water

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Well Elevation	**4641.78**				ft/msl			04/19/18 11:05	1
Depth to water	**75.18**				ft			04/19/18 11:05	1
Groundwater Elevation	**4566.6**				ft/msl			04/19/18 11:05	1
Field pH	**7.12**				SU			04/19/18 11:05	1
Field Conductivity	**6300**				umhos/cm			04/19/18 11:05	1
Field Temperature	**13.5**				Degrees C			04/19/18 11:05	1
Field Turbidity	**3.41**				NTU			04/19/18 11:05	1

Client Sample ID: MW-07D
Date Collected: 04/19/18 13:20
Date Received: 04/20/18 09:00

Lab Sample ID: 280-108811-2
Matrix: Water

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Well Elevation	**4646.86**				ft/msl			04/19/18 13:20	1
Depth to water	**81.93**				ft			04/19/18 13:20	1
Groundwater Elevation	**4564.93**				ft/msl			04/19/18 13:20	1
Field pH	**7.41**				SU			04/19/18 13:20	1

Client Sample Results

Client: Waste Management
Project/Site: 2769|Tekoi Balefill - 7314

TestAmerica Job ID: 280-108811-1

Method: Field Sampling - Field Sampling (Continued)

Client Sample ID: MW-07D
Date Collected: 04/19/18 13:20
Date Received: 04/20/18 09:00

Lab Sample ID: 280-108811-2
Matrix: Water

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Field Conductivity	5590				umhos/cm			04/19/18 13:20	1
Field Temperature	13.9				Degrees C			04/19/18 13:20	1
Field Turbidity	2.76				NTU			04/19/18 13:20	1

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Surrogate Summary

Client: Waste Management
Project/Site: 2769|Tekoi Balefill - 7314

TestAmerica Job ID: 280-108811-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)			
Lab Sample ID	Client Sample ID	DCA (70-127)	BFB (78-120)	DBFM (77-120)	TOL (80-125)
280-108811-1	MW-05D	99	95	98	99
280-108811-1 MS	MW-05D	99	91	94	98
280-108811-1 MSD	MW-05D	99	93	95	98
280-108811-2	MW-07D	101	97	98	97
280-108811-3	DUP	108	99	101	98
280-108811-4	TRIP BLANK	87	101	92	103
LCS 280-413436/4	Lab Control Sample	100	93	97	100
MB 280-413436/6	Method Blank	98	94	97	95

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

QC Sample Results

Client: Waste Management
Project/Site: 2769|Tekoi Balefill - 7314

TestAmerica Job ID: 280-108811-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 280-413436/6
Matrix: Water
Analysis Batch: 413436

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		1.0		ug/L			05/02/18 09:00	1
1,1,1-Trichloroethane	ND		1.0		ug/L			05/02/18 09:00	1
1,1,2,2-Tetrachloroethane	ND		1.0		ug/L			05/02/18 09:00	1
1,1,2-Trichloroethane	ND		1.0		ug/L			05/02/18 09:00	1
1,1-Dichloroethane	ND		1.0		ug/L			05/02/18 09:00	1
1,1-Dichloroethene	ND		1.0		ug/L			05/02/18 09:00	1
1,2,3-Trichloropropane	ND		2.5		ug/L			05/02/18 09:00	1
1,2-Dibromo-3-Chloropropane	ND		5.0		ug/L			05/02/18 09:00	1
1,2-Dibromoethane	ND		1.0		ug/L			05/02/18 09:00	1
1,2-Dichlorobenzene	ND		1.0		ug/L			05/02/18 09:00	1
1,2-Dichloroethane	ND		1.0		ug/L			05/02/18 09:00	1
1,2-Dichloropropane	ND		1.0		ug/L			05/02/18 09:00	1
1,4-Dichlorobenzene	ND		1.0		ug/L			05/02/18 09:00	1
2-Butanone (MEK)	ND		6.0		ug/L			05/02/18 09:00	1
2-Hexanone	ND		5.0		ug/L			05/02/18 09:00	1
4-Methyl-2-pentanone (MIBK)	ND		5.0		ug/L			05/02/18 09:00	1
Acetone	ND		10		ug/L			05/02/18 09:00	1
Acrolein	ND		20		ug/L			05/02/18 09:00	1
Acrylonitrile	ND		20		ug/L			05/02/18 09:00	1
Benzene	ND		1.0		ug/L			05/02/18 09:00	1
Bromodichloromethane	ND		1.0		ug/L			05/02/18 09:00	1
Bromoform	ND		1.0		ug/L			05/02/18 09:00	1
Bromomethane	ND		2.0		ug/L			05/02/18 09:00	1
Carbon disulfide	ND		2.0		ug/L			05/02/18 09:00	1
Carbon tetrachloride	ND		1.0		ug/L			05/02/18 09:00	1
Chlorobenzene	ND		1.0		ug/L			05/02/18 09:00	1
Chlorobromomethane	ND		1.0		ug/L			05/02/18 09:00	1
Chlorodibromomethane	ND		1.0		ug/L			05/02/18 09:00	1
Chloroethane	ND		2.0		ug/L			05/02/18 09:00	1
Chloroform	ND		1.0		ug/L			05/02/18 09:00	1
Chloromethane	ND		2.0		ug/L			05/02/18 09:00	1
cis-1,2-Dichloroethene	ND		1.0		ug/L			05/02/18 09:00	1
cis-1,3-Dichloropropene	ND		1.0		ug/L			05/02/18 09:00	1
Dibromomethane	ND		1.0		ug/L			05/02/18 09:00	1
Ethylbenzene	ND		1.0		ug/L			05/02/18 09:00	1
Iodomethane	ND		1.0		ug/L			05/02/18 09:00	1
Methylene Chloride	ND		2.0		ug/L			05/02/18 09:00	1
Styrene	ND		1.0		ug/L			05/02/18 09:00	1
Tetrachloroethene	ND		1.0		ug/L			05/02/18 09:00	1
Toluene	ND		1.0		ug/L			05/02/18 09:00	1
trans-1,2-Dichloroethene	ND		1.0		ug/L			05/02/18 09:00	1
trans-1,3-Dichloropropene	ND		3.0		ug/L			05/02/18 09:00	1
trans-1,4-Dichloro-2-butene	ND		3.0		ug/L			05/02/18 09:00	1
Trichloroethene	ND		1.0		ug/L			05/02/18 09:00	1
Trichlorofluoromethane	ND		2.0		ug/L			05/02/18 09:00	1
Vinyl acetate	ND		3.0		ug/L			05/02/18 09:00	1
Vinyl chloride	ND		1.0		ug/L			05/02/18 09:00	1
Xylenes, Total	ND		2.0		ug/L			05/02/18 09:00	1

QC Sample Results

Client: Waste Management
Project/Site: 2769|Tekoi Balefill - 7314

TestAmerica Job ID: 280-108811-1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	98		70 - 127		05/02/18 09:00	1
4-Bromofluorobenzene (Surr)	94		78 - 120		05/02/18 09:00	1
Dibromofluoromethane (Surr)	97		77 - 120		05/02/18 09:00	1
Toluene-d8 (Surr)	95		80 - 125		05/02/18 09:00	1

Lab Sample ID: LCS 280-413436/4
Matrix: Water
Analysis Batch: 413436

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	5.00	5.03		ug/L		101	65 - 135
1,1,1-Trichloroethane	5.00	5.05		ug/L		101	65 - 135
1,1,2,2-Tetrachloroethane	5.00	4.51		ug/L		90	58 - 135
1,1,2-Trichloroethane	5.00	4.78		ug/L		96	64 - 135
1,1-Dichloroethane	5.00	4.91		ug/L		98	65 - 135
1,1-Dichloroethene	5.00	5.20		ug/L		104	65 - 136
1,2,3-Trichloropropane	5.00	5.06		ug/L		101	65 - 135
1,2-Dibromo-3-Chloropropane	5.00	3.97	J	ug/L		79	57 - 135
1,2-Dibromoethane	5.00	4.75		ug/L		95	65 - 135
1,2-Dichlorobenzene	5.00	4.76		ug/L		95	65 - 135
1,2-Dichloroethane	5.00	4.73		ug/L		95	65 - 135
1,2-Dichloropropane	5.00	4.86		ug/L		97	64 - 135
1,4-Dichlorobenzene	5.00	4.72		ug/L		94	65 - 135
2-Butanone (MEK)	20.0	18.9		ug/L		94	44 - 177
2-Hexanone	20.0	17.0		ug/L		85	57 - 139
4-Methyl-2-pentanone (MIBK)	20.0	18.3		ug/L		91	60 - 150
Acetone	20.0	20.4		ug/L		102	39 - 156
Acrolein	50.0	54.2		ug/L		108	36 - 147
Acrylonitrile	50.0	47.3		ug/L		95	56 - 135
Benzene	5.00	4.95		ug/L		99	65 - 135
Bromodichloromethane	5.00	4.69		ug/L		94	65 - 135
Bromoform	5.00	4.61		ug/L		92	62 - 135
Bromomethane	5.00	5.59		ug/L		112	45 - 135
Carbon disulfide	5.00	5.05		ug/L		101	55 - 143
Carbon tetrachloride	5.00	5.00		ug/L		100	65 - 135
Chlorobenzene	5.00	4.87		ug/L		97	65 - 135
Chlorobromomethane	5.00	4.86		ug/L		97	65 - 135
Chlorodibromomethane	5.00	4.84		ug/L		97	65 - 135
Chloroethane	5.00	5.74		ug/L		115	46 - 136
Chloroform	5.00	4.94		ug/L		99	65 - 135
Chloromethane	5.00	5.37		ug/L		107	34 - 145
cis-1,2-Dichloroethene	5.00	4.89		ug/L		98	65 - 135
cis-1,3-Dichloropropene	5.00	4.91		ug/L		98	65 - 135
Dibromomethane	5.00	4.59		ug/L		92	65 - 135
Ethylbenzene	5.00	4.98		ug/L		100	65 - 135
Iodomethane	5.00	5.28		ug/L		106	65 - 142
Methylene Chloride	5.00	5.11		ug/L		102	54 - 141
Styrene	5.00	4.66		ug/L		93	65 - 135
Tetrachloroethene	5.00	4.88		ug/L		98	65 - 135
Toluene	5.00	4.85		ug/L		97	65 - 135
trans-1,2-Dichloroethene	5.00	5.19		ug/L		104	65 - 135
trans-1,3-Dichloropropene	5.00	4.64		ug/L		93	65 - 135
trans-1,4-Dichloro-2-butene	5.00	4.65		ug/L		93	53 - 135
Trichloroethene	5.00	4.99		ug/L		100	65 - 135

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 280-413436/4
Matrix: Water
Analysis Batch: 413436

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Trichlorofluoromethane	5.00	4.15		ug/L		83	53 - 137
Vinyl acetate	10.0	10.2		ug/L		102	11 - 187
Vinyl chloride	5.00	5.58		ug/L		112	40 - 137
Xylenes, Total	10.0	10.3		ug/L		103	65 - 135

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*100*		*70 - 127*
4-Bromofluorobenzene (Surr)	*93*		*78 - 120*
Dibromofluoromethane (Surr)	*97*		*77 - 120*
Toluene-d8 (Surr)	*100*		*80 - 125*

Lab Sample ID: 280-108811-1 MS
Matrix: Water
Analysis Batch: 413436

Client Sample ID: MW-05D
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	ND		5.00	5.07		ug/L		101	65 - 135
1,1,1-Trichloroethane	ND		5.00	5.23		ug/L		105	65 - 135
1,1,2,2-Tetrachloroethane	ND		5.00	4.34		ug/L		87	58 - 135
1,1,2-Trichloroethane	ND		5.00	4.52		ug/L		90	64 - 135
1,1-Dichloroethane	ND		5.00	5.14		ug/L		103	65 - 135
1,1-Dichloroethene	ND		5.00	4.99		ug/L		100	65 - 136
1,2,3-Trichloropropane	ND		5.00	4.41		ug/L		88	65 - 135
1,2-Dibromo-3-Chloropropane	ND		5.00	ND		ug/L		72	57 - 135
1,2-Dibromoethane	ND		5.00	4.39		ug/L		88	65 - 135
1,2-Dichlorobenzene	ND		5.00	4.60		ug/L		92	65 - 135
1,2-Dichloroethane	ND		5.00	4.54		ug/L		91	65 - 135
1,2-Dichloropropane	ND		5.00	4.83		ug/L		97	64 - 135
1,4-Dichlorobenzene	ND		5.00	4.60		ug/L		92	65 - 135
2-Butanone (MEK)	ND		20.0	15.1		ug/L		75	44 - 177
2-Hexanone	ND		20.0	15.1		ug/L		75	57 - 139
4-Methyl-2-pentanone (MIBK)	ND		20.0	15.2		ug/L		76	60 - 150
Acetone	ND		20.0	18.3		ug/L		91	39 - 156
Acrolein	ND		50.0	43.3		ug/L		87	36 - 147
Acrylonitrile	ND		50.0	43.5		ug/L		87	56 - 135
Benzene	ND		5.00	4.91		ug/L		98	65 - 135
Bromodichloromethane	ND		5.00	4.61		ug/L		92	65 - 135
Bromoform	ND		5.00	4.35		ug/L		87	62 - 135
Bromomethane	ND		5.00	4.74		ug/L		95	45 - 135
Carbon disulfide	ND		5.00	5.09		ug/L		102	55 - 143
Carbon tetrachloride	ND		5.00	5.14		ug/L		103	65 - 135
Chlorobenzene	ND		5.00	4.83		ug/L		97	65 - 135
Chlorobromomethane	ND		5.00	4.51		ug/L		90	65 - 135
Chlorodibromomethane	ND		5.00	4.54		ug/L		91	65 - 135
Chloroethane	ND		5.00	4.80		ug/L		96	46 - 136
Chloroform	ND		5.00	4.96		ug/L		99	65 - 135
Chloromethane	ND		5.00	5.07		ug/L		101	34 - 145
cis-1,2-Dichloroethene	ND		5.00	4.84		ug/L		97	65 - 135

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 280-108811-1 MS
Matrix: Water
Analysis Batch: 413436

Client Sample ID: MW-05D
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
cis-1,3-Dichloropropene	ND		5.00	4.51		ug/L		90	65 - 135
Dibromomethane	ND		5.00	4.38		ug/L		88	65 - 135
Ethylbenzene	ND		5.00	5.06		ug/L		101	65 - 135
Iodomethane	ND		5.00	4.84		ug/L		97	65 - 142
Methylene Chloride	ND		5.00	5.33		ug/L		94	54 - 141
Styrene	ND	F1	5.00	2.73	F1	ug/L		55	65 - 135
Tetrachloroethene	ND		5.00	5.24		ug/L		99	65 - 135
Toluene	ND		5.00	4.80		ug/L		96	65 - 135
trans-1,2-Dichloroethene	ND		5.00	5.15		ug/L		103	65 - 135
trans-1,3-Dichloropropene	ND		5.00	4.53		ug/L		91	65 - 135
trans-1,4-Dichloro-2-butene	ND		5.00	4.55		ug/L		91	53 - 135
Trichloroethene	ND		5.00	5.20		ug/L		97	65 - 135
Trichlorofluoromethane	ND		5.00	5.33		ug/L		107	53 - 137
Vinyl acetate	ND		10.0	7.39		ug/L		74	11 - 187
Vinyl chloride	ND		5.00	5.09		ug/L		102	40 - 137
Xylenes, Total	ND		10.0	10.1		ug/L		101	65 - 135

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*99*		*70 - 127*
4-Bromofluorobenzene (Surr)	*91*		*78 - 120*
Dibromofluoromethane (Surr)	*94*		*77 - 120*
Toluene-d8 (Surr)	*98*		*80 - 125*

Lab Sample ID: 280-108811-1 MSD
Matrix: Water
Analysis Batch: 413436

Client Sample ID: MW-05D
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane	ND		5.00	5.22		ug/L		104	65 - 135	3	20
1,1,1-Trichloroethane	ND		5.00	5.21		ug/L		104	65 - 135	0	20
1,1,2,2-Tetrachloroethane	ND		5.00	4.61		ug/L		92	58 - 135	6	20
1,1,2-Trichloroethane	ND		5.00	4.87		ug/L		97	64 - 135	8	27
1,1-Dichloroethane	ND		5.00	5.17		ug/L		103	65 - 135	1	21
1,1-Dichloroethene	ND		5.00	5.04		ug/L		101	65 - 136	1	20
1,2,3-Trichloropropane	ND		5.00	4.93		ug/L		99	65 - 135	11	23
1,2-Dibromo-3-Chloropropane	ND		5.00	ND		ug/L		82	57 - 135	13	22
1,2-Dibromoethane	ND		5.00	4.73		ug/L		95	65 - 135	7	27
1,2-Dichlorobenzene	ND		5.00	4.88		ug/L		98	65 - 135	6	20
1,2-Dichloroethane	ND		5.00	4.82		ug/L		96	65 - 135	6	20
1,2-Dichloropropane	ND		5.00	5.01		ug/L		100	64 - 135	3	20
1,4-Dichlorobenzene	ND		5.00	4.83		ug/L		97	65 - 135	5	23
2-Butanone (MEK)	ND		20.0	18.0		ug/L		90	44 - 177	18	32
2-Hexanone	ND		20.0	16.6		ug/L		83	57 - 139	10	25
4-Methyl-2-pentanone (MIBK)	ND		20.0	17.6		ug/L		88	60 - 150	14	22
Acetone	ND		20.0	18.9		ug/L		95	39 - 156	4	23
Acrolein	ND		50.0	46.6		ug/L		93	36 - 147	7	30
Acrylonitrile	ND		50.0	46.7		ug/L		93	56 - 135	7	30
Benzene	ND		5.00	5.04		ug/L		101	65 - 135	3	20

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 280-108811-1 MSD
Matrix: Water
Analysis Batch: 413436

Client Sample ID: MW-05D
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Bromodichloromethane	ND		5.00	4.81		ug/L		96	65 - 135	4	20
Bromoform	ND		5.00	4.54		ug/L		91	62 - 135	4	27
Bromomethane	ND		5.00	5.25		ug/L		105	45 - 135	10	33
Carbon disulfide	ND		5.00	5.04		ug/L		101	55 - 143	1	20
Carbon tetrachloride	ND		5.00	5.09		ug/L		102	65 - 135	1	21
Chlorobenzene	ND		5.00	4.97		ug/L		99	65 - 135	3	20
Chlorobromomethane	ND		5.00	4.78		ug/L		96	65 - 135	6	29
Chlorodibromomethane	ND		5.00	4.70		ug/L		94	65 - 135	3	20
Chloroethane	ND		5.00	5.19		ug/L		104	46 - 136	8	25
Chloroform	ND		5.00	5.13		ug/L		103	65 - 135	3	20
Chloromethane	ND		5.00	5.40		ug/L		108	34 - 145	6	24
cis-1,2-Dichloroethene	ND		5.00	4.94		ug/L		99	65 - 135	2	20
cis-1,3-Dichloropropene	ND		5.00	4.78		ug/L		96	65 - 135	6	26
Dibromomethane	ND		5.00	4.68		ug/L		94	65 - 135	6	26
Ethylbenzene	ND		5.00	5.08		ug/L		102	65 - 135	0	20
Iodomethane	ND		5.00	4.96		ug/L		99	65 - 142	2	25
Methylene Chloride	ND		5.00	5.49		ug/L		97	54 - 141	3	26
Styrene	ND	F1	5.00	3.48		ug/L		70	65 - 135	24	26
Tetrachloroethene	ND		5.00	5.24		ug/L		99	65 - 135	0	20
Toluene	ND		5.00	4.90		ug/L		98	65 - 135	2	20
trans-1,2-Dichloroethene	ND		5.00	5.13		ug/L		103	65 - 135	0	24
trans-1,3-Dichloropropene	ND		5.00	4.83		ug/L		97	65 - 135	7	26
trans-1,4-Dichloro-2-butene	ND		5.00	4.78		ug/L		96	53 - 135	5	25
Trichloroethene	ND		5.00	5.36		ug/L		100	65 - 135	3	20
Trichlorofluoromethane	ND		5.00	5.65		ug/L		113	53 - 137	6	27
Vinyl acetate	ND		10.0	8.46		ug/L		85	11 - 187	13	24
Vinyl chloride	ND		5.00	5.64		ug/L		113	40 - 137	10	24
Xylenes, Total	ND		10.0	10.3		ug/L		103	65 - 135	2	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*99*		*70 - 127*
4-Bromofluorobenzene (Surr)	*93*		*78 - 120*
Dibromofluoromethane (Surr)	*95*		*77 - 120*
Toluene-d8 (Surr)	*98*		*80 - 125*

Method: 6010B - Metals (ICP)

Lab Sample ID: MB 280-412561/1-A
Matrix: Water
Analysis Batch: 413435

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 412561

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		15		ug/L		04/30/18 17:00	05/01/18 21:02	1
Barium	ND		10		ug/L		04/30/18 17:00	05/01/18 21:02	1
Beryllium	ND		1.0		ug/L		04/30/18 17:00	05/01/18 21:02	1
Cadmium	ND		5.0		ug/L		04/30/18 17:00	05/01/18 21:02	1
Cobalt	ND		10		ug/L		04/30/18 17:00	05/01/18 21:02	1
Chromium	ND		10		ug/L		04/30/18 17:00	05/01/18 21:02	1

Method: 6010B - Metals (ICP) (Continued)

Lab Sample ID: MB 280-412561/1-A
Matrix: Water
Analysis Batch: 413435

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 412561

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	ND		15		ug/L		04/30/18 17:00	05/01/18 21:02	1
Calcium	ND		200		ug/L		04/30/18 17:00	05/01/18 21:02	1
Nickel	ND		40		ug/L		04/30/18 17:00	05/01/18 21:02	1
Lead	ND		9.0		ug/L		04/30/18 17:00	05/01/18 21:02	1
Antimony	ND		10		ug/L		04/30/18 17:00	05/01/18 21:02	1
Selenium	ND		15		ug/L		04/30/18 17:00	05/01/18 21:02	1
Iron	ND		100		ug/L		04/30/18 17:00	05/01/18 21:02	1
Thallium	ND		15		ug/L		04/30/18 17:00	05/01/18 21:02	1
Vanadium	ND		10		ug/L		04/30/18 17:00	05/01/18 21:02	1
Zinc	ND		20		ug/L		04/30/18 17:00	05/01/18 21:02	1
Magnesium	ND		200		ug/L		04/30/18 17:00	05/01/18 21:02	1
Silver	ND		10		ug/L		04/30/18 17:00	05/01/18 21:02	1
Manganese	ND		10		ug/L		04/30/18 17:00	05/01/18 21:02	1
Potassium	ND		3000		ug/L		04/30/18 17:00	05/01/18 21:02	1
Sodium	ND		1000		ug/L		04/30/18 17:00	05/01/18 21:02	1

Lab Sample ID: LCS 280-412561/2-A
Matrix: Water
Analysis Batch: 413435

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 412561

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	1000	1020		ug/L		102	88 - 110
Barium	2000	2120		ug/L		106	90 - 112
Beryllium	50.0	50.6		ug/L		101	89 - 113
Cadmium	100	105		ug/L		105	88 - 111
Cobalt	500	497		ug/L		99	89 - 111
Chromium	200	214		ug/L		107	90 - 113
Copper	250	269		ug/L		108	86 - 112
Calcium	50000	52400		ug/L		105	90 - 111
Nickel	500	534		ug/L		107	89 - 111
Lead	500	509		ug/L		102	89 - 110
Antimony	500	526		ug/L		105	88 - 110
Selenium	2000	2030		ug/L		102	85 - 112
Iron	1000	1020		ug/L		102	89 - 115
Thallium	2000	2070		ug/L		103	88 - 110
Vanadium	500	519		ug/L		104	90 - 111
Zinc	500	509		ug/L		102	85 - 111
Magnesium	50000	51700		ug/L		103	90 - 113
Silver	50.0	56.0		ug/L		112	86 - 115
Manganese	500	509		ug/L		102	90 - 110
Potassium	50000	51300		ug/L		103	89 - 114
Sodium	50000	51100		ug/L		102	90 - 115

Lab Sample ID: 280-108811-1 MS
Matrix: Water
Analysis Batch: 413435

Client Sample ID: MW-05D
Prep Type: Total Recoverable
Prep Batch: 412561

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	ND		1000	1080		ug/L		107	84 - 124

Method: 6010B - Metals (ICP) (Continued)

Lab Sample ID: 280-108811-1 MS
Matrix: Water
Analysis Batch: 413435

Client Sample ID: MW-05D
Prep Type: Total Recoverable
Prep Batch: 412561

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Barium	25		2000	2150		ug/L		106	85 - 120
Beryllium	ND		50.0	49.8		ug/L		100	79 - 121
Cadmium	ND		100	100		ug/L		100	82 - 119
Cobalt	ND		500	488		ug/L		98	82 - 119
Chromium	ND		200	211		ug/L		104	73 - 135
Copper	ND		250	289		ug/L		116	82 - 129
Calcium	200000		50000	255000	4	ug/L		102	48 - 153
Nickel	ND		500	521		ug/L		104	84 - 120
Lead	ND		500	492		ug/L		98	89 - 121
Antimony	ND		500	546		ug/L		109	81 - 124
Selenium	ND		2000	2130		ug/L		107	71 - 140
Iron	ND		1000	1040		ug/L		99	52 - 155
Thallium	ND		2000	1910		ug/L		95	90 - 116
Vanadium	ND		500	522		ug/L		103	85 - 120
Zinc	ND		500	489		ug/L		96	60 - 137
Magnesium	240000		50000	288000	4	ug/L		106	62 - 146
Silver	ND		50.0	62.8		ug/L		117	75 - 141
Manganese	ND		500	502		ug/L		100	79 - 121
Potassium	33000		50000	88400		ug/L		110	76 - 132
Sodium	1300000		50000	1310000	4	ug/L		102	70 - 203

Lab Sample ID: 280-108811-1 MSD
Matrix: Water
Analysis Batch: 413435

Client Sample ID: MW-05D
Prep Type: Total Recoverable
Prep Batch: 412561

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	ND		1000	1070		ug/L		106	84 - 124	1	20
Barium	25		2000	2150		ug/L		106	85 - 120	0	20
Beryllium	ND		50.0	49.3		ug/L		99	79 - 121	1	20
Cadmium	ND		100	98.9		ug/L		99	82 - 119	1	20
Cobalt	ND		500	486		ug/L		97	82 - 119	0	20
Chromium	ND		200	210		ug/L		104	73 - 135	0	20
Copper	ND		250	288		ug/L		115	82 - 129	1	20
Calcium	200000		50000	255000	4	ug/L		101	48 - 153	0	20
Nickel	ND		500	518		ug/L		104	84 - 120	1	20
Lead	ND		500	487		ug/L		97	89 - 121	1	20
Antimony	ND		500	543		ug/L		109	81 - 124	0	20
Selenium	ND		2000	2140		ug/L		107	71 - 140	0	20
Iron	ND		1000	1030		ug/L		99	52 - 155	1	20
Thallium	ND		2000	1900		ug/L		95	90 - 116	1	20
Vanadium	ND		500	518		ug/L		102	85 - 120	1	20
Zinc	ND		500	484		ug/L		95	60 - 137	1	20
Magnesium	240000		50000	288000	4	ug/L		106	62 - 146	0	20
Silver	ND		50.0	62.8		ug/L		117	75 - 141	0	20
Manganese	ND		500	498		ug/L		99	79 - 121	1	20
Potassium	33000		50000	88700		ug/L		111	76 - 132	0	20
Sodium	1300000		50000	1300000	4	ug/L		77	70 - 203	1	20

QC Sample Results

Client: Waste Management
Project/Site: 2769|Tekoi Balefill - 7314

TestAmerica Job ID: 280-108811-1

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 280-413458/1-A
Matrix: Water
Analysis Batch: 413613

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 413458

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		05/02/18 12:21	05/02/18 18:44	1

Lab Sample ID: LCS 280-413458/2-A
Matrix: Water
Analysis Batch: 413613

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 413458

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	5.00	5.11		ug/L		102	84 - 120

Lab Sample ID: 280-108972-C-1-E MS
Matrix: Water
Analysis Batch: 413613

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 413458

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	ND		5.00	5.08		ug/L		102	75 - 125

Lab Sample ID: 280-108972-C-1-F MSD
Matrix: Water
Analysis Batch: 413613

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 413458

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	ND		5.00	5.05		ug/L		101	75 - 125	1	20

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 280-413883/6
Matrix: Water
Analysis Batch: 413883

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		3.0		mg/L			05/06/18 10:30	1
Sulfate	ND		5.0		mg/L			05/06/18 10:30	1

Lab Sample ID: LCS 280-413883/4
Matrix: Water
Analysis Batch: 413883

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	100	104		mg/L		104	90 - 110
Sulfate	100	103		mg/L		103	90 - 110

Lab Sample ID: LCSD 280-413883/5
Matrix: Water
Analysis Batch: 413883

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	100	103		mg/L		103	90 - 110	0	10
Sulfate	100	103		mg/L		103	90 - 110	0	10

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: MRL 280-413883/3
Matrix: Water
Analysis Batch: 413883

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	2.50	ND		mg/L		104	50 - 150
Sulfate	2.50	ND		mg/L		104	50 - 150

Lab Sample ID: 280-108374-E-1 MS
Matrix: Water
Analysis Batch: 413883

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	ND		500	542		mg/L		108	80 - 120
Sulfate	1900		500	2450		mg/L		106	80 - 120

Lab Sample ID: 280-108374-E-1 MSD
Matrix: Water
Analysis Batch: 413883

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	ND		500	532		mg/L		106	80 - 120	2	20
Sulfate	1900		500	2400		mg/L		96	80 - 120	2	20

Lab Sample ID: 280-108374-E-1 DU
Matrix: Water
Analysis Batch: 413883

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Chloride	ND		ND		mg/L		NC	15
Sulfate	1900		1920		mg/L		0.1	15

Lab Sample ID: MB 280-413955/6
Matrix: Water
Analysis Batch: 413955

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		3.0		mg/L			05/07/18 12:40	1

Lab Sample ID: LCS 280-413955/4
Matrix: Water
Analysis Batch: 413955

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	100	101		mg/L		101	90 - 110

Lab Sample ID: LCSD 280-413955/5
Matrix: Water
Analysis Batch: 413955

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	100	101		mg/L		101	90 - 110	0	10

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: MRL 280-413955/7
Matrix: Water
Analysis Batch: 413955

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	2.50	ND		mg/L		89	50 - 150

Lab Sample ID: 280-108811-3 MS
Matrix: Water
Analysis Batch: 413955

Client Sample ID: DUP
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	2200		500	2660	4	mg/L		97	80 - 120
Sulfate	860		500	1390		mg/L		105	80 - 120

Lab Sample ID: 280-108811-3 MSD
Matrix: Water
Analysis Batch: 413955

Client Sample ID: DUP
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	2200		500	2660	4	mg/L		98	80 - 120	0	20
Sulfate	860		500	1390		mg/L		106	80 - 120	0	20

Lab Sample ID: 280-108811-3 DU
Matrix: Water
Analysis Batch: 413955

Client Sample ID: DUP
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Chloride	2200		2150		mg/L		1	15
Sulfate	860		851		mg/L		2	15

Method: 350.1 - Nitrogen, Ammonia

Lab Sample ID: MB 280-415134/62
Matrix: Water
Analysis Batch: 415134

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia as N	ND		0.20		mg/L			05/16/18 13:58	1

Lab Sample ID: LCS 280-415134/60
Matrix: Water
Analysis Batch: 415134

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia as N	2.50	2.44		mg/L		98	90 - 110

Lab Sample ID: LCSD 280-415134/61
Matrix: Water
Analysis Batch: 415134

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ammonia as N	2.50	2.38		mg/L		95	90 - 110	3	10

Method: 350.1 - Nitrogen, Ammonia (Continued)

Lab Sample ID: 280-108768-A-2 MS
Matrix: Water
Analysis Batch: 415134

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia as N	ND		1.00	1.14		mg/L		107	90 - 110

Lab Sample ID: 280-108768-A-2 MSD
Matrix: Water
Analysis Batch: 415134

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ammonia as N	ND		1.00	1.10		mg/L		103	90 - 110	4	10

Method: 351.2 - Nitrogen, Total Kjeldahl

Lab Sample ID: MB 280-413402/30-A
Matrix: Water
Analysis Batch: 413695

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 413402

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Kjeldahl Nitrogen	0.611		0.50		mg/L		05/01/18 18:28	05/03/18 19:40	1

Lab Sample ID: LCS 280-413402/28-A
Matrix: Water
Analysis Batch: 413695

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 413402

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Kjeldahl Nitrogen	6.00	6.44		mg/L		107	90 - 110

Lab Sample ID: LCSD 280-413402/29-A
Matrix: Water
Analysis Batch: 413695

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 413402

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Kjeldahl Nitrogen	6.00	6.63		mg/L		110	90 - 110	3	25

Lab Sample ID: 280-108953-A-4-E MS
Matrix: Water
Analysis Batch: 413695

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 413402

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Kjeldahl Nitrogen	7.1	B F1	5.00	15.4	F1	mg/L		166	90 - 110

Lab Sample ID: 280-108953-A-4-F MSD
Matrix: Water
Analysis Batch: 413695

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 413402

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Kjeldahl Nitrogen	7.1	B F1	5.00	12.1		mg/L		100	90 - 110	24	25

QC Sample Results

Client: Waste Management
Project/Site: 2769|Tekoi Balefill - 7314

TestAmerica Job ID: 280-108811-1

Method: 410.4 - COD

Lab Sample ID: MB 280-415066/5
Matrix: Water
Analysis Batch: 415066

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chemical Oxygen Demand	ND		20		mg/L			05/16/18 09:28	1

Lab Sample ID: LCS 280-415066/3
Matrix: Water
Analysis Batch: 415066

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chemical Oxygen Demand	100	96.8		mg/L		97	90 - 110

Lab Sample ID: LCSD 280-415066/4
Matrix: Water
Analysis Batch: 415066

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chemical Oxygen Demand	100	94.0		mg/L		94	90 - 110	3	11

Lab Sample ID: 280-108710-E-8 MS
Matrix: Water
Analysis Batch: 415066

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chemical Oxygen Demand	ND	F1 F2	50.0	24.7	F1	mg/L		49	90 - 110

Lab Sample ID: 280-108710-E-8 MSD
Matrix: Water
Analysis Batch: 415066

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chemical Oxygen Demand	ND	F1 F2	50.0	ND	F1 F2	mg/L		24	90 - 110	70	11

Method: SM 2320B - Alkalinity

Lab Sample ID: MB 280-413499/5
Matrix: Water
Analysis Batch: 413499

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity	ND		5.0		mg/L			05/02/18 09:08	1
Bicarbonate Alkalinity as CaCO3	ND		5.0		mg/L			05/02/18 09:08	1
Carbonate Alkalinity as CaCO3	ND		5.0		mg/L			05/02/18 09:08	1

Lab Sample ID: LCS 280-413499/4
Matrix: Water
Analysis Batch: 413499

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Alkalinity	200	191		mg/L		96	90 - 110

QC Sample Results

Client: Waste Management
Project/Site: 2769|Tekoi Balefill - 7314

TestAmerica Job ID: 280-108811-1

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 280-412861/1
Matrix: Water
Analysis Batch: 412861

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10		mg/L			04/26/18 14:33	1

Lab Sample ID: LCS 280-412861/2
Matrix: Water
Analysis Batch: 412861

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	501	502		mg/L		100	86 - 110

Lab Sample ID: 280-108837-P-1 DU
Matrix: Water
Analysis Batch: 412861

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	480		475		mg/L		0.8	10

Lab Sample ID: MB 280-415261/1
Matrix: Water
Analysis Batch: 415261

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10		mg/L			05/17/18 14:22	1

Lab Sample ID: LCS 280-415261/2
Matrix: Water
Analysis Batch: 415261

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	500	495		mg/L		99	86 - 110

Lab Sample ID: LCSD 280-415261/3
Matrix: Water
Analysis Batch: 415261

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Dissolved Solids	500	498		mg/L		100	86 - 110	1	20

Lab Sample ID: 280-109653-A-1 DU
Matrix: Water
Analysis Batch: 415261

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	230		243		mg/L		5	10

QC Sample Results

Client: Waste Management
Project/Site: 2769|Tekoi Balefill - 7314

TestAmerica Job ID: 280-108811-1

Method: SM 5310B - Organic Carbon, Total (TOC)

Lab Sample ID: MB 280-414717/36
Matrix: Water
Analysis Batch: 414717

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
TOC Result 1	ND		1.0		mg/L			05/12/18 00:35	1
TOC Result 2	ND		1.0		mg/L			05/12/18 00:35	1

Lab Sample ID: LCS 280-414717/35
Matrix: Water
Analysis Batch: 414717

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
TOC Result 1	25.0	25.1		mg/L		100	88 - 112
TOC Result 2	25.0	25.1		mg/L		100	88 - 112

Lab Sample ID: 280-108812-D-1 MS
Matrix: Water
Analysis Batch: 414717

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
TOC Result 1	1.5		25.0	26.0		mg/L		98	88 - 112
TOC Result 2	1.6		25.0	27.0		mg/L		101	88 - 112

Lab Sample ID: 280-108812-D-1 MSD
Matrix: Water
Analysis Batch: 414717

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
TOC Result 1	1.5		25.0	27.2		mg/L		103	88 - 112	5	15
TOC Result 2	1.6		25.0	26.4		mg/L		99	88 - 112	2	15

QC Association Summary

Client: Waste Management
Project/Site: 2769|Tekoi Balefill - 7314

TestAmerica Job ID: 280-108811-1

GC/MS VOA

Analysis Batch: 413436

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-108811-1	MW-05D	Total/NA	Water	8260B	
280-108811-2	MW-07D	Total/NA	Water	8260B	
280-108811-3	DUP	Total/NA	Water	8260B	
280-108811-4	TRIP BLANK	Total/NA	Water	8260B	
MB 280-413436/6	Method Blank	Total/NA	Water	8260B	
LCS 280-413436/4	Lab Control Sample	Total/NA	Water	8260B	
280-108811-1 MS	MW-05D	Total/NA	Water	8260B	
280-108811-1 MSD	MW-05D	Total/NA	Water	8260B	

Metals

Prep Batch: 412561

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-108811-1	MW-05D	Total Recoverable	Water	3005A	
280-108811-2	MW-07D	Total Recoverable	Water	3005A	
280-108811-3	DUP	Total Recoverable	Water	3005A	
MB 280-412561/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 280-412561/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
280-108811-1 MS	MW-05D	Total Recoverable	Water	3005A	
280-108811-1 MSD	MW-05D	Total Recoverable	Water	3005A	

Analysis Batch: 413435

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-108811-1	MW-05D	Total Recoverable	Water	6010B	412561
280-108811-2	MW-07D	Total Recoverable	Water	6010B	412561
280-108811-3	DUP	Total Recoverable	Water	6010B	412561
MB 280-412561/1-A	Method Blank	Total Recoverable	Water	6010B	412561
LCS 280-412561/2-A	Lab Control Sample	Total Recoverable	Water	6010B	412561
280-108811-1 MS	MW-05D	Total Recoverable	Water	6010B	412561
280-108811-1 MSD	MW-05D	Total Recoverable	Water	6010B	412561

Prep Batch: 413458

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-108811-1	MW-05D	Total/NA	Water	7470A	
280-108811-2	MW-07D	Total/NA	Water	7470A	
280-108811-3	DUP	Total/NA	Water	7470A	
MB 280-413458/1-A	Method Blank	Total/NA	Water	7470A	
LCS 280-413458/2-A	Lab Control Sample	Total/NA	Water	7470A	
280-108972-C-1-E MS	Matrix Spike	Total/NA	Water	7470A	
280-108972-C-1-F MSD	Matrix Spike Duplicate	Total/NA	Water	7470A	

Analysis Batch: 413613

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-108811-1	MW-05D	Total/NA	Water	7470A	413458
280-108811-2	MW-07D	Total/NA	Water	7470A	413458
280-108811-3	DUP	Total/NA	Water	7470A	413458
MB 280-413458/1-A	Method Blank	Total/NA	Water	7470A	413458
LCS 280-413458/2-A	Lab Control Sample	Total/NA	Water	7470A	413458
280-108972-C-1-E MS	Matrix Spike	Total/NA	Water	7470A	413458
280-108972-C-1-F MSD	Matrix Spike Duplicate	Total/NA	Water	7470A	413458

QC Association Summary

Client: Waste Management
Project/Site: 2769|Tekoi Balefill - 7314

TestAmerica Job ID: 280-108811-1

General Chemistry

Analysis Batch: 412861

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-108811-2	MW-07D	Total/NA	Water	SM 2540C	
280-108811-3	DUP	Total/NA	Water	SM 2540C	
MB 280-412861/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 280-412861/2	Lab Control Sample	Total/NA	Water	SM 2540C	
280-108837-P-1 DU	Duplicate	Total/NA	Water	SM 2540C	

Prep Batch: 413402

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-108811-1	MW-05D	Total/NA	Water	351.2	
280-108811-2	MW-07D	Total/NA	Water	351.2	
280-108811-3	DUP	Total/NA	Water	351.2	
MB 280-413402/30-A	Method Blank	Total/NA	Water	351.2	
LCS 280-413402/28-A	Lab Control Sample	Total/NA	Water	351.2	
LCSD 280-413402/29-A	Lab Control Sample Dup	Total/NA	Water	351.2	
280-108953-A-4-E MS	Matrix Spike	Total/NA	Water	351.2	
280-108953-A-4-F MSD	Matrix Spike Duplicate	Total/NA	Water	351.2	

Analysis Batch: 413499

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-108811-1	MW-05D	Total/NA	Water	SM 2320B	
280-108811-2	MW-07D	Total/NA	Water	SM 2320B	
280-108811-3	DUP	Total/NA	Water	SM 2320B	
MB 280-413499/5	Method Blank	Total/NA	Water	SM 2320B	
LCS 280-413499/4	Lab Control Sample	Total/NA	Water	SM 2320B	

Analysis Batch: 413695

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-108811-1	MW-05D	Total/NA	Water	351.2	413402
280-108811-2	MW-07D	Total/NA	Water	351.2	413402
280-108811-3	DUP	Total/NA	Water	351.2	413402
MB 280-413402/30-A	Method Blank	Total/NA	Water	351.2	413402
LCS 280-413402/28-A	Lab Control Sample	Total/NA	Water	351.2	413402
LCSD 280-413402/29-A	Lab Control Sample Dup	Total/NA	Water	351.2	413402
280-108953-A-4-E MS	Matrix Spike	Total/NA	Water	351.2	413402
280-108953-A-4-F MSD	Matrix Spike Duplicate	Total/NA	Water	351.2	413402

Analysis Batch: 413883

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-108811-1	MW-05D	Total/NA	Water	300.0	
280-108811-2	MW-07D	Total/NA	Water	300.0	
280-108811-3	DUP	Total/NA	Water	300.0	
MB 280-413883/6	Method Blank	Total/NA	Water	300.0	
LCS 280-413883/4	Lab Control Sample	Total/NA	Water	300.0	
LCSD 280-413883/5	Lab Control Sample Dup	Total/NA	Water	300.0	
MRL 280-413883/3	Lab Control Sample	Total/NA	Water	300.0	
280-108374-E-1 MS	Matrix Spike	Total/NA	Water	300.0	
280-108374-E-1 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	
280-108374-E-1 DU	Duplicate	Total/NA	Water	300.0	

QC Association Summary

Client: Waste Management
Project/Site: 2769|Tekoi Balefill - 7314

TestAmerica Job ID: 280-108811-1

General Chemistry (Continued)

Analysis Batch: 413955

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-108811-3	DUP	Total/NA	Water	300.0	
MB 280-413955/6	Method Blank	Total/NA	Water	300.0	
LCS 280-413955/4	Lab Control Sample	Total/NA	Water	300.0	
LCSD 280-413955/5	Lab Control Sample Dup	Total/NA	Water	300.0	
MRL 280-413955/7	Lab Control Sample	Total/NA	Water	300.0	
280-108811-3 MS	DUP	Total/NA	Water	300.0	
280-108811-3 MSD	DUP	Total/NA	Water	300.0	
280-108811-3 DU	DUP	Total/NA	Water	300.0	

Analysis Batch: 414717

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-108811-1	MW-05D	Total/NA	Water	SM 5310B	
280-108811-2	MW-07D	Total/NA	Water	SM 5310B	
280-108811-3	DUP	Total/NA	Water	SM 5310B	
MB 280-414717/36	Method Blank	Total/NA	Water	SM 5310B	
LCS 280-414717/35	Lab Control Sample	Total/NA	Water	SM 5310B	
280-108812-D-1 MS	Matrix Spike	Total/NA	Water	SM 5310B	
280-108812-D-1 MSD	Matrix Spike Duplicate	Total/NA	Water	SM 5310B	

Analysis Batch: 415066

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-108811-1	MW-05D	Total/NA	Water	410.4	
280-108811-2	MW-07D	Total/NA	Water	410.4	
280-108811-3	DUP	Total/NA	Water	410.4	
MB 280-415066/5	Method Blank	Total/NA	Water	410.4	
LCS 280-415066/3	Lab Control Sample	Total/NA	Water	410.4	
LCSD 280-415066/4	Lab Control Sample Dup	Total/NA	Water	410.4	
280-108710-E-8 MS	Matrix Spike	Total/NA	Water	410.4	
280-108710-E-8 MSD	Matrix Spike Duplicate	Total/NA	Water	410.4	

Analysis Batch: 415134

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-108811-1	MW-05D	Total/NA	Water	350.1	
280-108811-2	MW-07D	Total/NA	Water	350.1	
280-108811-3	DUP	Total/NA	Water	350.1	
MB 280-415134/62	Method Blank	Total/NA	Water	350.1	
LCS 280-415134/60	Lab Control Sample	Total/NA	Water	350.1	
LCSD 280-415134/61	Lab Control Sample Dup	Total/NA	Water	350.1	
280-108768-A-2 MS	Matrix Spike	Total/NA	Water	350.1	
280-108768-A-2 MSD	Matrix Spike Duplicate	Total/NA	Water	350.1	

Analysis Batch: 415261

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-108811-1	MW-05D	Total/NA	Water	SM 2540C	
MB 280-415261/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 280-415261/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 280-415261/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	
280-109653-A-1 DU	Duplicate	Total/NA	Water	SM 2540C	

QC Association Summary

Client: Waste Management
Project/Site: 2769|Tekoi Balefill - 7314

TestAmerica Job ID: 280-108811-1

Field Service / Mobile Lab

Analysis Batch: 412393

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-108811-1	MW-05D	Total/NA	Water	Field Sampling	
280-108811-2	MW-07D	Total/NA	Water	Field Sampling	

Lab Chronicle

Client: Waste Management
Project/Site: 2769|Tekoi Balefill - 7314

TestAmerica Job ID: 280-108811-1

Client Sample ID: MW-05D

Lab Sample ID: 280-108811-1
Matrix: Water

Date Collected: 04/19/18 11:05
Date Received: 04/20/18 09:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	20 mL	20 mL	413436	05/02/18 12:49	DPI	TAL DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	412561	04/30/18 17:00	LRD	TAL DEN
Total Recoverable	Analysis	6010B		1			413435	05/01/18 21:09	CML	TAL DEN
Total/NA	Prep	7470A			30 mL	50 mL	413458	05/02/18 12:21	CDH	TAL DEN
Total/NA	Analysis	7470A		1			413613	05/02/18 19:02	CDH	TAL DEN
Total/NA	Analysis	300.0		20	5 mL	5 mL	413883	05/06/18 18:30	CCJ	TAL DEN
Total/NA	Analysis	350.1		1			415134	05/16/18 14:36	JAP	TAL DEN
Total/NA	Prep	351.2			25 mL	25 mL	413402	05/01/18 18:28	SVC	TAL DEN
Total/NA	Analysis	351.2		1			413695	05/03/18 19:50	SVC	TAL DEN
Total/NA	Analysis	410.4		5	2 mL	2 mL	415066	05/16/18 09:28	CCJ	TAL DEN
Total/NA	Analysis	SM 2320B		1			413499	05/02/18 10:57	LPL	TAL DEN
Total/NA	Analysis	SM 2540C		1	25 mL	100 mL	415261	05/17/18 14:22	SGB	TAL DEN
Total/NA	Analysis	SM 5310B		1			414717	05/12/18 04:48	A1D	TAL DEN
Total/NA	Analysis	Field Sampling		1			412393	04/19/18 11:05	S1D	TAL DEN

Client Sample ID: MW-07D

Lab Sample ID: 280-108811-2
Matrix: Water

Date Collected: 04/19/18 13:20
Date Received: 04/20/18 09:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	20 mL	20 mL	413436	05/02/18 13:52	DPI	TAL DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	412561	04/30/18 17:00	LRD	TAL DEN
Total Recoverable	Analysis	6010B		1			413435	05/01/18 21:22	CML	TAL DEN
Total/NA	Prep	7470A			30 mL	50 mL	413458	05/02/18 12:21	CDH	TAL DEN
Total/NA	Analysis	7470A		1			413613	05/02/18 19:04	CDH	TAL DEN
Total/NA	Analysis	300.0		20	5 mL	5 mL	413883	05/06/18 18:48	CCJ	TAL DEN
Total/NA	Analysis	350.1		1			415134	05/16/18 14:38	JAP	TAL DEN
Total/NA	Prep	351.2			25 mL	25 mL	413402	05/01/18 18:28	SVC	TAL DEN
Total/NA	Analysis	351.2		1			413695	05/03/18 19:52	SVC	TAL DEN
Total/NA	Analysis	410.4		5	2 mL	2 mL	415066	05/16/18 09:28	CCJ	TAL DEN
Total/NA	Analysis	SM 2320B		1			413499	05/02/18 11:04	LPL	TAL DEN
Total/NA	Analysis	SM 2540C		1	25 mL	100 mL	412861	04/26/18 14:33	JAP	TAL DEN
Total/NA	Analysis	SM 5310B		1			414717	05/12/18 04:26	A1D	TAL DEN
Total/NA	Analysis	Field Sampling		1			412393	04/19/18 13:20	S1D	TAL DEN

Client Sample ID: DUP

Lab Sample ID: 280-108811-3
Matrix: Water

Date Collected: 04/19/18 11:35
Date Received: 04/20/18 09:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	20 mL	20 mL	413436	05/02/18 14:12	DPI	TAL DEN

Lab Chronicle

Client: Waste Management
Project/Site: 2769|Tekoi Balefill - 7314

TestAmerica Job ID: 280-108811-1

Client Sample ID: DUP

Lab Sample ID: 280-108811-3
Matrix: Water

Date Collected: 04/19/18 11:35
Date Received: 04/20/18 09:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	412561	04/30/18 17:00	LRD	TAL DEN
Total Recoverable	Analysis	6010B		1			413435	05/01/18 21:26	CML	TAL DEN
Total/NA	Prep	7470A			30 mL	50 mL	413458	05/02/18 12:21	CDH	TAL DEN
Total/NA	Analysis	7470A		1			413613	05/02/18 19:07	CDH	TAL DEN
Total/NA	Analysis	300.0		20	5 mL	5 mL	413955	05/07/18 22:34	TLP	TAL DEN
Total/NA	Analysis	300.0		10	5 mL	5 mL	413883	05/06/18 19:06	CCJ	TAL DEN
Total/NA	Analysis	350.1		1			415134	05/16/18 14:40	JAP	TAL DEN
Total/NA	Prep	351.2			25 mL	25 mL	413402	05/01/18 18:28	SVC	TAL DEN
Total/NA	Analysis	351.2		1			413695	05/03/18 19:53	SVC	TAL DEN
Total/NA	Analysis	410.4		2	2 mL	2 mL	415066	05/16/18 09:28	CCJ	TAL DEN
Total/NA	Analysis	SM 2320B		1			413499	05/02/18 11:14	LPL	TAL DEN
Total/NA	Analysis	SM 2540C		1	25 mL	100 mL	412861	04/26/18 14:33	JAP	TAL DEN
Total/NA	Analysis	SM 5310B		1			414717	05/12/18 04:04	A1D	TAL DEN

Client Sample ID: TRIP BLANK

Lab Sample ID: 280-108811-4
Matrix: Water

Date Collected: 04/19/18 00:00
Date Received: 04/20/18 09:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	20 mL	20 mL	413436	05/02/18 09:31	DPI	TAL DEN

Laboratory References:

TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

TestAmerica Denver
4955 Yarrow Street
Arvada, CO 80002
Phone (303) 736-0100 Fax (303) 431-7171

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: Mike Price, JW	Lab PM: Harrington, Danielle M	Carrier Tracking No(s):	COC No: 280-16295-7618.1
Client Contact: Mr. Mark Franc	Phone: (801) 635-0145	E-Mail: danielle.harrington@testamericainc.com		Page: Page 1 of 1
Company: Waste Management				Job #:
Address: 3683 S. 4975 W.	Due Date Requested:			
City: West Haven	TAT Requested (days):			
State, Zip: UT, 84401				
Phone:	PO #:			
Email: mfranc@wm.com	WO #:			
Project Name: 2769[Tekol Balefill - 7314/2769	Project #: 28003318			
Site:UTAH SEMIANNUAL APRIL 2018	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2SO3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - ph 4-5, Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Total Number of containers	Total Metals 6010B/7470A (D)	Ammonia/TKN (S)	COD/TOC in dup (S)	8260B (A)	TDS/SC CL & SO4/Alkalinity (N)	Special Instructions/Note:
MW-05D	4-19-18	1005				X	X	X	X	X	
MW-07D	4-19-18	1320				X	X	X	X	X	
DUP	4-19-18	1135				X	X	X	X	X	
Trip Blank									X		

280-108811 Chain of Custody

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For ____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:		
Relinquished by: [signature]	Date/Time: 4-19-18 1740	Company: HAL	Received by: [signature]	Date/Time: 4/20/18 0900	Company: Fedex
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No
Custody Seal No.:
Cooler Temperature(s) °C and Other Remarks: 1.3 1.9°C 0.8 Transferred BB 4-20-18

FIELD INFORMATION FORM

WASTE MANAGEMENT

Site Name: Tekoi

Site No.: 2769 Sample Point: MW-05D (Sample ID)

This Waste Management Field Information Form is Required
This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID:

PURGE INFO

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hrs:min)	WATER VOL IN ~~CASING~~ FT ~~(Gallons)~~ mL	ACTUAL VOL PURGED ~~(Gallons)~~ mL	WELL VOLs PURGED
041918	1035	0025	5000	25000	5

Note For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark changes, record field data, below

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment . . . Dedicated. Y or N

Purging Device: C — A-Submersible Pump, B-Peristaltic Pump, C-QED Bladder Pump, D-Bailer, E-Piston Pump, F-Dipper/Bottle

Sampling Device: C

X-Other:

Filter Device: Y or N ~~0.45 µ or~~ µ (circle or fill in)

Filter Type: NA — A-In-line Disposable, B-Pressure, C-Vacuum, X-Other —

Sample Tube Type: D — A-Teflon, B-Stainless Steel, C-PVC, D-Polypropylene, X-Other: —

WELL DATA

Well Elevation (at TOC): 4641.78 (ft/msl)

Depth to Water (DTW) (from TOC): 7518 (ft)

Groundwater Elevation (site datum, from TOC): 4566.6 (ft/msl)

Total Well Depth (from TOC): 852 (ft)

Stick Up (from ground elevation): — (ft)

Casing ID: 2 (in)

Casing Material: PVC

Note Total Well Depth, Stick Up, Casing Id etc are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and Groundwater Elevation must be current.

STABILIZATION DATA (Optional)

Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) (µmhos/cm@25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
1045	1st	7.10	6.35	138	6.59	—	—	7.526
1050	2nd	7.10	6.29	135	4.83	—	—	7.526
1055	3rd	7.12	6.21	135	3.61	—	—	7.526
1100	4th	7.12	6.30	135	3.41	—	—	7.526
Suggested range for 3 consec. readings or note Permit/State requirements:		+/- 0.2	+/- 3%	–	–	+/- 10%	+/- 25 mV	Stabilize

Stabilization Data Fields are Optional *(i.e. complete stabilization readings for parameters required by WM, Site, or State) These fields can be used where four (4) field measurements are required by State/Permit/Site If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. If more fields above are needed, use separate sheet or form.*

FIELD DATA

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (umhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L-ppm)	eH/ORP (mV)	Other: DTW Units ft
041918	7.12	6.30	135	3.41	—	—	7.526

Final Field Readings are required *(i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site.*

FIELD COMMENTS

Sample Appearance: Clear — Odor: None — Color: Clear — Other:

Weather Conditions (required daily, or as conditions change): Direction/Speed: — Outlook: Cloudy, 50°F — Precipitation: Y or N

Specific Comments (including purge/well volume calculations if required):

Sample time 1105.

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):

Date	Name	Signature	Company
4/19/18	Michael Price	[signature]	Hansen, Allen & Luce
4/19/18	Jevin Warren	[signature]	HAL

DISTRIBUTION: WHITE/ORIGINAL - Stays with Sample, YELLOW - Returned to Client. PINK - Field Copy

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TAL-8029 WM (1013) 5/31/2018

FIELD INFORMATION FORM

WASTE MANAGEMENT

Site Name: Tekoi

Site No.: 2769 Sample Point: MW-07D (Sample ID)

This Waste Management Field Information Form is Required
This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID:

PURGE INFO

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hrs:min)	WATER VOL IN ~~CASING~~ P+T ~~(Gallons)~~ mL	ACTUAL VOL PURGED ~~(Gallons)~~ mL	WELL VOLs PURGED
041918	1245	00:30	500	2500	5

Note For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged Mark changes, record field data, below.

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment . . . Dedicated: (Y) or N

Purging Device: C — A-Submersible Pump, B-Peristaltic Pump, C-QED Bladder Pump, D-Bailer, E-Piston Pump, F-Dipper/Bottle

Sampling Device: C

X-Other:

Filter Device: Y or (N) ~~0.45 µ~~ or ____ µ (circle or fill in)

Filter Type: NA — A-In-line Disposable, B-Pressure, C-Vacuum, X-Other ____

Sample Tube Type: D — A-Teflon, B-Stainless Steel, C-PVC, D-Polypropylene, X-Other: ____

WELL DATA

Well Elevation (at TOC): 464686 (ft/msl)

Depth to Water (DTW) (from TOC): 8193 (ft)

Groundwater Elevation (site datum, from TOC): 456493 (ft/msl)

Total Well Depth (from TOC): 1008 (ft)

Stick Up (from ground elevation): ____ (ft)

Casing ID: 2 (in)

Casing Material: PVC

Note: Total Well Depth, Stick Up, Casing Id. etc. are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and Groundwater Elevation must be current

STABILIZATION DATA (Optional)

Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) mS ~~(umhos~~/cm@25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
1300	1st	7.38	5.54	13.6	4.63			81.95
1305	2nd	7.37	5.56	13.6	4.61			81.94
1310	3rd	7.40	5.57	13.8	3.31			81.94
1315	4th	7.41	5.59	13.9	2.76			81.94
Suggested range for 3 consec. readings or note Permit/State requirements.		+/- 0.2	+/- 3%	--	--	+/- 10%	+/- 25 mV	Stabilize

Stabilization Data Fields are Optional *(i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. If more fields above are needed, use separate sheet or form.*

FIELD DATA

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE mS ~~(umhos~~/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L-ppm)	eH/ORP (mV)	Other: DTW Units ft
041918	7.41	5.59	13.9	2.76			81.94

Final Field Readings are required *(i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site*

FIELD COMMENTS

Sample Appearance: Clear Odor: None Color: Clear Other: ____

Weather Conditions (required daily, or as conditions change): Direction/Speed: ____ Outlook: Cloudy, 60°F Precipitation: Y or (N)

Specific Comments (including purge/well volume calculations if required):

Sample taken 1320

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):

Date	Name	Signature	Company
4/19/18	Michael Price	[signature]	Hansen, Allen & Luce
4/19/18	Jevin Warren	[signature]	HAL

DISTRIBUTION: WHITE/ORIGINAL - Stays with Sample, YELLOW - Returned to Client, PINK - Field Copy

13

TAL-8029WM (1013) 5/31/2018

FIELD INFORMATION FORM

WASTE MANAGEMENT

Site Name: Tekoi

Site No.: 2769 Sample Point: DUP (Sample ID)

This Waste Management Field Information Form is Required
This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID:

PURGE INFO

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hrs:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (Gallons)	WELL VOLs PURGED

Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark changes, record field data, below.

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment...Dedicated: Y or N

Filter Device: Y or N 0.45 µ or ____ µ (circle or fill in)

Purging Device ____ A-Submersible Pump B-Peristaltic Pump C-QED Bladder Pump D-Bailer E-Piston Pump F-Dipper/Bottle

Filter Type: ____ A-In-line Disposable B-Pressure C-Vacuum X-Other ____

Sampling Device ____

X-Other: ____

Sample Tube Type: ____ A-Teflon B-Stainless Steel C-PVC D-Polypropylene X-Other: ____

WELL DATA

Well Elevation (at TOC) ____ (ft/msl)

Depth to Water (DTW) (from TOC) ____ (ft)

Groundwater Elevation (site datum, from TOC) ____ (ft/msl)

Total Well Depth (from TOC) ____ (ft)

Stick Up (from ground elevation) ____ (ft)

Casing ID ____ (in)

Casing Material ____

Note Total Well Depth, Stick Up, Casing Id. etc. are optional and can be from historical data, unless required by Site/Permit Well Elevation, DTW, and Groundwater Elevation must be current

STABILIZATION DATA (Optional)

Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) (µmhos/cm@25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
	1st	1st	1st					
	2nd	2nd	2nd					
	3rd	3rd	3rd					
	4th	4th	4th					
Suggested range for 3 consec. readings or note Permit/State requirements:		+/- 0.2	+/- 3%	–	–	+/- 10%	+/- 25 mV	Stabilize

Stabilization Data Fields are Optional *(i.e. complete stabilization readings for parameters required by WM, Site, or State) These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site* ***If more fields above are needed, use separate sheet or form***

FIELD DATA

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (umhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L-ppm)	eH/ORP (mV)	Other: ____ Units ____

Final Field Readings are required *(i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site*

FIELD COMMENTS

Sample Appearance: ____ Odor: ____ Color: ____ Other: ____

Weather Conditions (required daily, or as conditions change): Direction/Speed: ____ Outlook: ____ Precipitation: Y or N

Specific Comments (including purge/well volume calculations if required):

Sample taken from MW-5D at 1135.
See field information form for MW-5D.

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):

Date	Name	Signature	Company
4/19/18	Michael Pike	[signature]	Hansen, Allen + Luce
4/19/18	Jevin Warren	[signature]	HAL

DISTRIBUTION: WHITE/ORIGINAL - Stays with Sample, YELLOW - Returned to Client, PINK - Field Copy

TAL-8029 WM (10/13) 3/31/2018

FIELD INFORMATION FORM

WASTE MANAGEMENT

Site Name: Tekoi

Site No.: 2769 Sample Point: MW-055 (Sample ID)

This Waste Management Field Information Form is Required
This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID.

PURGE INFO

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hrs:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (Gallons)	WELL VOLs PURGED
041918	1035				

Note For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark changes, record field data, below

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment . . . Dedicated: Y or N

Filter Device: Y or N 0.45 µ or ____ µ (circle or fill in)

Purging Device ____ A-Submersible Pump B-Peristaltic Pump C-QED Bladder Pump D-Bailer E-Piston Pump F-Dipper/Bottle

Filter Type: ____ A-In-line Disposable B-Pressure C-Vacuum X-Other ____

Sampling Device ____

X-Other: ____

Sample Tube Type: ____ A-Teflon B-Stainless Steel C-PVC D-Polypropylene X-Other: ____

WELL DATA

Well Elevation (at TOC) ____ (ft/msl)

Depth to Water (DTW) (from TOC) ____ (ft)

Groundwater Elevation (site datum, from TOC) ____ (ft/msl)

Total Well Depth (from TOC) ____ (ft)

Stick Up (from ground elevation) ____ (ft)

Casing ID ____ (in)

Casing Material ____

Note: Total Well Depth, Stick Up, Casing Id etc are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and Groundwater Elevation must be current.

STABILIZATION DATA (Optional)

Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) (µmhos/cm@25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
	1st	1st	1st					
	2nd	2nd	2nd					
	3rd	3rd	3rd					
	4th	4th	4th					
Suggested range for 3 consec. readings or note Permit/State requirements:		+/- 0.2	+/- 3%	--	--	+/- 10%	+/- 25 mV	Stabilize

Stabilization Data Fields are Optional *(i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. If more fields above are needed, use separate sheet or form.*

FIELD DATA

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (umhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L-ppm)	eH/ORP (mV)	Other: ____ Units ____

Final Field Readings are required *(i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site.*

Sample Appearance: ____ Odor: ____ Color: ____ Other: ____

Weather Conditions (required daily, or as conditions change): Direction/Speed: ____ Outlook: ____ Precipitation: Y or N

Specific Comments (including purge/well volume calculations if required):

FIELD COMMENTS

Well dry at TD 60.7'
No sample collected

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):

Date	Name	Signature	Company
4/19/18	Michael Price	[signature]	Hansen Allen Luce
4/19/18	Jevin Warren	[signature]	HAL

DISTRIBUTION: WHITE/ORIGINAL - Stays with Sample, YELLOW - Returned to Client, PINK - Field Copy

TAL-8029 (0108) 5/31/2018

13

FIELD INFORMATION FORM

WASTE MANAGEMENT

Site Name: Tekoi

Site No.: 2769 Sample Point: MW-065 (Sample ID)

This Waste Management Field Information Form is Required
This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID:

PURGE INFO

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hrs:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (Gallons)	WELL VOLs PURGED
041918	0835				

Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark changes, record field data, below.

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment...Dedicated: Y or N

Filter Device: Y or N 0.45 µ or ____ µ (circle or fill in)

Purging Device ____ A-Submersible Pump B-Peristaltic Pump C-QED Bladder Pump D-Bailer E-Piston Pump F-Dipper/Bottle

Filter Type: ____ A-In-line Disposable B-Pressure C-Vacuum X-Other ____

Sampling Device ____

X-Other: ____

Sample Tube Type: ____ A-Teflon B-Stainless Steel C-PVC D-Polypropylene X-Other: ____

WELL DATA

Well Elevation (at TOC) ____ (ft/msl)

Depth to Water (DTW) (from TOC) ____ (ft)

Groundwater Elevation (site datum, from TOC) ____ (ft/msl)

Total Well Depth (from TOC) ____ (ft)

Stick Up (from ground elevation) ____ (ft)

Casing ID ____ (in)

Casing Material ____

Note: Total Well Depth, Stick Up, Casing Id etc. are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and Groundwater Elevation must be current.

STABILIZATION DATA (Optional)

Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) (µmhos/cm@25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
	1st	1st						
	2nd	2nd						
	3rd	3rd						
	4th	4th						
Suggested range for 3 consec. readings or note Permit/State requirements:		+/- 0.2	+/- 3%	–	–	+/- 10%	+/- 25 mV	Stabilize

Stabilization Data Fields are Optional *(i.e. complete stabilization readings for parameters required by WM, Site, or State) These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. If more fields above are needed, use separate sheet or form.*

FIELD DATA

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (umhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L-ppm)	eH/ORP (mV)	Other: ____ Units ____

Final Field Readings are required *(i.e record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site.*

Sample Appearance: ____ Odor: ____ Color: ____ Other: ____

Weather Conditions (required daily, or as conditions change): Direction/Speed: ____ Outlook: ____ Precipitation: Y or N

FIELD COMMENTS

Specific Comments (including purge/well volume calculations if required):

Well dry at TD 48.3'

No Sample collected

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):

Date	Name	Signature	Company
4/19/18	Michael Price	[signature]	Hansen Allen & Luce
4/19/18	Jevin Warren	[signature]	HAL

DISTRIBUTION: WHITE/ORIGINAL - Stays with Sample, YELLOW - Returned to Client, PINK - Field Copy

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TAL-8029 WM (1013) 5/31/2018

Login Sample Receipt Checklist

Client: Waste Management

Job Number: 280-108811-1

Login Number: 108811
List Number: 1
Creator: Burtness, Benjamin W

List Source: TestAmerica Denver

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	N/A	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time (Excluding tests with immediate HTs)..	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Sampling Company provided.	True	
Samples received within 48 hours of sampling.	True	
Samples requiring field filtration have been filtered in the field.	True	
Chlorine Residual checked.	N/A	

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Denver
4955 Yarrow Street
Arvada, CO 80002
Tel: (303)736-0100

received
5-29-18

TestAmerica Job ID: 280-108812-1
Client Project/Site: 2769|Tekoi Balefill - 7314
Sampling Event: Semiannual April

For:
Waste Management
3683 S. 4975 W.
West Haven, Utah 84401

Attn: Mr. Mark Franc

Danielle Harrington

Authorized for release by:
5/29/2018 9:07:19 AM

Danielle Harrington, Project Manager II
(303)736-0176
danielle.harrington@testamericainc.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

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The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Definitions/Glossary

Client: Waste Management
Project/Site: 2769|Tekoi Balefill - 7314

TestAmerica Job ID: 280-108812-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
F1	MS and/or MSD Recovery is outside acceptance limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Metals

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.

General Chemistry

Qualifier	Qualifier Description
F1	MS and/or MSD Recovery is outside acceptance limits.
F2	MS/MSD RPD exceeds control limits

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

CASE NARRATIVE

Client: Waste Management

Project: 2769|Tekoi Balefill

Report Number: 280-108812-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

This report may include reporting limits (RLs) less than TestAmerica's standard reporting limit. The reported sample results and associated reporting limits are being used specifically to meet the needs of this project. Note that data are not normally reported to these levels without qualification because they are inherently less reliable and potentially less defensible than required by the latest industry standards.

This submission may contain field data obtained by the sampler. The methods referenced in this submission for the field data results may not be the methods used to obtain the field data by the sampler.

RECEIPT
The samples were received on 4/20/2018 ; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the coolers at receipt time were 1.3° C and 1.9° C.

All sample bottles were received in acceptable condition.

HOLDING TIMES
All Holding Times were met.

TRIP BLANKS
Acetone was detected in the Trip Blank sample at a level above the requested reporting limit but was not detected in any of the associated field samples. No corrective action was performed, as there is no impact on data usability.

METHOD BLANKS
Total Kjeldahl Nitrogen was detected in the method blank above the project established reporting limit, however, the requested reporting limit is below TestAmerica's standard reporting limit and, therefore, no corrective action has been taken for this anomaly. It must be noted that results reported below TestAmerica's standard reporting limits may result in false positive/false negative results, less accurate quantitation and potential misidentification at the lower concentrations.

All other Method Blanks were within the acceptance limits.

LABORATORY CONTROL SAMPLES (LCS)
All Laboratory Control Samples were within the acceptance limits.

MATRIX SPIKE (MS) and MATRIX SPIKE DUPLICATES (MSD)
The accuracy and precision of the Calcium, Sodium and Magnesium method 6010B MS/MSD performed on a laboratory generated sample could not be reliably evaluated, as the concentrations present in the parent sample were 4 times greater than the matrix spike concentration. The acceptable LCS analysis data indicated that the analytical system was operating within control; therefore, corrective action is deemed unnecessary.

Job ID: 280-108812-1 (Continued)

Laboratory: TestAmerica Denver (Continued)

Laboratory generated MS/MSD analysis data have been provided. The MS/MSD for Styrene method 8260B exhibited spike compound recoveries outside the QC limits. The acceptable LCS analysis data indicated that the analytical system was operating within control; therefore, corrective action is deemed unnecessary.

Laboratory generated MS/MSD analysis data have been provided. The MS/MSD for Chemical Oxygen Demand (COD) method 410.4 exhibited spike compound recoveries outside the QC limits. The RPD limit was also outside QC limits. The acceptable LCS/LCSD analysis data indicated that the analytical system was operating within control; therefore, corrective action is deemed unnecessary.

All other Matrix Spike and Matrix Spike Duplicates were within the acceptance limits.

GENERAL CHEMISTRY

Samples MW-06D was analyzed at a dilution for variou analyses due to matrix interferences or high analyte concentrations. The reporting limits have been adjusted accordingly.

Detection Summary

Client: Waste Management
Project/Site: 2769|Tekoi Balefill - 7314

TestAmerica Job ID: 280-108812-1

5

Client Sample ID: MW-06D — Lab Sample ID: 280-108812-1

Analyte	Result	Qualifier	NONE	NONE	Unit	Dil Fac	D	Method	Prep Type
Well Elevation	4621.69				ft/msl	1		Field Sampling	Total/NA
Depth to water	50.09				ft	1		Field Sampling	Total/NA
Groundwater Elevation	4571.6				ft/msl	1		Field Sampling	Total/NA
Field pH	7.26				SU	1		Field Sampling	Total/NA
Field Conductivity	7.96				umhos/cm	1		Field Sampling	Total/NA
Field Temperature	11.4				Degrees C	1		Field Sampling	Total/NA
Field Turbidity	3.40				NTU	1		Field Sampling	Total/NA

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	28		10		ug/L	1		6010B	Total Recoverable
Calcium	320000		200		ug/L	1		6010B	Total Recoverable
Iron	200		100		ug/L	1		6010B	Total Recoverable
Magnesium	310000		200		ug/L	1		6010B	Total Recoverable
Potassium	39000		3000		ug/L	1		6010B	Total Recoverable
Sodium	1600000		1000		ug/L	1		6010B	Total Recoverable
Chloride	3000		60		mg/L	20		300.0	Total/NA
Sulfate	1500		100		mg/L	20		300.0	Total/NA
Total Alkalinity	350		5.0		mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	350		5.0		mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	6700		40		mg/L	1		SM 2540C	Total/NA
TOC Result 1	1.5		1.0		mg/L	1		SM 5310B	Total/NA
TOC Result 2	1.6		1.0		mg/L	1		SM 5310B	Total/NA

Client Sample ID: TRIP BLANK — Lab Sample ID: 280-108812-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	13		10		ug/L	1		8260B	Total/NA

This Detection Summary does not include radiochemical test results.

Method Summary

Client: Waste Management
Project/Site: 2769|Tekoi Balefill - 7314

TestAmerica Job ID: 280-108812-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL DEN
6010B	Metals (ICP)	SW846	TAL DEN
7470A	Mercury (CVAA)	SW846	TAL DEN
300.0	Anions, Ion Chromatography	MCAWW	TAL DEN
350.1	Nitrogen, Ammonia	MCAWW	TAL DEN
351.2	Nitrogen, Total Kjeldahl	MCAWW	TAL DEN
410.4	COD	MCAWW	TAL DEN
SM 2320B	Alkalinity	SM	TAL DEN
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL DEN
SM 5310B	Organic Carbon, Total (TOC)	SM	TAL DEN
Field Sampling	Field Sampling	EPA	TAL DEN
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	TAL DEN
351.2	Nitrogen, Total Kjeldahl	MCAWW	TAL DEN
5030B	Purge and Trap	SW846	TAL DEN
7470A	Preparation, Mercury	SW846	TAL DEN

Protocol References:

EPA = US Environmental Protection Agency
MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.
SM = "Standard Methods For The Examination Of Water And Wastewater"
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

Sample Summary

Client: Waste Management
Project/Site: 2769|Tekoi Balefill - 7314

TestAmerica Job ID: 280-108812-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
280-108812-1	MW-06D	Water	04/19/18 09:10	04/20/18 09:00
280-108812-2	TRIP BLANK	Water	04/19/18 00:00	04/20/18 09:00

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Method: 8260B - Volatile Organic Compounds (GC/MS)

Client Sample ID: MW-06D
Date Collected: 04/19/18 09:10
Date Received: 04/20/18 09:00

Lab Sample ID: 280-108812-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		1.0		ug/L			05/02/18 14:32	1
1,1,1-Trichloroethane	ND		1.0		ug/L			05/02/18 14:32	1
1,1,2,2-Tetrachloroethane	ND		1.0		ug/L			05/02/18 14:32	1
1,1,2-Trichloroethane	ND		1.0		ug/L			05/02/18 14:32	1
1,1-Dichloroethane	ND		1.0		ug/L			05/02/18 14:32	1
1,1-Dichloroethene	ND		1.0		ug/L			05/02/18 14:32	1
1,2,3-Trichloropropane	ND		2.5		ug/L			05/02/18 14:32	1
1,2-Dibromo-3-Chloropropane	ND		5.0		ug/L			05/02/18 14:32	1
1,2-Dibromoethane	ND		1.0		ug/L			05/02/18 14:32	1
1,2-Dichlorobenzene	ND		1.0		ug/L			05/02/18 14:32	1
1,2-Dichloroethane	ND		1.0		ug/L			05/02/18 14:32	1
1,2-Dichloropropane	ND		1.0		ug/L			05/02/18 14:32	1
1,4-Dichlorobenzene	ND		1.0		ug/L			05/02/18 14:32	1
2-Butanone (MEK)	ND		6.0		ug/L			05/02/18 14:32	1
2-Hexanone	ND		5.0		ug/L			05/02/18 14:32	1
4-Methyl-2-pentanone (MIBK)	ND		5.0		ug/L			05/02/18 14:32	1
Acetone	ND		10		ug/L			05/02/18 14:32	1
Acrolein	ND		20		ug/L			05/02/18 14:32	1
Acrylonitrile	ND		20		ug/L			05/02/18 14:32	1
Benzene	ND		1.0		ug/L			05/02/18 14:32	1
Bromodichloromethane	ND		1.0		ug/L			05/02/18 14:32	1
Bromoform	ND		1.0		ug/L			05/02/18 14:32	1
Bromomethane	ND		2.0		ug/L			05/02/18 14:32	1
Carbon disulfide	ND		2.0		ug/L			05/02/18 14:32	1
Carbon tetrachloride	ND		1.0		ug/L			05/02/18 14:32	1
Chlorobenzene	ND		1.0		ug/L			05/02/18 14:32	1
Chlorobromomethane	ND		1.0		ug/L			05/02/18 14:32	1
Chlorodibromomethane	ND		1.0		ug/L			05/02/18 14:32	1
Chloroethane	ND		2.0		ug/L			05/02/18 14:32	1
Chloroform	ND		1.0		ug/L			05/02/18 14:32	1
Chloromethane	ND		2.0		ug/L			05/02/18 14:32	1
cis-1,2-Dichloroethene	ND		1.0		ug/L			05/02/18 14:32	1
cis-1,3-Dichloropropene	ND		1.0		ug/L			05/02/18 14:32	1
Dibromomethane	ND		1.0		ug/L			05/02/18 14:32	1
Ethylbenzene	ND		1.0		ug/L			05/02/18 14:32	1
Iodomethane	ND		1.0		ug/L			05/02/18 14:32	1
Methylene Chloride	ND		2.0		ug/L			05/02/18 14:32	1
Styrene	ND		1.0		ug/L			05/02/18 14:32	1
Tetrachloroethene	ND		1.0		ug/L			05/02/18 14:32	1
Toluene	ND		1.0		ug/L			05/02/18 14:32	1
trans-1,2-Dichloroethene	ND		1.0		ug/L			05/02/18 14:32	1
trans-1,3-Dichloropropene	ND		3.0		ug/L			05/02/18 14:32	1
trans-1,4-Dichloro-2-butene	ND		3.0		ug/L			05/02/18 14:32	1
Trichloroethene	ND		1.0		ug/L			05/02/18 14:32	1
Trichlorofluoromethane	ND		2.0		ug/L			05/02/18 14:32	1
Vinyl acetate	ND		3.0		ug/L			05/02/18 14:32	1
Vinyl chloride	ND		1.0		ug/L			05/02/18 14:32	1
Xylenes, Total	ND		2.0		ug/L			05/02/18 14:32	1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	108		70 - 127		05/02/18 14:32	1
4-Bromofluorobenzene (Surr)	98		78 - 120		05/02/18 14:32	1
Dibromofluoromethane (Surr)	101		77 - 120		05/02/18 14:32	1
Toluene-d8 (Surr)	98		80 - 125		05/02/18 14:32	1

Client Sample ID: TRIP BLANK
Date Collected: 04/19/18 00:00
Date Received: 04/20/18 09:00

Lab Sample ID: 280-108812-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		1.0		ug/L			05/02/18 09:51	1
1,1,1-Trichloroethane	ND		1.0		ug/L			05/02/18 09:51	1
1,1,2,2-Tetrachloroethane	ND		1.0		ug/L			05/02/18 09:51	1
1,1,2-Trichloroethane	ND		1.0		ug/L			05/02/18 09:51	1
1,1-Dichloroethane	ND		1.0		ug/L			05/02/18 09:51	1
1,1-Dichloroethene	ND		1.0		ug/L			05/02/18 09:51	1
1,2,3-Trichloropropane	ND		2.5		ug/L			05/02/18 09:51	1
1,2-Dibromo-3-Chloropropane	ND		5.0		ug/L			05/02/18 09:51	1
1,2-Dibromoethane	ND		1.0		ug/L			05/02/18 09:51	1
1,2-Dichlorobenzene	ND		1.0		ug/L			05/02/18 09:51	1
1,2-Dichloroethane	ND		1.0		ug/L			05/02/18 09:51	1
1,2-Dichloropropane	ND		1.0		ug/L			05/02/18 09:51	1
1,4-Dichlorobenzene	ND		1.0		ug/L			05/02/18 09:51	1
2-Butanone (MEK)	ND		6.0		ug/L			05/02/18 09:51	1
2-Hexanone	ND		5.0		ug/L			05/02/18 09:51	1
4-Methyl-2-pentanone (MIBK)	ND		5.0		ug/L			05/02/18 09:51	1
Acetone	13		10		ug/L			05/02/18 09:51	1
Acrolein	ND		20		ug/L			05/02/18 09:51	1
Acrylonitrile	ND		20		ug/L			05/02/18 09:51	1
Benzene	ND		1.0		ug/L			05/02/18 09:51	1
Bromodichloromethane	ND		1.0		ug/L			05/02/18 09:51	1
Bromoform	ND		1.0		ug/L			05/02/18 09:51	1
Bromomethane	ND		2.0		ug/L			05/02/18 09:51	1
Carbon disulfide	ND		2.0		ug/L			05/02/18 09:51	1
Carbon tetrachloride	ND		1.0		ug/L			05/02/18 09:51	1
Chlorobenzene	ND		1.0		ug/L			05/02/18 09:51	1
Chlorobromomethane	ND		1.0		ug/L			05/02/18 09:51	1
Chlorodibromomethane	ND		1.0		ug/L			05/02/18 09:51	1
Chloroethane	ND		2.0		ug/L			05/02/18 09:51	1
Chloroform	ND		1.0		ug/L			05/02/18 09:51	1
Chloromethane	ND		2.0		ug/L			05/02/18 09:51	1
cis-1,2-Dichloroethene	ND		1.0		ug/L			05/02/18 09:51	1
cis-1,3-Dichloropropene	ND		1.0		ug/L			05/02/18 09:51	1
Dibromomethane	ND		1.0		ug/L			05/02/18 09:51	1
Ethylbenzene	ND		1.0		ug/L			05/02/18 09:51	1
Iodomethane	ND		1.0		ug/L			05/02/18 09:51	1
Methylene Chloride	ND		2.0		ug/L			05/02/18 09:51	1
Styrene	ND		1.0		ug/L			05/02/18 09:51	1
Tetrachloroethene	ND		1.0		ug/L			05/02/18 09:51	1
Toluene	ND		1.0		ug/L			05/02/18 09:51	1
trans-1,2-Dichloroethene	ND		1.0		ug/L			05/02/18 09:51	1
trans-1,3-Dichloropropene	ND		3.0		ug/L			05/02/18 09:51	1
trans-1,4-Dichloro-2-butene	ND		3.0		ug/L			05/02/18 09:51	1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Client Sample ID: TRIP BLANK
Date Collected: 04/19/18 00:00
Date Received: 04/20/18 09:00

Lab Sample ID: 280-108812-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	ND		1.0		ug/L			05/02/18 09:51	1
Trichlorofluoromethane	ND		2.0		ug/L			05/02/18 09:51	1
Vinyl acetate	ND		3.0		ug/L			05/02/18 09:51	1
Vinyl chloride	ND		1.0		ug/L			05/02/18 09:51	1
Xylenes, Total	ND		2.0		ug/L			05/02/18 09:51	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*95*		*70 - 127*		*05/02/18 09:51*	*1*
4-Bromofluorobenzene (Surr)	*95*		*78 - 120*		*05/02/18 09:51*	*1*
Dibromofluoromethane (Surr)	*95*		*77 - 120*		*05/02/18 09:51*	*1*
Toluene-d8 (Surr)	*96*		*80 - 125*		*05/02/18 09:51*	*1*

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Method: 6010B - Metals (ICP) - Total Recoverable

Client Sample ID: MW-06D
Date Collected: 04/19/18 09:10
Date Received: 04/20/18 09:00

Lab Sample ID: 280-108812-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		15		ug/L		04/30/18 17:00	05/03/18 13:33	1
Barium	**28**		10		ug/L		04/30/18 17:00	05/01/18 21:29	1
Beryllium	ND		1.0		ug/L		04/30/18 17:00	05/01/18 21:29	1
Cadmium	ND		5.0		ug/L		04/30/18 17:00	05/01/18 21:29	1
Cobalt	ND		10		ug/L		04/30/18 17:00	05/01/18 21:29	1
Chromium	ND		10		ug/L		04/30/18 17:00	05/01/18 21:29	1
Copper	ND		15		ug/L		04/30/18 17:00	05/01/18 21:29	1
Calcium	**320000**		200		ug/L		04/30/18 17:00	05/01/18 21:29	1
Nickel	ND		40		ug/L		04/30/18 17:00	05/01/18 21:29	1
Lead	ND		9.0		ug/L		04/30/18 17:00	05/01/18 21:29	1
Antimony	ND		10		ug/L		04/30/18 17:00	05/01/18 21:29	1
Selenium	ND		15		ug/L		04/30/18 17:00	05/01/18 21:29	1
Iron	**200**		100		ug/L		04/30/18 17:00	05/01/18 21:29	1
Thallium	ND		15		ug/L		04/30/18 17:00	05/01/18 21:29	1
Vanadium	ND		10		ug/L		04/30/18 17:00	05/01/18 21:29	1
Zinc	ND		20		ug/L		04/30/18 17:00	05/03/18 13:33	1
Magnesium	**310000**		200		ug/L		04/30/18 17:00	05/01/18 21:29	1
Silver	ND		10		ug/L		04/30/18 17:00	05/01/18 21:29	1
Manganese	ND		10		ug/L		04/30/18 17:00	05/01/18 21:29	1
Potassium	**39000**		3000		ug/L		04/30/18 17:00	05/01/18 21:29	1
Sodium	**1600000**		1000		ug/L		04/30/18 17:00	05/01/18 21:29	1

Method: 7470A - Mercury (CVAA)

Client Sample ID: MW-06D
Date Collected: 04/19/18 09:10
Date Received: 04/20/18 09:00

Lab Sample ID: 280-108812-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		05/02/18 12:21	05/02/18 19:09	1

Client Sample Results

Client: Waste Management
Project/Site: 2769|Tekoi Balefill - 7314

TestAmerica Job ID: 280-108812-1

General Chemistry

Client Sample ID: MW-06D
Date Collected: 04/19/18 09:10
Date Received: 04/20/18 09:00

Lab Sample ID: 280-108812-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**3000**		60		mg/L			05/06/18 19:24	20
Sulfate	**1500**		100		mg/L			05/06/18 19:24	20
Ammonia as N	ND		0.20		mg/L			05/16/18 14:42	1
Total Kjeldahl Nitrogen	ND		0.50		mg/L		05/01/18 18:28	05/03/18 20:03	1
Chemical Oxygen Demand	ND		100		mg/L			05/16/18 09:28	5
Total Alkalinity	**350**		5.0		mg/L			05/03/18 21:13	1
Bicarbonate Alkalinity as CaCO3	**350**		5.0		mg/L			05/03/18 21:13	1
Carbonate Alkalinity as CaCO3	ND		5.0		mg/L			05/03/18 21:13	1
Total Dissolved Solids	**6700**		40		mg/L			04/26/18 14:33	1
TOC Result 1	**1.5**		1.0		mg/L			05/12/18 02:52	1
TOC Result 2	**1.6**		1.0		mg/L			05/12/18 02:52	1

Method: Field Sampling - Field Sampling

Client Sample ID: MW-06D
Date Collected: 04/19/18 09:10
Date Received: 04/20/18 09:00

Lab Sample ID: 280-108812-1
Matrix: Water

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Well Elevation	**4621.69**				ft/msl			04/19/18 09:10	1
Depth to water	**50.09**				ft			04/19/18 09:10	1
Groundwater Elevation	**4571.6**				ft/msl			04/19/18 09:10	1
Field pH	**7.26**				SU			04/19/18 09:10	1
Field Conductivity	**7.96**				umhos/cm			04/19/18 09:10	1
Field Temperature	**11.4**				Degrees C			04/19/18 09:10	1
Field Turbidity	**3.40**				NTU			04/19/18 09:10	1

Surrogate Summary

Client: Waste Management
Project/Site: 2769|Tekoi Balefill - 7314

TestAmerica Job ID: 280-108812-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(70-127)	(78-120)	(77-120)	(80-125)
280-108811-E-1 MS	Matrix Spike	99	91	94	98
280-108811-E-1 MSD	Matrix Spike Duplicate	99	93	95	98
280-108812-1	MW-06D	108	98	101	98
280-108812-2	TRIP BLANK	95	95	95	96
LCS 280-413436/4	Lab Control Sample	100	93	97	100
MB 280-413436/6	Method Blank	98	94	97	95

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

QC Sample Results

Client: Waste Management
Project/Site: 2769|Tekoi Balefill - 7314

TestAmerica Job ID: 280-108812-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 280-413436/6
Matrix: Water
Analysis Batch: 413436

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		1.0		ug/L			05/02/18 09:00	1
1,1,1-Trichloroethane	ND		1.0		ug/L			05/02/18 09:00	1
1,1,2,2-Tetrachloroethane	ND		1.0		ug/L			05/02/18 09:00	1
1,1,2-Trichloroethane	ND		1.0		ug/L			05/02/18 09:00	1
1,1-Dichloroethane	ND		1.0		ug/L			05/02/18 09:00	1
1,1-Dichloroethene	ND		1.0		ug/L			05/02/18 09:00	1
1,2,3-Trichloropropane	ND		2.5		ug/L			05/02/18 09:00	1
1,2-Dibromo-3-Chloropropane	ND		5.0		ug/L			05/02/18 09:00	1
1,2-Dibromoethane	ND		1.0		ug/L			05/02/18 09:00	1
1,2-Dichlorobenzene	ND		1.0		ug/L			05/02/18 09:00	1
1,2-Dichloroethane	ND		1.0		ug/L			05/02/18 09:00	1
1,2-Dichloropropane	ND		1.0		ug/L			05/02/18 09:00	1
1,4-Dichlorobenzene	ND		1.0		ug/L			05/02/18 09:00	1
2-Butanone (MEK)	ND		6.0		ug/L			05/02/18 09:00	1
2-Hexanone	ND		5.0		ug/L			05/02/18 09:00	1
4-Methyl-2-pentanone (MIBK)	ND		5.0		ug/L			05/02/18 09:00	1
Acetone	ND		10		ug/L			05/02/18 09:00	1
Acrolein	ND		20		ug/L			05/02/18 09:00	1
Acrylonitrile	ND		20		ug/L			05/02/18 09:00	1
Benzene	ND		1.0		ug/L			05/02/18 09:00	1
Bromodichloromethane	ND		1.0		ug/L			05/02/18 09:00	1
Bromoform	ND		1.0		ug/L			05/02/18 09:00	1
Bromomethane	ND		2.0		ug/L			05/02/18 09:00	1
Carbon disulfide	ND		2.0		ug/L			05/02/18 09:00	1
Carbon tetrachloride	ND		1.0		ug/L			05/02/18 09:00	1
Chlorobenzene	ND		1.0		ug/L			05/02/18 09:00	1
Chlorobromomethane	ND		1.0		ug/L			05/02/18 09:00	1
Chlorodibromomethane	ND		1.0		ug/L			05/02/18 09:00	1
Chloroethane	ND		2.0		ug/L			05/02/18 09:00	1
Chloroform	ND		1.0		ug/L			05/02/18 09:00	1
Chloromethane	ND		2.0		ug/L			05/02/18 09:00	1
cis-1,2-Dichloroethene	ND		1.0		ug/L			05/02/18 09:00	1
cis-1,3-Dichloropropene	ND		1.0		ug/L			05/02/18 09:00	1
Dibromomethane	ND		1.0		ug/L			05/02/18 09:00	1
Ethylbenzene	ND		1.0		ug/L			05/02/18 09:00	1
Iodomethane	ND		1.0		ug/L			05/02/18 09:00	1
Methylene Chloride	ND		2.0		ug/L			05/02/18 09:00	1
Styrene	ND		1.0		ug/L			05/02/18 09:00	1
Tetrachloroethene	ND		1.0		ug/L			05/02/18 09:00	1
Toluene	ND		1.0		ug/L			05/02/18 09:00	1
trans-1,2-Dichloroethene	ND		1.0		ug/L			05/02/18 09:00	1
trans-1,3-Dichloropropene	ND		3.0		ug/L			05/02/18 09:00	1
trans-1,4-Dichloro-2-butene	ND		3.0		ug/L			05/02/18 09:00	1
Trichloroethene	ND		1.0		ug/L			05/02/18 09:00	1
Trichlorofluoromethane	ND		2.0		ug/L			05/02/18 09:00	1
Vinyl acetate	ND		3.0		ug/L			05/02/18 09:00	1
Vinyl chloride	ND		1.0		ug/L			05/02/18 09:00	1
Xylenes, Total	ND		2.0		ug/L			05/02/18 09:00	1

QC Sample Results

Client: Waste Management
Project/Site: 2769|Tekoi Balefill - 7314

TestAmerica Job ID: 280-108812-1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	98		70 - 127		05/02/18 09:00	1
4-Bromofluorobenzene (Surr)	94		78 - 120		05/02/18 09:00	1
Dibromofluoromethane (Surr)	97		77 - 120		05/02/18 09:00	1
Toluene-d8 (Surr)	95		80 - 125		05/02/18 09:00	1

Lab Sample ID: LCS 280-413436/4
Matrix: Water
Analysis Batch: 413436

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	5.00	5.03		ug/L		101	65 - 135
1,1,1-Trichloroethane	5.00	5.05		ug/L		101	65 - 135
1,1,2,2-Tetrachloroethane	5.00	4.51		ug/L		90	58 - 135
1,1,2-Trichloroethane	5.00	4.78		ug/L		96	64 - 135
1,1-Dichloroethane	5.00	4.91		ug/L		98	65 - 135
1,1-Dichloroethene	5.00	5.20		ug/L		104	65 - 136
1,2,3-Trichloropropane	5.00	5.06		ug/L		101	65 - 135
1,2-Dibromo-3-Chloropropane	5.00	3.97	J	ug/L		79	57 - 135
1,2-Dibromoethane	5.00	4.75		ug/L		95	65 - 135
1,2-Dichlorobenzene	5.00	4.76		ug/L		95	65 - 135
1,2-Dichloroethane	5.00	4.73		ug/L		95	65 - 135
1,2-Dichloropropane	5.00	4.86		ug/L		97	64 - 135
1,4-Dichlorobenzene	5.00	4.72		ug/L		94	65 - 135
2-Butanone (MEK)	20.0	18.9		ug/L		94	44 - 177
2-Hexanone	20.0	17.0		ug/L		85	57 - 139
4-Methyl-2-pentanone (MIBK)	20.0	18.3		ug/L		91	60 - 150
Acetone	20.0	20.4		ug/L		102	39 - 156
Acrolein	50.0	54.2		ug/L		108	36 - 147
Acrylonitrile	50.0	47.3		ug/L		95	56 - 135
Benzene	5.00	4.95		ug/L		99	65 - 135
Bromodichloromethane	5.00	4.69		ug/L		94	65 - 135
Bromoform	5.00	4.61		ug/L		92	62 - 135
Bromomethane	5.00	5.59		ug/L		112	45 - 135
Carbon disulfide	5.00	5.05		ug/L		101	55 - 143
Carbon tetrachloride	5.00	5.00		ug/L		100	65 - 135
Chlorobenzene	5.00	4.87		ug/L		97	65 - 135
Chlorobromomethane	5.00	4.86		ug/L		97	65 - 135
Chlorodibromomethane	5.00	4.84		ug/L		97	65 - 135
Chloroethane	5.00	5.74		ug/L		115	46 - 136
Chloroform	5.00	4.94		ug/L		99	65 - 135
Chloromethane	5.00	5.37		ug/L		107	34 - 145
cis-1,2-Dichloroethene	5.00	4.89		ug/L		98	65 - 135
cis-1,3-Dichloropropene	5.00	4.91		ug/L		98	65 - 135
Dibromomethane	5.00	4.59		ug/L		92	65 - 135
Ethylbenzene	5.00	4.98		ug/L		100	65 - 135
Iodomethane	5.00	5.28		ug/L		106	65 - 142
Methylene Chloride	5.00	5.11		ug/L		102	54 - 141
Styrene	5.00	4.66		ug/L		93	65 - 135
Tetrachloroethene	5.00	4.88		ug/L		98	65 - 135
Toluene	5.00	4.85		ug/L		97	65 - 135
trans-1,2-Dichloroethene	5.00	5.19		ug/L		104	65 - 135
trans-1,3-Dichloropropene	5.00	4.64		ug/L		93	65 - 135
trans-1,4-Dichloro-2-butene	5.00	4.65		ug/L		93	53 - 135
Trichloroethene	5.00	4.99		ug/L		100	65 - 135

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 280-413436/4
Matrix: Water
Analysis Batch: 413436

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Trichlorofluoromethane	5.00	4.15		ug/L		83	53 - 137
Vinyl acetate	10.0	10.2		ug/L		102	11 - 187
Vinyl chloride	5.00	5.58		ug/L		112	40 - 137
Xylenes, Total	10.0	10.3		ug/L		103	65 - 135

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*100*		*70 - 127*
4-Bromofluorobenzene (Surr)	*93*		*78 - 120*
Dibromofluoromethane (Surr)	*97*		*77 - 120*
Toluene-d8 (Surr)	*100*		*80 - 125*

Lab Sample ID: 280-108811-E-1 MS
Matrix: Water
Analysis Batch: 413436

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	ND		5.00	5.07		ug/L		101	65 - 135
1,1,1-Trichloroethane	ND		5.00	5.23		ug/L		105	65 - 135
1,1,2,2-Tetrachloroethane	ND		5.00	4.34		ug/L		87	58 - 135
1,1,2-Trichloroethane	ND		5.00	4.52		ug/L		90	64 - 135
1,1-Dichloroethane	ND		5.00	5.14		ug/L		103	65 - 135
1,1-Dichloroethene	ND		5.00	4.99		ug/L		100	65 - 136
1,2,3-Trichloropropane	ND		5.00	4.41		ug/L		88	65 - 135
1,2-Dibromo-3-Chloropropane	ND		5.00	ND		ug/L		72	57 - 135
1,2-Dibromoethane	ND		5.00	4.39		ug/L		88	65 - 135
1,2-Dichlorobenzene	ND		5.00	4.60		ug/L		92	65 - 135
1,2-Dichloroethane	ND		5.00	4.54		ug/L		91	65 - 135
1,2-Dichloropropane	ND		5.00	4.83		ug/L		97	64 - 135
1,4-Dichlorobenzene	ND		5.00	4.60		ug/L		92	65 - 135
2-Butanone (MEK)	ND		20.0	15.1		ug/L		75	44 - 177
2-Hexanone	ND		20.0	15.1		ug/L		75	57 - 139
4-Methyl-2-pentanone (MIBK)	ND		20.0	15.2		ug/L		76	60 - 150
Acetone	ND		20.0	18.3		ug/L		91	39 - 156
Acrolein	ND		50.0	43.3		ug/L		87	36 - 147
Acrylonitrile	ND		50.0	43.5		ug/L		87	56 - 135
Benzene	ND		5.00	4.91		ug/L		98	65 - 135
Bromodichloromethane	ND		5.00	4.61		ug/L		92	65 - 135
Bromoform	ND		5.00	4.35		ug/L		87	62 - 135
Bromomethane	ND		5.00	4.74		ug/L		95	45 - 135
Carbon disulfide	ND		5.00	5.09		ug/L		102	55 - 143
Carbon tetrachloride	ND		5.00	5.14		ug/L		103	65 - 135
Chlorobenzene	ND		5.00	4.83		ug/L		97	65 - 135
Chlorobromomethane	ND		5.00	4.51		ug/L		90	65 - 135
Chlorodibromomethane	ND		5.00	4.54		ug/L		91	65 - 135
Chloroethane	ND		5.00	4.80		ug/L		96	46 - 136
Chloroform	ND		5.00	4.96		ug/L		99	65 - 135
Chloromethane	ND		5.00	5.07		ug/L		101	34 - 145
cis-1,2-Dichloroethene	ND		5.00	4.84		ug/L		97	65 - 135

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 280-108811-E-1 MS
Matrix: Water
Analysis Batch: 413436

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
cis-1,3-Dichloropropene	ND		5.00	4.51		ug/L		90	65 - 135
Dibromomethane	ND		5.00	4.38		ug/L		88	65 - 135
Ethylbenzene	ND		5.00	5.06		ug/L		101	65 - 135
Iodomethane	ND		5.00	4.84		ug/L		97	65 - 142
Methylene Chloride	ND		5.00	5.33		ug/L		94	54 - 141
Styrene	ND	F1	5.00	2.73	F1	ug/L		55	65 - 135
Tetrachloroethene	ND		5.00	5.24		ug/L		99	65 - 135
Toluene	ND		5.00	4.80		ug/L		96	65 - 135
trans-1,2-Dichloroethene	ND		5.00	5.15		ug/L		103	65 - 135
trans-1,3-Dichloropropene	ND		5.00	4.53		ug/L		91	65 - 135
trans-1,4-Dichloro-2-butene	ND		5.00	4.55		ug/L		91	53 - 135
Trichloroethene	ND		5.00	5.20		ug/L		97	65 - 135
Trichlorofluoromethane	ND		5.00	5.33		ug/L		107	53 - 137
Vinyl acetate	ND		10.0	7.39		ug/L		74	11 - 187
Vinyl chloride	ND		5.00	5.09		ug/L		102	40 - 137
Xylenes, Total	ND		10.0	10.1		ug/L		101	65 - 135

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*99*		*70 - 127*
4-Bromofluorobenzene (Surr)	*91*		*78 - 120*
Dibromofluoromethane (Surr)	*94*		*77 - 120*
Toluene-d8 (Surr)	*98*		*80 - 125*

Lab Sample ID: 280-108811-E-1 MSD
Matrix: Water
Analysis Batch: 413436

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane	ND		5.00	5.22		ug/L		104	65 - 135	3	20
1,1,1-Trichloroethane	ND		5.00	5.21		ug/L		104	65 - 135	0	20
1,1,2,2-Tetrachloroethane	ND		5.00	4.61		ug/L		92	58 - 135	6	20
1,1,2-Trichloroethane	ND		5.00	4.87		ug/L		97	64 - 135	8	27
1,1-Dichloroethane	ND		5.00	5.17		ug/L		103	65 - 135	1	21
1,1-Dichloroethene	ND		5.00	5.04		ug/L		101	65 - 136	1	20
1,2,3-Trichloropropane	ND		5.00	4.93		ug/L		99	65 - 135	11	23
1,2-Dibromo-3-Chloropropane	ND		5.00	ND		ug/L		82	57 - 135	13	22
1,2-Dibromoethane	ND		5.00	4.73		ug/L		95	65 - 135	7	27
1,2-Dichlorobenzene	ND		5.00	4.88		ug/L		98	65 - 135	6	20
1,2-Dichloroethane	ND		5.00	4.82		ug/L		96	65 - 135	6	20
1,2-Dichloropropane	ND		5.00	5.01		ug/L		100	64 - 135	3	20
1,4-Dichlorobenzene	ND		5.00	4.83		ug/L		97	65 - 135	5	23
2-Butanone (MEK)	ND		20.0	18.0		ug/L		90	44 - 177	18	32
2-Hexanone	ND		20.0	16.6		ug/L		83	57 - 139	10	25
4-Methyl-2-pentanone (MIBK)	ND		20.0	17.6		ug/L		88	60 - 150	14	22
Acetone	ND		20.0	18.9		ug/L		95	39 - 156	4	23
Acrolein	ND		50.0	46.6		ug/L		93	36 - 147	7	30
Acrylonitrile	ND		50.0	46.7		ug/L		93	56 - 135	7	30
Benzene	ND		5.00	5.04		ug/L		101	65 - 135	3	20

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 280-108811-E-1 MSD
Matrix: Water
Analysis Batch: 413436

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Bromodichloromethane	ND		5.00	4.81		ug/L		96	65 - 135	4	20
Bromoform	ND		5.00	4.54		ug/L		91	62 - 135	4	27
Bromomethane	ND		5.00	5.25		ug/L		105	45 - 135	10	33
Carbon disulfide	ND		5.00	5.04		ug/L		101	55 - 143	1	20
Carbon tetrachloride	ND		5.00	5.09		ug/L		102	65 - 135	1	21
Chlorobenzene	ND		5.00	4.97		ug/L		99	65 - 135	3	20
Chlorobromomethane	ND		5.00	4.78		ug/L		96	65 - 135	6	29
Chlorodibromomethane	ND		5.00	4.70		ug/L		94	65 - 135	3	20
Chloroethane	ND		5.00	5.19		ug/L		104	46 - 136	8	25
Chloroform	ND		5.00	5.13		ug/L		103	65 - 135	3	20
Chloromethane	ND		5.00	5.40		ug/L		108	34 - 145	6	24
cis-1,2-Dichloroethene	ND		5.00	4.94		ug/L		99	65 - 135	2	20
cis-1,3-Dichloropropene	ND		5.00	4.78		ug/L		96	65 - 135	6	26
Dibromomethane	ND		5.00	4.68		ug/L		94	65 - 135	6	26
Ethylbenzene	ND		5.00	5.08		ug/L		102	65 - 135	0	20
Iodomethane	ND		5.00	4.96		ug/L		99	65 - 142	2	25
Methylene Chloride	ND		5.00	5.49		ug/L		97	54 - 141	3	26
Styrene	ND	F1	5.00	3.48		ug/L		70	65 - 135	24	26
Tetrachloroethene	ND		5.00	5.24		ug/L		99	65 - 135	0	20
Toluene	ND		5.00	4.90		ug/L		98	65 - 135	2	20
trans-1,2-Dichloroethene	ND		5.00	5.13		ug/L		103	65 - 135	0	24
trans-1,3-Dichloropropene	ND		5.00	4.83		ug/L		97	65 - 135	7	26
trans-1,4-Dichloro-2-butene	ND		5.00	4.78		ug/L		96	53 - 135	5	25
Trichloroethene	ND		5.00	5.36		ug/L		100	65 - 135	3	20
Trichlorofluoromethane	ND		5.00	5.65		ug/L		113	53 - 137	6	27
Vinyl acetate	ND		10.0	8.46		ug/L		85	11 - 187	13	24
Vinyl chloride	ND		5.00	5.64		ug/L		113	40 - 137	10	24
Xylenes, Total	ND		10.0	10.3		ug/L		103	65 - 135	2	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*99*		*70 - 127*
4-Bromofluorobenzene (Surr)	*93*		*78 - 120*
Dibromofluoromethane (Surr)	*95*		*77 - 120*
Toluene-d8 (Surr)	*98*		*80 - 125*

Method: 6010B - Metals (ICP)

Lab Sample ID: MB 280-412561/1-A
Matrix: Water
Analysis Batch: 413435

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 412561

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		15		ug/L		04/30/18 17:00	05/01/18 21:02	1
Barium	ND		10		ug/L		04/30/18 17:00	05/01/18 21:02	1
Beryllium	ND		1.0		ug/L		04/30/18 17:00	05/01/18 21:02	1
Cadmium	ND		5.0		ug/L		04/30/18 17:00	05/01/18 21:02	1
Cobalt	ND		10		ug/L		04/30/18 17:00	05/01/18 21:02	1
Chromium	ND		10		ug/L		04/30/18 17:00	05/01/18 21:02	1

Method: 6010B - Metals (ICP) (Continued)

Lab Sample ID: MB 280-412561/1-A
Matrix: Water
Analysis Batch: 413435

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 412561

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	ND		15		ug/L		04/30/18 17:00	05/01/18 21:02	1
Calcium	ND		200		ug/L		04/30/18 17:00	05/01/18 21:02	1
Nickel	ND		40		ug/L		04/30/18 17:00	05/01/18 21:02	1
Lead	ND		9.0		ug/L		04/30/18 17:00	05/01/18 21:02	1
Antimony	ND		10		ug/L		04/30/18 17:00	05/01/18 21:02	1
Selenium	ND		15		ug/L		04/30/18 17:00	05/01/18 21:02	1
Iron	ND		100		ug/L		04/30/18 17:00	05/01/18 21:02	1
Thallium	ND		15		ug/L		04/30/18 17:00	05/01/18 21:02	1
Vanadium	ND		10		ug/L		04/30/18 17:00	05/01/18 21:02	1
Zinc	ND		20		ug/L		04/30/18 17:00	05/01/18 21:02	1
Magnesium	ND		200		ug/L		04/30/18 17:00	05/01/18 21:02	1
Silver	ND		10		ug/L		04/30/18 17:00	05/01/18 21:02	1
Manganese	ND		10		ug/L		04/30/18 17:00	05/01/18 21:02	1
Potassium	ND		3000		ug/L		04/30/18 17:00	05/01/18 21:02	1
Sodium	ND		1000		ug/L		04/30/18 17:00	05/01/18 21:02	1

Lab Sample ID: LCS 280-412561/2-A
Matrix: Water
Analysis Batch: 413435

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 412561

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	1000	1020		ug/L		102	88 - 110
Barium	2000	2120		ug/L		106	90 - 112
Beryllium	50.0	50.6		ug/L		101	89 - 113
Cadmium	100	105		ug/L		105	88 - 111
Cobalt	500	497		ug/L		99	89 - 111
Chromium	200	214		ug/L		107	90 - 113
Copper	250	269		ug/L		108	86 - 112
Calcium	50000	52400		ug/L		105	90 - 111
Nickel	500	534		ug/L		107	89 - 111
Lead	500	509		ug/L		102	89 - 110
Antimony	500	526		ug/L		105	88 - 110
Selenium	2000	2030		ug/L		102	85 - 112
Iron	1000	1020		ug/L		102	89 - 115
Thallium	2000	2070		ug/L		103	88 - 110
Vanadium	500	519		ug/L		104	90 - 111
Zinc	500	509		ug/L		102	85 - 111
Magnesium	50000	51700		ug/L		103	90 - 113
Silver	50.0	56.0		ug/L		112	86 - 115
Manganese	500	509		ug/L		102	90 - 110
Potassium	50000	51300		ug/L		103	89 - 114
Sodium	50000	51100		ug/L		102	90 - 115

Lab Sample ID: 280-108811-B-1-B MS
Matrix: Water
Analysis Batch: 413435

Client Sample ID: Matrix Spike
Prep Type: Total Recoverable
Prep Batch: 412561

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	ND		1000	1080		ug/L		107	84 - 124

Method: 6010B - Metals (ICP) (Continued)

Lab Sample ID: 280-108811-B-1-B MS
Matrix: Water
Analysis Batch: 413435

Client Sample ID: Matrix Spike
Prep Type: Total Recoverable
Prep Batch: 412561

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Barium	25		2000	2150		ug/L		106	85 - 120
Beryllium	ND		50.0	49.8		ug/L		100	79 - 121
Cadmium	ND		100	100		ug/L		100	82 - 119
Cobalt	ND		500	488		ug/L		98	82 - 119
Chromium	ND		200	211		ug/L		104	73 - 135
Copper	ND		250	289		ug/L		116	82 - 129
Calcium	200000		50000	255000	4	ug/L		102	48 - 153
Nickel	ND		500	521		ug/L		104	84 - 120
Lead	ND		500	492		ug/L		98	89 - 121
Antimony	ND		500	546		ug/L		109	81 - 124
Selenium	ND		2000	2130		ug/L		107	71 - 140
Iron	ND		1000	1040		ug/L		99	52 - 155
Thallium	ND		2000	1910		ug/L		95	90 - 116
Vanadium	ND		500	522		ug/L		103	85 - 120
Zinc	ND		500	489		ug/L		96	60 - 137
Magnesium	240000		50000	288000	4	ug/L		106	62 - 146
Silver	ND		50.0	62.8		ug/L		117	75 - 141
Manganese	ND		500	502		ug/L		100	79 - 121
Potassium	33000		50000	88400		ug/L		110	76 - 132
Sodium	1300000		50000	1310000	4	ug/L		102	70 - 203

Lab Sample ID: 280-108811-B-1-C MSD
Matrix: Water
Analysis Batch: 413435

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total Recoverable
Prep Batch: 412561

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	ND		1000	1070		ug/L		106	84 - 124	1	20
Barium	25		2000	2150		ug/L		106	85 - 120	0	20
Beryllium	ND		50.0	49.3		ug/L		99	79 - 121	1	20
Cadmium	ND		100	98.9		ug/L		99	82 - 119	1	20
Cobalt	ND		500	486		ug/L		97	82 - 119	0	20
Chromium	ND		200	210		ug/L		104	73 - 135	0	20
Copper	ND		250	288		ug/L		115	82 - 129	1	20
Calcium	200000		50000	255000	4	ug/L		101	48 - 153	0	20
Nickel	ND		500	518		ug/L		104	84 - 120	1	20
Lead	ND		500	487		ug/L		97	89 - 121	1	20
Antimony	ND		500	543		ug/L		109	81 - 124	0	20
Selenium	ND		2000	2140		ug/L		107	71 - 140	0	20
Iron	ND		1000	1030		ug/L		99	52 - 155	1	20
Thallium	ND		2000	1900		ug/L		95	90 - 116	1	20
Vanadium	ND		500	518		ug/L		102	85 - 120	1	20
Zinc	ND		500	484		ug/L		95	60 - 137	1	20
Magnesium	240000		50000	288000	4	ug/L		106	62 - 146	0	20
Silver	ND		50.0	62.8		ug/L		117	75 - 141	0	20
Manganese	ND		500	498		ug/L		99	79 - 121	1	20
Potassium	33000		50000	88700		ug/L		111	76 - 132	0	20
Sodium	1300000		50000	1300000	4	ug/L		77	70 - 203	1	20

QC Sample Results

Client: Waste Management
Project/Site: 2769|Tekoi Balefill - 7314

TestAmerica Job ID: 280-108812-1

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 280-413458/1-A
Matrix: Water
Analysis Batch: 413613

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 413458

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		05/02/18 12:21	05/02/18 18:44	1

Lab Sample ID: LCS 280-413458/2-A
Matrix: Water
Analysis Batch: 413613

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 413458

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	5.00	5.11		ug/L		102	84 - 120

Lab Sample ID: 280-108972-C-1-E MS
Matrix: Water
Analysis Batch: 413613

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 413458

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	ND		5.00	5.08		ug/L		102	75 - 125

Lab Sample ID: 280-108972-C-1-F MSD
Matrix: Water
Analysis Batch: 413613

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 413458

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	ND		5.00	5.05		ug/L		101	75 - 125	1	20

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 280-413883/6
Matrix: Water
Analysis Batch: 413883

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		3.0		mg/L			05/06/18 10:30	1
Sulfate	ND		5.0		mg/L			05/06/18 10:30	1

Lab Sample ID: LCS 280-413883/4
Matrix: Water
Analysis Batch: 413883

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	100	104		mg/L		104	90 - 110
Sulfate	100	103		mg/L		103	90 - 110

Lab Sample ID: LCSD 280-413883/5
Matrix: Water
Analysis Batch: 413883

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	100	103		mg/L		103	90 - 110	0	10
Sulfate	100	103		mg/L		103	90 - 110	0	10

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: MRL 280-413883/3
Matrix: Water
Analysis Batch: 413883

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	2.50	ND		mg/L		104	50 - 150
Sulfate	2.50	ND		mg/L		104	50 - 150

Lab Sample ID: 280-108374-E-1 MS
Matrix: Water
Analysis Batch: 413883

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	ND		500	542		mg/L		108	80 - 120
Sulfate	1900		500	2450		mg/L		106	80 - 120

Lab Sample ID: 280-108374-E-1 MSD
Matrix: Water
Analysis Batch: 413883

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	ND		500	532		mg/L		106	80 - 120	2	20
Sulfate	1900		500	2400		mg/L		96	80 - 120	2	20

Lab Sample ID: 280-108374-E-1 DU
Matrix: Water
Analysis Batch: 413883

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Chloride	ND		ND		mg/L		NC	15
Sulfate	1900		1920		mg/L		0.1	15

Method: 350.1 - Nitrogen, Ammonia

Lab Sample ID: MB 280-415134/62
Matrix: Water
Analysis Batch: 415134

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia as N	ND		0.20		mg/L			05/16/18 13:58	1

Lab Sample ID: LCS 280-415134/60
Matrix: Water
Analysis Batch: 415134

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia as N	2.50	2.44		mg/L		98	90 - 110

Lab Sample ID: LCSD 280-415134/61
Matrix: Water
Analysis Batch: 415134

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ammonia as N	2.50	2.38		mg/L		95	90 - 110	3	10

Method: 350.1 - Nitrogen, Ammonia (Continued)

Lab Sample ID: 280-108768-A-2 MS
Matrix: Water
Analysis Batch: 415134

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia as N	ND		1.00	1.14		mg/L		107	90 - 110

Lab Sample ID: 280-108768-A-2 MSD
Matrix: Water
Analysis Batch: 415134

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ammonia as N	ND		1.00	1.10		mg/L		103	90 - 110	4	10

Method: 351.2 - Nitrogen, Total Kjeldahl

Lab Sample ID: MB 280-413402/30-A
Matrix: Water
Analysis Batch: 413695

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 413402

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Kjeldahl Nitrogen	0.611		0.50		mg/L		05/01/18 18:28	05/03/18 19:40	1

Lab Sample ID: LCS 280-413402/28-A
Matrix: Water
Analysis Batch: 413695

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 413402

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Kjeldahl Nitrogen	6.00	6.44		mg/L		107	90 - 110

Lab Sample ID: LCSD 280-413402/29-A
Matrix: Water
Analysis Batch: 413695

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 413402

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Kjeldahl Nitrogen	6.00	6.63		mg/L		110	90 - 110	3	25

Lab Sample ID: 280-108953-A-4-E MS
Matrix: Water
Analysis Batch: 413695

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 413402

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Kjeldahl Nitrogen	7.1	B F1	5.00	15.4	F1	mg/L		166	90 - 110

Lab Sample ID: 280-108953-A-4-F MSD
Matrix: Water
Analysis Batch: 413695

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 413402

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Kjeldahl Nitrogen	7.1	B F1	5.00	12.1		mg/L		100	90 - 110	24	25

QC Sample Results

Client: Waste Management
Project/Site: 2769|Tekoi Balefill - 7314

TestAmerica Job ID: 280-108812-1

Method: 410.4 - COD

Lab Sample ID: MB 280-415066/5
Matrix: Water
Analysis Batch: 415066

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chemical Oxygen Demand	ND		20		mg/L			05/16/18 09:28	1

Lab Sample ID: LCS 280-415066/3
Matrix: Water
Analysis Batch: 415066

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chemical Oxygen Demand	100	96.8		mg/L		97	90 - 110

Lab Sample ID: LCSD 280-415066/4
Matrix: Water
Analysis Batch: 415066

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chemical Oxygen Demand	100	94.0		mg/L		94	90 - 110	3	11

Lab Sample ID: 280-108710-E-8 MS
Matrix: Water
Analysis Batch: 415066

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chemical Oxygen Demand	ND	F1 F2	50.0	24.7	F1	mg/L		49	90 - 110

Lab Sample ID: 280-108710-E-8 MSD
Matrix: Water
Analysis Batch: 415066

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chemical Oxygen Demand	ND	F1 F2	50.0	ND	F1 F2	mg/L		24	90 - 110	70	11

Method: SM 2320B - Alkalinity

Lab Sample ID: MB 280-413825/5
Matrix: Water
Analysis Batch: 413825

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity	ND		5.0		mg/L			05/03/18 19:27	1
Bicarbonate Alkalinity as CaCO3	ND		5.0		mg/L			05/03/18 19:27	1
Carbonate Alkalinity as CaCO3	ND		5.0		mg/L			05/03/18 19:27	1

Lab Sample ID: LCS 280-413825/4
Matrix: Water
Analysis Batch: 413825

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Alkalinity	200	200		mg/L		100	90 - 110

Method: SM 2320B - Alkalinity (Continued)

Lab Sample ID: 280-108779-E-1 DU
Matrix: Water
Analysis Batch: 413825

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Alkalinity	170		175		mg/L		0.9	10

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 280-414750/1
Matrix: Water
Analysis Batch: 414750

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10		mg/L			05/14/18 11:34	1

Lab Sample ID: LCS 280-414750/2
Matrix: Water
Analysis Batch: 414750

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	500	505		mg/L		101	86 - 110

Lab Sample ID: 280-108812-1 DU
Matrix: Water
Analysis Batch: 414750

Client Sample ID: MW-06D
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	6900	H	6900		mg/L		0.2	10

Method: SM 5310B - Organic Carbon, Total (TOC)

Lab Sample ID: MB 280-414717/36
Matrix: Water
Analysis Batch: 414717

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
TOC Result 1	ND		1.0		mg/L			05/12/18 00:35	1
TOC Result 2	ND		1.0		mg/L			05/12/18 00:35	1

Lab Sample ID: LCS 280-414717/35
Matrix: Water
Analysis Batch: 414717

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
TOC Result 1	25.0	25.1		mg/L		100	88 - 112
TOC Result 2	25.0	25.1		mg/L		100	88 - 112

Lab Sample ID: 280-108812-1 MS
Matrix: Water
Analysis Batch: 414717

Client Sample ID: MW-06D
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
TOC Result 1	1.5		25.0	26.0		mg/L		98	88 - 112

Method: SM 5310B - Organic Carbon, Total (TOC) (Continued)

Lab Sample ID: 280-108812-1 MS
Matrix: Water
Analysis Batch: 414717

Client Sample ID: MW-06D
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
TOC Result 2	1.6		25.0	27.0		mg/L		101	88 - 112

Lab Sample ID: 280-108812-1 MSD
Matrix: Water
Analysis Batch: 414717

Client Sample ID: MW-06D
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
TOC Result 1	1.5		25.0	27.2		mg/L		103	88 - 112	5	15
TOC Result 2	1.6		25.0	26.4		mg/L		99	88 - 112	2	15

QC Association Summary

Client: Waste Management
Project/Site: 2769|Tekoi Balefill - 7314

TestAmerica Job ID: 280-108812-1

GC/MS VOA

Analysis Batch: 413436

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-108812-1	MW-06D	Total/NA	Water	8260B	
280-108812-2	TRIP BLANK	Total/NA	Water	8260B	
MB 280-413436/6	Method Blank	Total/NA	Water	8260B	
LCS 280-413436/4	Lab Control Sample	Total/NA	Water	8260B	
280-108811-E-1 MS	Matrix Spike	Total/NA	Water	8260B	
280-108811-E-1 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	

Metals

Prep Batch: 412561

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-108812-1	MW-06D	Total Recoverable	Water	3005A	
MB 280-412561/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 280-412561/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
280-108811-B-1-B MS	Matrix Spike	Total Recoverable	Water	3005A	
280-108811-B-1-C MSD	Matrix Spike Duplicate	Total Recoverable	Water	3005A	

Analysis Batch: 413435

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-108812-1	MW-06D	Total Recoverable	Water	6010B	412561
MB 280-412561/1-A	Method Blank	Total Recoverable	Water	6010B	412561
LCS 280-412561/2-A	Lab Control Sample	Total Recoverable	Water	6010B	412561
280-108811-B-1-B MS	Matrix Spike	Total Recoverable	Water	6010B	412561
280-108811-B-1-C MSD	Matrix Spike Duplicate	Total Recoverable	Water	6010B	412561

Prep Batch: 413458

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-108812-1	MW-06D	Total/NA	Water	7470A	
MB 280-413458/1-A	Method Blank	Total/NA	Water	7470A	
LCS 280-413458/2-A	Lab Control Sample	Total/NA	Water	7470A	
280-108972-C-1-E MS	Matrix Spike	Total/NA	Water	7470A	
280-108972-C-1-F MSD	Matrix Spike Duplicate	Total/NA	Water	7470A	

Analysis Batch: 413613

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-108812-1	MW-06D	Total/NA	Water	7470A	413458
MB 280-413458/1-A	Method Blank	Total/NA	Water	7470A	413458
LCS 280-413458/2-A	Lab Control Sample	Total/NA	Water	7470A	413458
280-108972-C-1-E MS	Matrix Spike	Total/NA	Water	7470A	413458
280-108972-C-1-F MSD	Matrix Spike Duplicate	Total/NA	Water	7470A	413458

Analysis Batch: 413706

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-108812-1	MW-06D	Total Recoverable	Water	6010B	412561

General Chemistry

Analysis Batch: 412861

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-108812-1	MW-06D	Total/NA	Water	SM 2540C	

QC Association Summary

Client: Waste Management
Project/Site: 2769|Tekoi Balefill - 7314

TestAmerica Job ID: 280-108812-1

General Chemistry (Continued)

Prep Batch: 413402

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-108812-1	MW-06D	Total/NA	Water	351.2	
MB 280-413402/30-A	Method Blank	Total/NA	Water	351.2	
LCS 280-413402/28-A	Lab Control Sample	Total/NA	Water	351.2	
LCSD 280-413402/29-A	Lab Control Sample Dup	Total/NA	Water	351.2	
280-108953-A-4-E MS	Matrix Spike	Total/NA	Water	351.2	
280-108953-A-4-F MSD	Matrix Spike Duplicate	Total/NA	Water	351.2	

Analysis Batch: 413695

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-108812-1	MW-06D	Total/NA	Water	351.2	413402
MB 280-413402/30-A	Method Blank	Total/NA	Water	351.2	413402
LCS 280-413402/28-A	Lab Control Sample	Total/NA	Water	351.2	413402
LCSD 280-413402/29-A	Lab Control Sample Dup	Total/NA	Water	351.2	413402
280-108953-A-4-E MS	Matrix Spike	Total/NA	Water	351.2	413402
280-108953-A-4-F MSD	Matrix Spike Duplicate	Total/NA	Water	351.2	413402

Analysis Batch: 413825

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-108812-1	MW-06D	Total/NA	Water	SM 2320B	
MB 280-413825/5	Method Blank	Total/NA	Water	SM 2320B	
LCS 280-413825/4	Lab Control Sample	Total/NA	Water	SM 2320B	
280-108779-E-1 DU	Duplicate	Total/NA	Water	SM 2320B	

Analysis Batch: 413883

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-108812-1	MW-06D	Total/NA	Water	300.0	
MB 280-413883/6	Method Blank	Total/NA	Water	300.0	
LCS 280-413883/4	Lab Control Sample	Total/NA	Water	300.0	
LCSD 280-413883/5	Lab Control Sample Dup	Total/NA	Water	300.0	
MRL 280-413883/3	Lab Control Sample	Total/NA	Water	300.0	
280-108374-E-1 MS	Matrix Spike	Total/NA	Water	300.0	
280-108374-E-1 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	
280-108374-E-1 DU	Duplicate	Total/NA	Water	300.0	

Analysis Batch: 414717

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-108812-1	MW-06D	Total/NA	Water	SM 5310B	
MB 280-414717/36	Method Blank	Total/NA	Water	SM 5310B	
LCS 280-414717/35	Lab Control Sample	Total/NA	Water	SM 5310B	
280-108812-1 MS	MW-06D	Total/NA	Water	SM 5310B	
280-108812-1 MSD	MW-06D	Total/NA	Water	SM 5310B	

Analysis Batch: 414750

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 280-414750/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 280-414750/2	Lab Control Sample	Total/NA	Water	SM 2540C	
280-108812-1 DU	MW-06D	Total/NA	Water	SM 2540C	

Analysis Batch: 415066

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-108812-1	MW-06D	Total/NA	Water	410.4	

QC Association Summary

Client: Waste Management
Project/Site: 2769|Tekoi Balefill - 7314

TestAmerica Job ID: 280-108812-1

General Chemistry (Continued)

Analysis Batch: 415066 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 280-415066/5	Method Blank	Total/NA	Water	410.4	
LCS 280-415066/3	Lab Control Sample	Total/NA	Water	410.4	
LCSD 280-415066/4	Lab Control Sample Dup	Total/NA	Water	410.4	
280-108710-E-8 MS	Matrix Spike	Total/NA	Water	410.4	
280-108710-E-8 MSD	Matrix Spike Duplicate	Total/NA	Water	410.4	

Analysis Batch: 415134

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-108812-1	MW-06D	Total/NA	Water	350.1	
MB 280-415134/62	Method Blank	Total/NA	Water	350.1	
LCS 280-415134/60	Lab Control Sample	Total/NA	Water	350.1	
LCSD 280-415134/61	Lab Control Sample Dup	Total/NA	Water	350.1	
280-108768-A-2 MS	Matrix Spike	Total/NA	Water	350.1	
280-108768-A-2 MSD	Matrix Spike Duplicate	Total/NA	Water	350.1	

Field Service / Mobile Lab

Analysis Batch: 412393

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-108812-1	MW-06D	Total/NA	Water	Field Sampling	

Lab Chronicle

Client: Waste Management
Project/Site: 2769|Tekoi Balefill - 7314

TestAmerica Job ID: 280-108812-1

Client Sample ID: MW-06D

Lab Sample ID: 280-108812-1
Matrix: Water

Date Collected: 04/19/18 09:10
Date Received: 04/20/18 09:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	20 mL	20 mL	413436	05/02/18 14:32	DPI	TAL DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	412561	04/30/18 17:00	LRD	TAL DEN
Total Recoverable	Analysis	6010B		1			413435	05/01/18 21:29	CML	TAL DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	412561	04/30/18 17:00	LRD	TAL DEN
Total Recoverable	Analysis	6010B		1			413706	05/03/18 13:33	CML	TAL DEN
Total/NA	Prep	7470A			30 mL	50 mL	413458	05/02/18 12:21	CDH	TAL DEN
Total/NA	Analysis	7470A		1			413613	05/02/18 19:09	CDH	TAL DEN
Total/NA	Analysis	300.0		20	5 mL	5 mL	413883	05/06/18 19:24	CCJ	TAL DEN
Total/NA	Analysis	350.1		1			415134	05/16/18 14:42	JAP	TAL DEN
Total/NA	Prep	351.2			25 mL	25 mL	413402	05/01/18 18:28	SVC	TAL DEN
Total/NA	Analysis	351.2		1			413695	05/03/18 20:03	SVC	TAL DEN
Total/NA	Analysis	410.4		5	2 mL	2 mL	415066	05/16/18 09:28	CCJ	TAL DEN
Total/NA	Analysis	SM 2320B		1			413825	05/03/18 21:13	LPL	TAL DEN
Total/NA	Analysis	SM 2540C		1	25 mL	100 mL	412861	04/26/18 14:33	JAP	TAL DEN
Total/NA	Analysis	SM 5310B		1			414717	05/12/18 02:52	A1D	TAL DEN
Total/NA	Analysis	Field Sampling		1			412393	04/19/18 09:10	S1D	TAL DEN

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Client Sample ID: TRIP BLANK

Lab Sample ID: 280-108812-2
Matrix: Water

Date Collected: 04/19/18 00:00
Date Received: 04/20/18 09:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	20 mL	20 mL	413436	05/02/18 09:51	DPI	TAL DEN

Laboratory References:

TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

TestAmerica Denver
4955 Yarrow Street
Arvada, CO 80002
Phone (303) 736-0100 Fax (303) 431-7171

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: Mike Price, JW	Lab PM: Harrington, Danielle M	Carrier Tracking No(s):	COC No: 280-16295-7618.1
Client Contact: Mr. Mark Franc	Phone: (801)635-0145	E-Mail: danielle.harrington@testamericainc.com		Page: Page 1 of 1
Company: Waste Management				Job #:
Address: 3683 S. 4975 W.	Due Date Requested:			
City: West Haven	TAT Requested (days):			
State, Zip: UT, 84401				
Phone:	PO #:			
Email: mfranc@wm.com	WO #:			
Project Name: 2769|Tekol Balefill - 7314/2769 Event Desc: Annual April	Project #: 28003318			
Site:UTAH SEMIANNUAL APRIL 2018	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA
M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2SO3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - ph 4-5, Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	Total Metals 6010B/7470A	Ammonia/TKN	COD/TOC in dup	8260B	TDS/IC CL & SO4/Alkalinity	Total Number of containers	Special Instructions/Note:
			Preservation Code:				D	S	S	A	N		
MW-06D	4-19-18	0910					X	X	X	X	X		
Trip Blank										X			

280-108812 Chain of Custody

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:		
Relinquished by: [signature]	Date/Time: 4-19-18 1740	Company: [signature]	Received by: [signature]	Date/Time: 4/20/18 0900	Company: Fedex
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks: 1.3, 1.9°C 0.0 IR #18 transferred BB 4/20/18

5/29/2018

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FIELD INFORMATION FORM

WASTE MANAGEMENT

Site Name: Tekoi

Site No.: 2769 Sample Point: MW-06D (Sample ID)

This Waste Management Field Information Form is Required
This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID:

PURGE INFO

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hrs:min)	WATER VOL IN ~~CASING~~ PCT ~~(Gallons)~~ mL	ACTUAL VOL PURGED ~~(Gallons)~~ mL	WELL VOLs PURGED
041918	0835	0030	500	2500.0	5

Note For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark changes, record field data, below.

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment . . . Dedicated: (Y) or N

Purging Device: C — A-Submersible Pump, B-Peristaltic Pump, C-QED Bladder Pump, D-Bailer, E-Piston Pump, F-Dipper/Bottle

Sampling Device: C

X-Other:

Filter Device: Y or (N) — 0.45 µ or ____ µ (circle or fill in)

Filter Type: NA — A-In-line Disposable, B-Pressure, C-Vacuum, X-Other: —

Sample Tube Type: C — A-Teflon, B-Stainless Steel, C-PVC, D-Polypropylene, X-Other: —

WELL DATA

Well Elevation (at TOC): 462169 (ft/msl)

Depth to Water (DTW) (from TOC): 5009 (ft)

Groundwater Elevation (site datum, from TOC): 457116 (ft/msl)

Total Well Depth (from TOC): 885 (ft)

Stick Up (from ground elevation): ____ (ft)

Casing ID: 2 (in)

Casing Material: PVC

Note: Total Well Depth, Stick Up, Casing Id. etc. are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and Groundwater Elevation must be current

STABILIZATION DATA (Optional)

Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) mS ~~(umhos/cm@25°C)~~	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
0850	1st	7.14	7.78	11.0	1.99	—	—	50.14
0855	2nd	7.23	7.91	11.2	2.85	—	—	50.16
0900	3rd	7.21	7.95	11.3	2.51	—	—	50.15
0905	4th	7.26	7.96	11.4	3.40	—	—	50.16
Suggested range for 3 consec. readings or note Permit/State requirements:		+/- 0.2	+/- 3%	--	--	+/- 10%	+/- 25 mV	Stabilize

Stabilization Data Fields are Optional *(i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. If more fields above are needed, use separate sheet or form.*

FIELD DATA

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (umhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L-ppm)	eH/ORP (mV)	Other: DTW Units ft
041918	7.26	7.96	11.4	3.40	—	—	50.16

Final Field Readings are required *(i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site*

FIELD COMMENTS

Sample Appearance: Clear Odor: None Color: Clear Other: —

Weather Conditions (required daily, or as conditions change): Direction/Speed: ____ Outlook: Cloudy, 45°F Precipitation: Y or (N)

Specific Comments (including purge/well volume calculations if required):

Sample time 0910

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):

Date	Name	Signature	Company
4/19/18	Michael Price	[signature]	Hansen, Allen & Luce
4/19/18	Jessin Warren	JWarren	HAL

DISTRIBUTION: WHITE/ORIGINAL - Stays with Sample, YELLOW - Returned to Client, PINK - Field Copy

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TAL-8029 WM (10/13) 5/29/2018

Login Sample Receipt Checklist

Client: Waste Management

Job Number: 280-108812-1

Login Number: 108812
List Number: 1
Creator: Burtness, Benjamin W

List Source: TestAmerica Denver

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	N/A	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time (Excluding tests with immediate HTs)..	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Sampling Company provided.	True	
Samples received within 48 hours of sampling.	True	
Samples requiring field filtration have been filtered in the field.	True	
Chlorine Residual checked.	N/A	

APPENDIX C

DUMPSTAT® RESULTS
FIRST 2018 SEMI-ANNUAL EVENT

INORGANIC CONSTITUENTS

Table 1

Summary Statistics and Intermediate Computations for Combined Shewhart-CUSUM Control Charts

Constituent	Units	Well	N(back)	N(mon)	N(tot)	Mean	SD	R(i-1)	R(i)	S(i-1)	S(i)	Limit	Type	Conf	
Alkalinity, total (as caco3)	mg/L	MW-5D	19	4	23	318.9474	38.1364	470.0000	470.0000	533.8480	533.8480	490.5612	normal		
Alkalinity, total (as caco3)	mg/L	MW-6D	15	2	17	344.6667	14.5733	360.0000	350.0000	349.0700	344.6667	410.2465	normal		
Alkalinity, total (as caco3)	mg/L	MW-7D	19	3	22	168.9474	6.5784	170.0000	170.0000	171.1851	168.9474	198.5500	normal		
Ammonia (as n)	mg/L	MW-5D	19	4	23			0.2000	0.2000			0.2000	nonpar	.99	**
Ammonia (as n)	mg/L	MW-6D	15	2	17			0.2000	0.2000			0.2000	nonpar	.99	**
Ammonia (as n)	mg/L	MW-7D	19	3	22			0.2000	0.2000			0.2000	nonpar	.99	**
Bicarbonate (as caco3)	mg/L	MW-5D	19	3	22	318.9474	38.1364	450.0000	470.0000	513.8480	533.8480	490.5612	normal		
Bicarbonate (as caco3)	mg/L	MW-6D	15	1	16	344.6667	14.5733	310.0000	360.0000		349.0700	410.2465	normal		
Bicarbonate (as caco3)	mg/L	MW-7D	19	2	21	168.9474	6.5784	180.0000	170.0000	175.0662	171.1851	198.5500	normal		
Calcium	mg/L	MW-5D	19	4	23	198.9474	8.7526	170.0000	200.0000	198.9474	198.9474	238.3341	normal		
Calcium	mg/L	MW-6D	15	2	17	335.3333	18.4649	320.0000	320.0000	335.3333	335.3333	418.4254	normal		
Calcium	mg/L	MW-7D	19	3	22	209.4737	8.4811	190.0000	220.0000	209.4737	213.6391	247.6388	normal		
Carbonate (as caco3)	mg/L	MW-5D	19	3	22			5.0000	5.0000			5.0000	nonpar	.99	**
Carbonate (as caco3)	mg/L	MW-6D	15	1	16			5.0000	5.0000			5.0000	nonpar	.99	**
Carbonate (as caco3)	mg/L	MW-7D	19	2	21			5.0000	5.0000			5.0000	nonpar	.99	**
Chloride	mg/L	MW-5D	19	4	23	2273.6842	119.4529	2100.0000	2100.0000	2273.6842	2273.6842	2811.2225	normal		
Chloride	mg/L	MW-6D	15	2	17	3286.6667	209.9887	3000.0000	3000.0000	3286.6667	3286.6667	4231.6156	normal		
Chloride	mg/L	MW-7D	19	3	22	2189.4737	65.7836	2100.0000	2100.0000	2189.4737	2189.4737	2485.5000	normal		
COD	mg/L	MW-5D	18	4	22			100.0000	100.0000			75.0000	nonpar	.99	**
COD	mg/L	MW-6D	14	2	16			100.0000	100.0000			45.0000	nonpar	.99	**
COD	mg/L	MW-7D	19	3	22			100.0000	100.0000			58.0000	nonpar	.99	**
Iron	mg/L	MW-5D	19	4	23	0.5126	0.5790	0.1000	0.1000	0.5126	0.5126	3.1181	normal		
Iron	mg/L	MW-6D	15	2	17	0.4707	0.6449	0.1600	0.2000	0.4707	0.4707	3.3726	normal		
Iron	mg/L	MW-7D	19	3	22	0.2847	0.4318	0.1000	0.1000	0.2847	0.2847	2.2279	normal		
Magnesium	mg/L	MW-5D	19	4	23	215.7895	11.6980	220.0000	240.0000	216.6636	232.1007	268.4303	normal		
Magnesium	mg/L	MW-6D	15	2	17	315.3333	23.5635	300.0000	310.0000	315.3333	315.3333	421.3690	normal		
Magnesium	mg/L	MW-7D	19	3	22	233.1579	13.3552	240.0000	240.0000	233.1579	233.1579	293.2565	normal		
Manganese	mg/L	MW-5D	17	4	23			0.0100	0.0100			0.0150	nonpar	.99	**
Manganese	mg/L	MW-6D	15	2	17	0.0739	0.1172	0.0110	0.0100	0.0739	0.0739	0.6013	normal		
Manganese	mg/L	MW-7D	19	3	22			0.0100	0.0100			0.0130	nonpar	.99	**
Potassium	mg/L	MW-5D	19	4	23	31.6316	1.8016	30.0000	33.0000	31.6316	31.6488	39.7386	normal		
Potassium	mg/L	MW-6D	15	2	17	39.5333	2.0307	45.0000	39.0000	43.4770	41.4206	48.6716	normal		
Potassium	mg/L	MW-7D	19	3	22	37.6316	1.8918	38.0000	39.0000	37.6316	37.6316	46.1447	normal		
Sodium	mg/L	MW-5D	19	4	23	1400.0000	81.6497	1300.0000	1300.0000	1400.0000	1400.0000	1767.4235	normal		
Sodium	mg/L	MW-6D	15	2	17	1960.0000	98.5611	1800.0000	1600.0000	1960.0000	1960.0000	2403.5248	normal		
Sodium	mg/L	MW-7D	19	3	22	995.2632	42.8652	980.0000	920.0000	995.2632	995.2632	1188.1566	normal		
Sulfate	mg/L	MW-5D	19	4	23	886.3158	63.2640	870.0000	900.0000	886.3158	886.3158	1171.0040	normal		

N(back) and N(mon) = Non-outlier measurements in the background and monitoring periods.
N(tot) = All independent measurements for that constituent and well.
For transformed data, mean and SD in transformed units and control limit in original units.
Conf = confidence level for passing initial test or one of two verification resamples (nonparametric test only).
* - Insufficient Data.
** - Detection Frequency < 25%.
*** - Zero Variance.

Table 1

Summary Statistics and Intermediate Computations for Combined Shewhart-CUSUM Control Charts

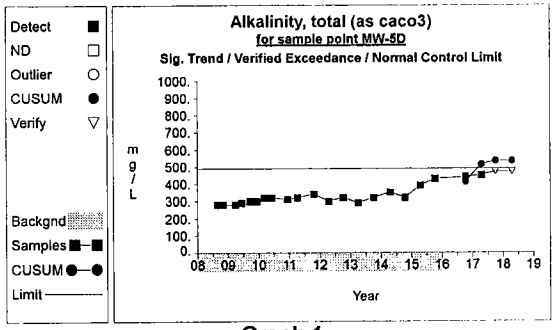
Constituent	Units	Well	N(back)	N(mon)	N(tot)	Mean	SD	R(i-1)	R(i)	S(i-1)	S(i)	Limit	Type	Conf	
Sulfate	mg/L	MW-6D	15	2	17	1553.3333	91.5475	1500.0000	1500.0000	1553.3333	1553.3333	1965.2973	normal		
Sulfate	mg/L	MW-7D	19	3	22	457.8947	22.7496	450.0000	470.0000	457.8947	457.8947	560.2679	normal		
TDS	mg/L	MW-5D	19	4	23	4963.1579	275.2989	5000.0000	5100.0000	4963.1579	4963.1579	6202.0029	normal		
TDS	mg/L	MW-6D	15	2	17	7280.0000	407.4310	6500.0000	6700.0000	7280.0000	7280.0000	9113.4394	normal		
TDS	mg/L	MW-7D	19	3	22	4068.4211	188.7168	4200.0000	3800.0000	4068.4211	4068.4211	4917.6467	normal		
Total kjeldahl nitrogen	mg/L	MW-5D	19	4	23			0.5000	0.5000			0.8600	nonpar	.99	**
Total kjeldahl nitrogen	mg/L	MW-6D	15	2	17			0.5000	0.5000			0.9800	nonpar	.99	**
Total kjeldahl nitrogen	mg/L	MW-7D	19	3	22			0.5000	0.5000			0.6700	nonpar	.99	**
Total organic carbon	mg/L	MW-5D	19	4	23			1.0000	1.1000			1.1000	nonpar	.99	**
Total organic carbon	mg/L	MW-6D	15	2	17	1.3000	0.1604	1.5000	1.5500	1.3797	1.5095	2.0216	normal		
Total organic carbon	mg/L	MW-7D	19	3	22			1.0000	1.0000			1.0000	nonpar	.99	**

N(back) and N(mon) = Non-outlier measurements in the background and monitoring periods.
N(tot) = All independent measurements for that constituent and well.
For transformed data, mean and SD in transformed units and control limit in original units.
Conf = confidence level for passing initial test or one of two verification resamples (nonparametric test only).
* - Insufficient Data.
** - Detection Frequency < 25%.
*** - Zero Variance.

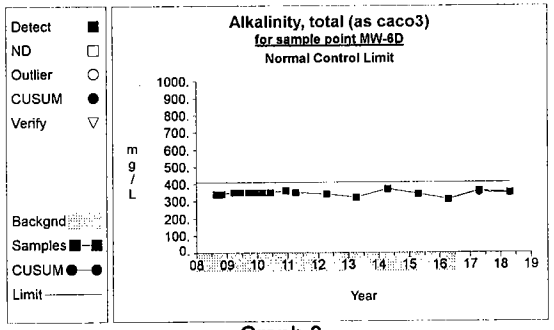
Tekoi Landfill

Analysis prepared on: 6/4/2018

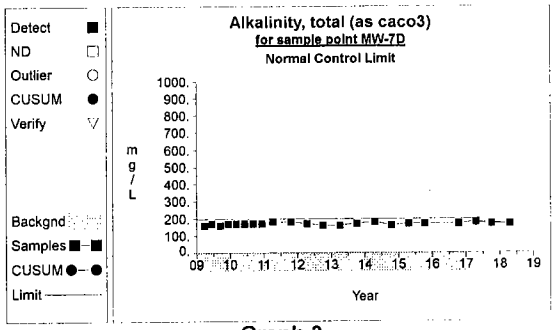
Intra-Well Control Charts / Prediction Limits



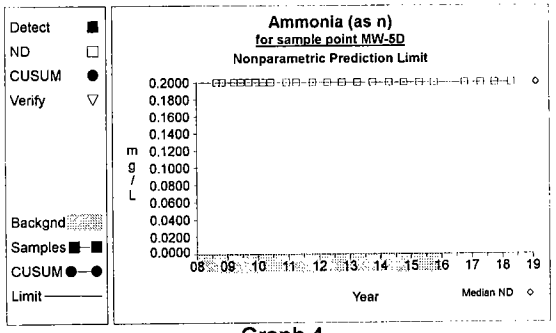
Graph 1



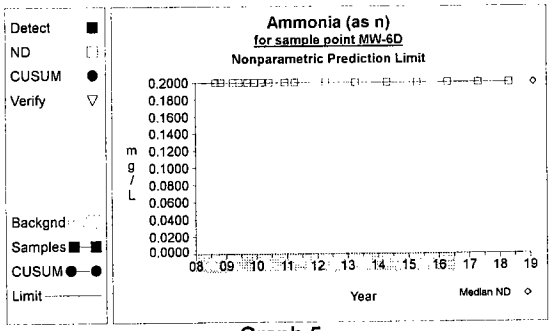
Graph 2



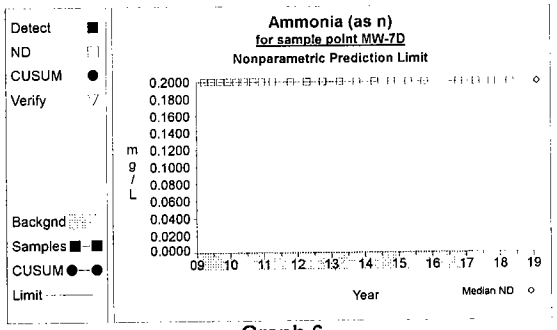
Graph 3



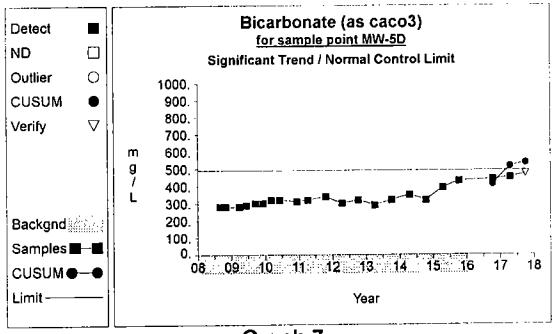
Graph 4



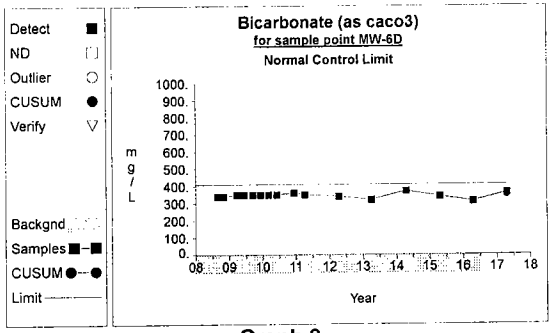
Graph 5



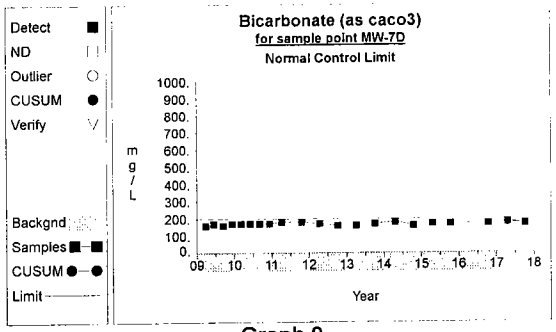
Graph 6



Graph 7



Graph 8



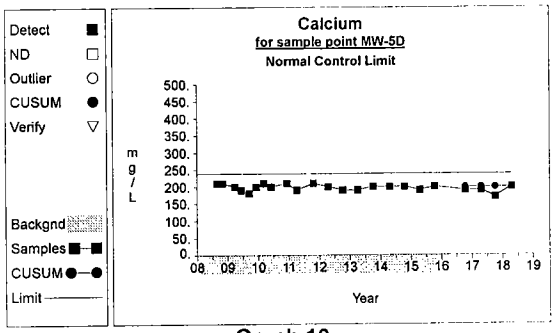
Graph 9

Prepared by: The Carel Corporation

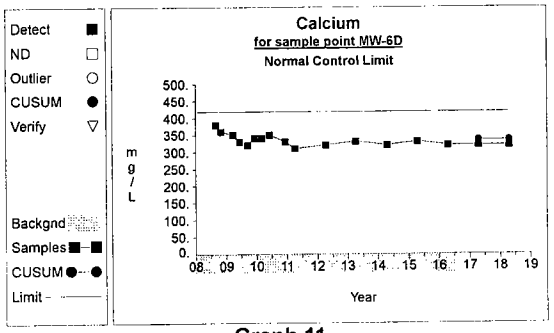
Tekoi Landfill

Analysis prepared on: 6/4/2018

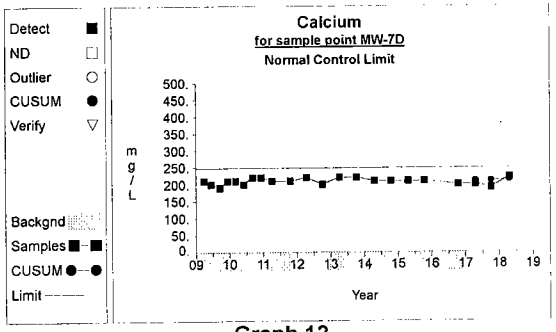
Intra-Well Control Charts / Prediction Limits



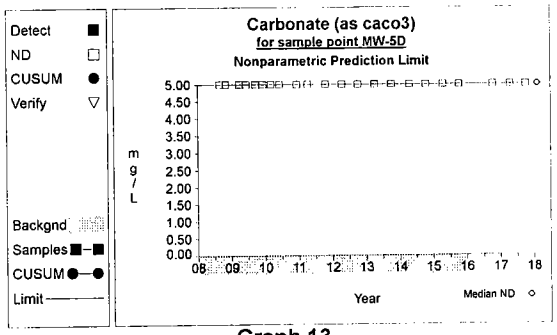
Graph 10



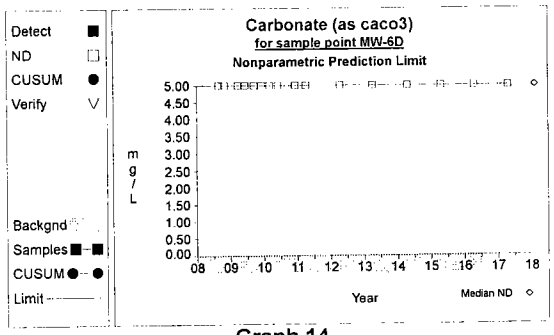
Graph 11



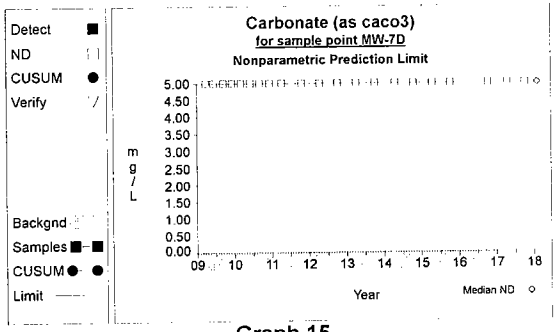
Graph 12



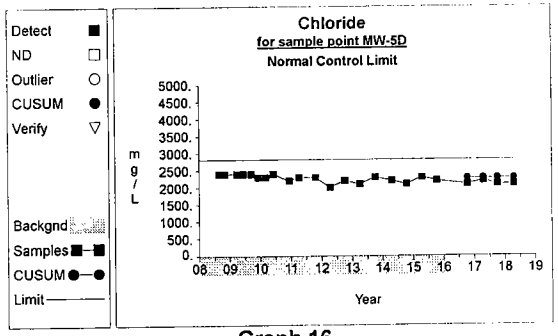
Graph 13



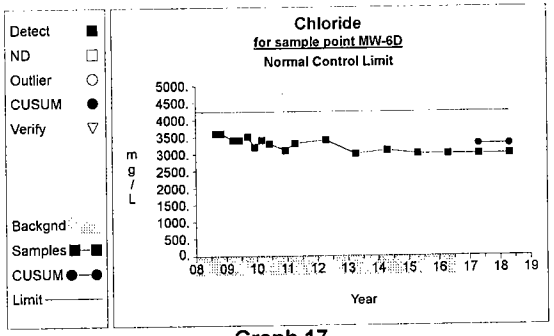
Graph 14



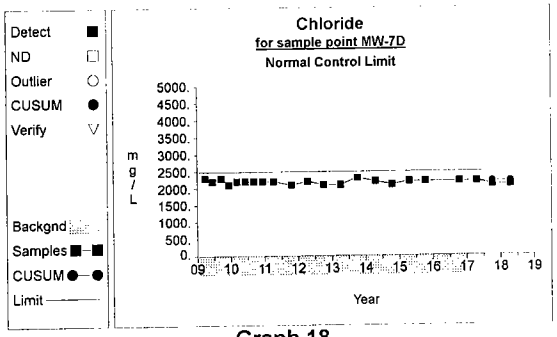
Graph 15



Graph 16



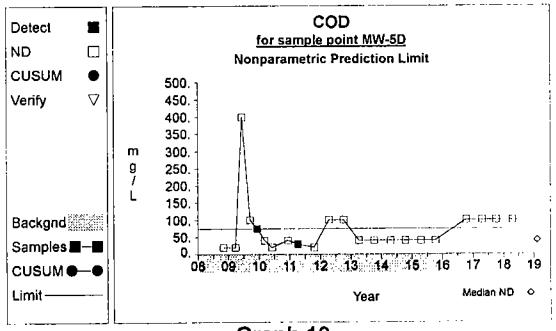
Graph 17



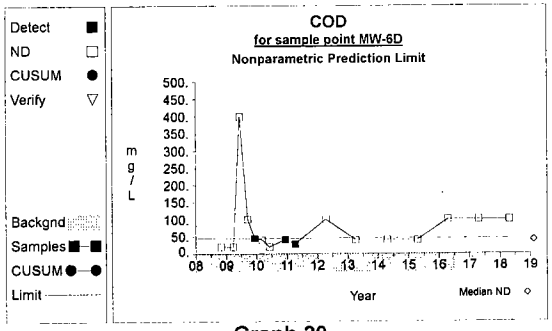
Graph 18

Prepared by: The Carel Corporation

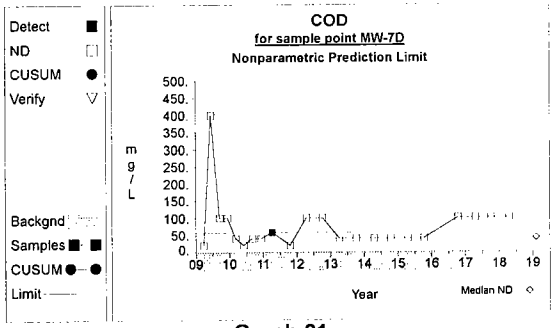
Intra-Well Control Charts / Prediction Limits



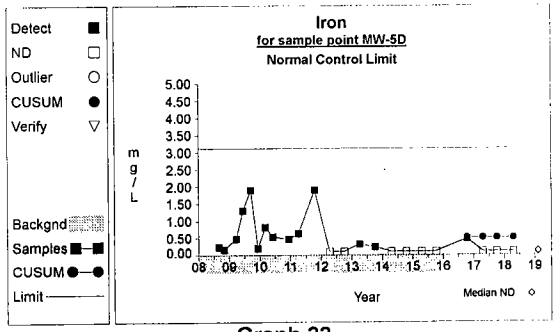
Graph 19



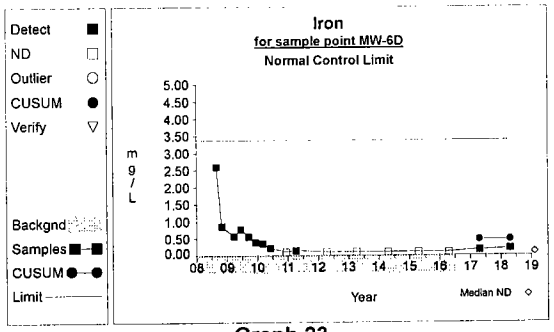
Graph 20



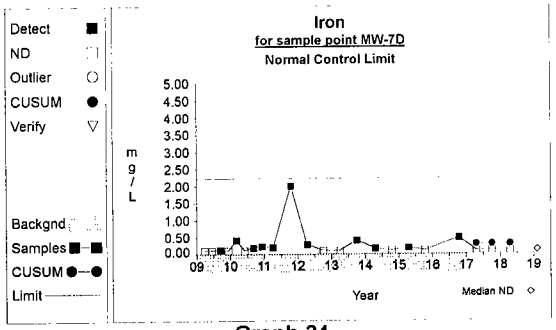
Graph 21



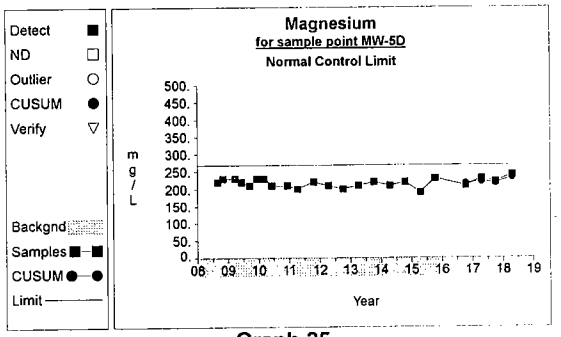
Graph 22



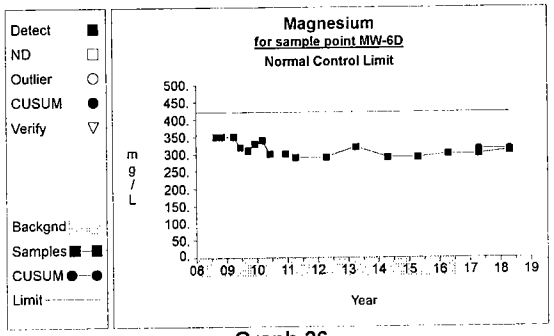
Graph 23



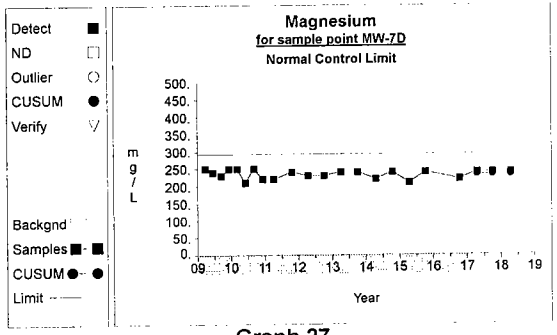
Graph 24



Graph 25

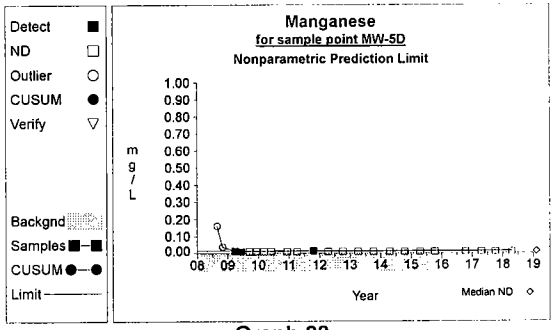


Graph 26

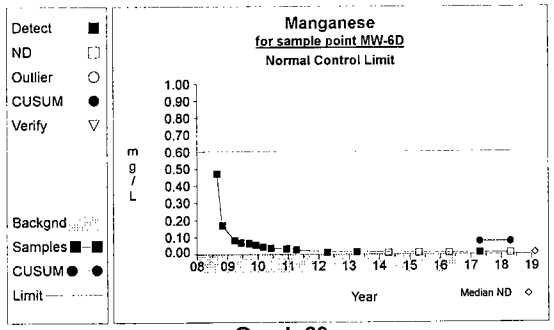


Graph 27

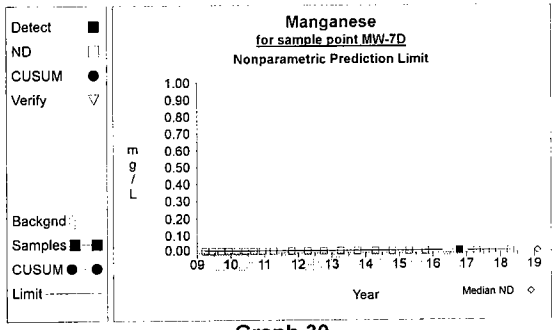
Intra-Well Control Charts / Prediction Limits



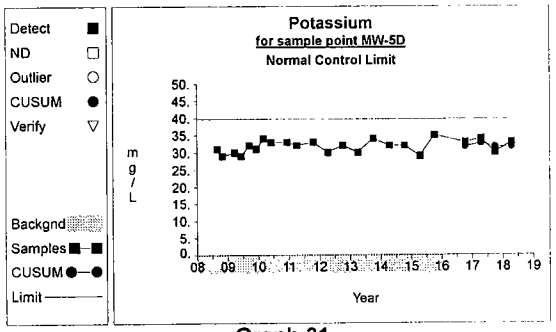
Graph 28



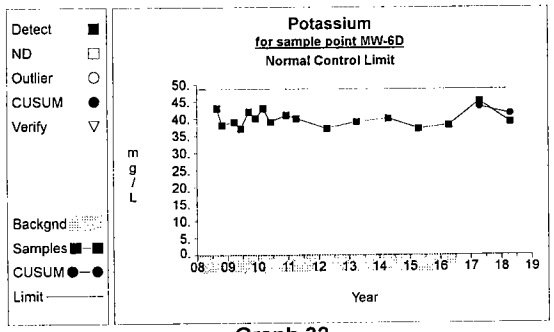
Graph 29



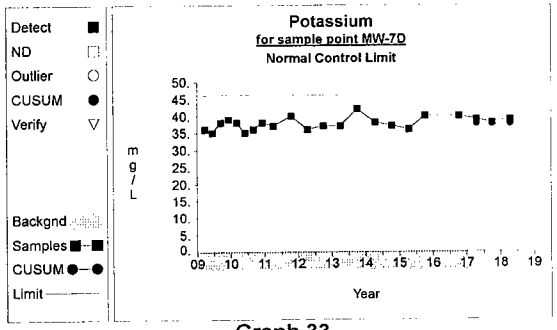
Graph 30



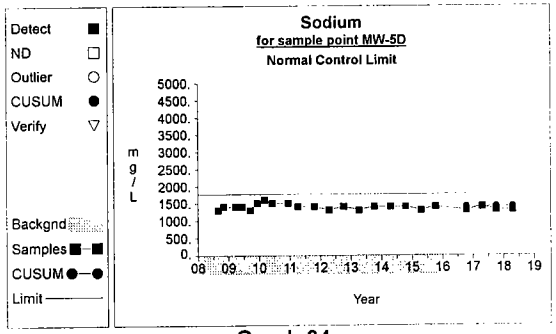
Graph 31



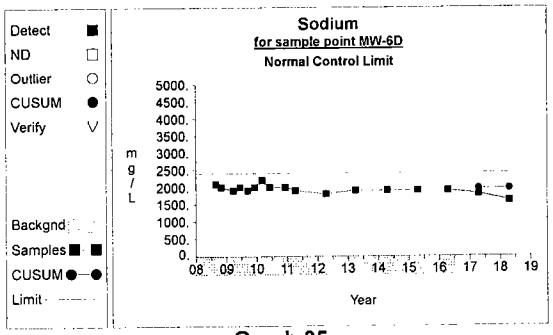
Graph 32



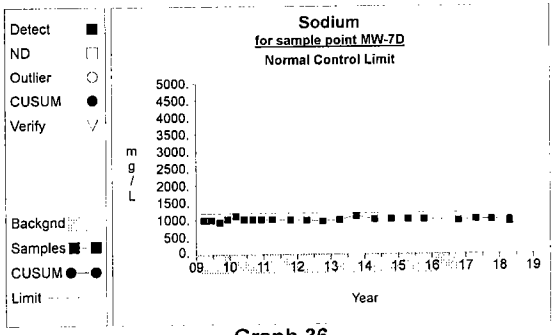
Graph 33



Graph 34



Graph 35

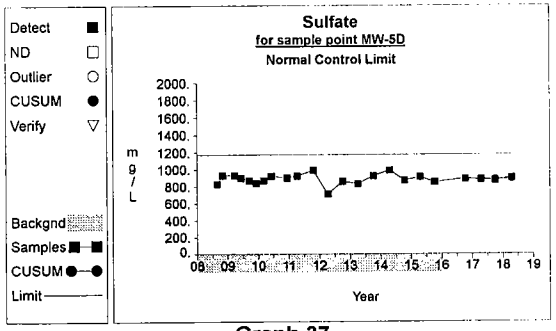


Graph 36

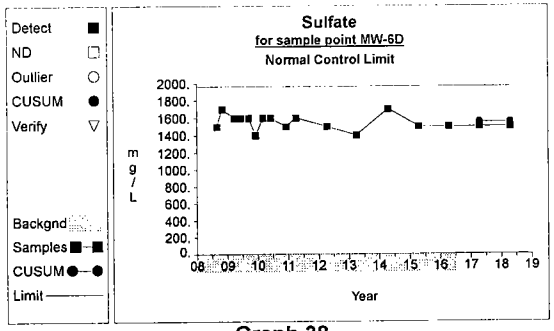
Tekoi Landfill

Analysis prepared on: 6/4/2018

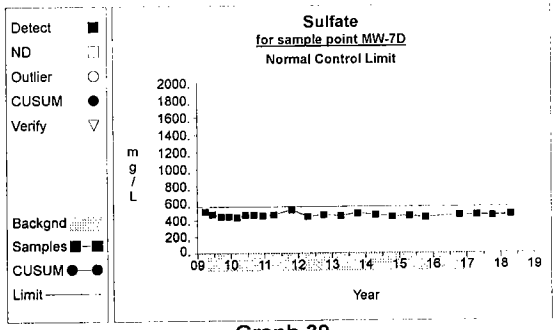
Intra-Well Control Charts / Prediction Limits



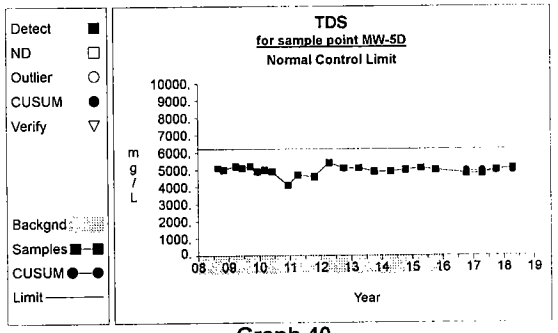
Graph 37



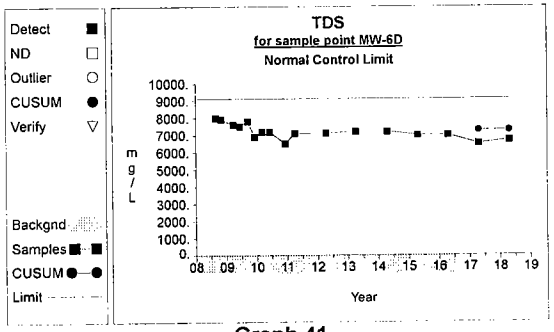
Graph 38



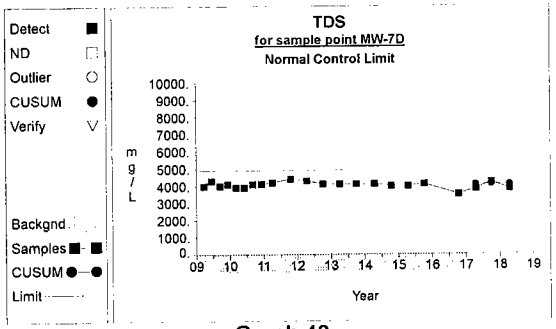
Graph 39



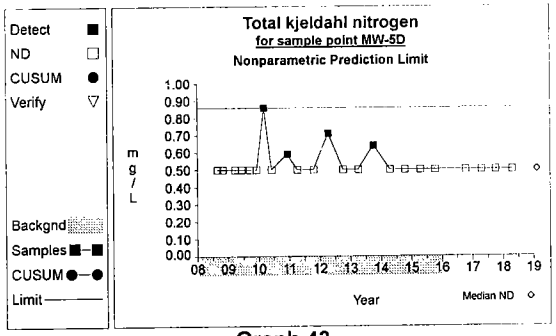
Graph 40



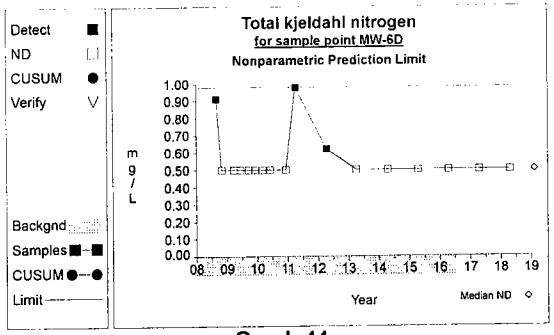
Graph 41



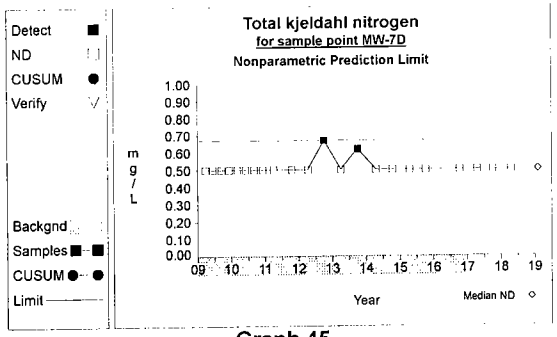
Graph 42



Graph 43



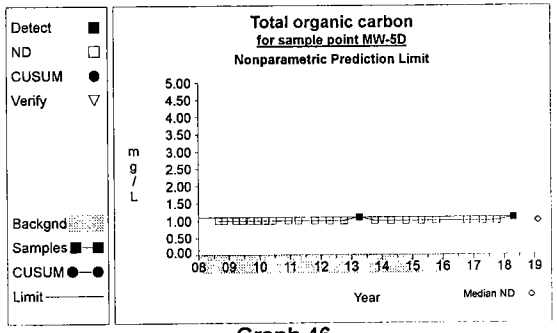
Graph 44



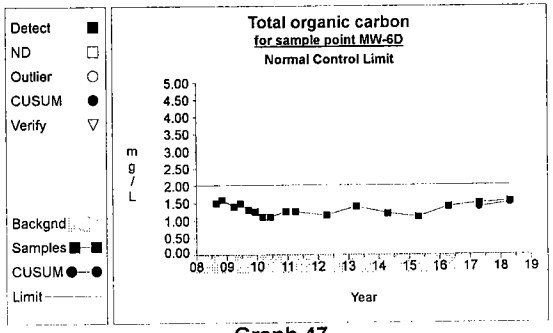
Graph 45

Prepared by: The Carel Corporation

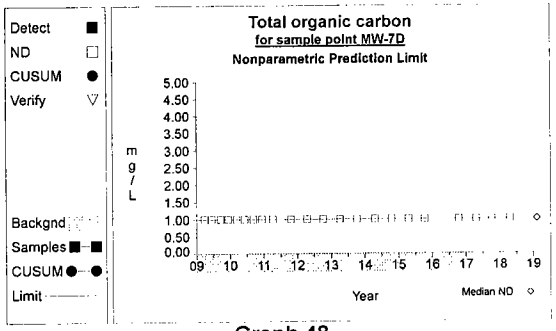
Intra-Well Control Charts / Prediction Limits



Graph 46

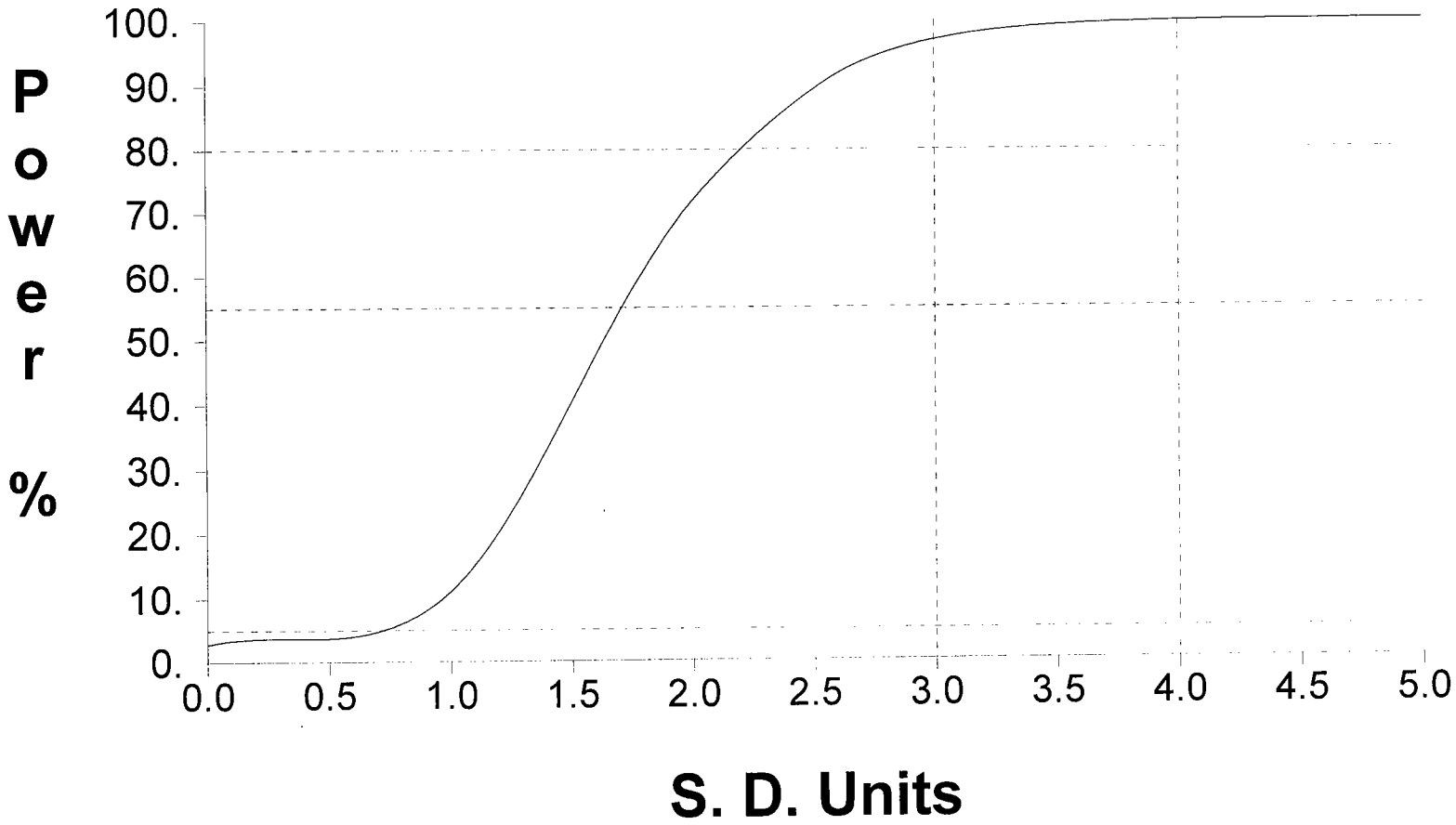


Graph 47



Graph 48

False Positive and False Negative Rates for Current Intra-Well Control Charts Monitoring Program



METALS

Table 1

Summary Statistics and Intermediate Computations for Combined Shewhart-CUSUM Control Charts

Constituent	Units	Well	N(back)	N(mon)	N(tot)	Mean	SD	R(i-1)	R(i)	S(i-1)	S(i)	Limit	Type	Conf	
Antimony	mg/L	MW-5D	14	3	17			0.0100	0.0100			0.0100	nonpar	.99	**
Antimony	mg/L	MW-6D	15	2	17			0.0100	0.0100			0.0100	nonpar	.99	**
Antimony	mg/L	MW-7D	12	4	16			0.0100	0.0100			0.0100	nonpar	.99	**
Arsenic	mg/L	MW-5D	14	3	17			0.0150	0.0150			0.0150	nonpar	.99	**
Arsenic	mg/L	MW-6D	15	2	17			0.0150	0.0150			0.0190	nonpar	.99	**
Arsenic	mg/L	MW-7D	12	4	16			0.0150	0.0150			0.0150	nonpar	.99	**
Barium	mg/L	MW-5D	14	3	17	0.0274	0.0060	0.0230	0.0250	0.0274	0.0274	0.0544	normal		
Barium	mg/L	MW-6D	15	2	17	0.0345	0.0069	0.0280	0.0280	0.0345	0.0345	0.0656	normal		
Barium	mg/L	MW-7D	12	4	16	0.0508	0.0024	0.0450	0.0470	0.0508	0.0508	0.0616	normal		
Beryllium	mg/L	MW-5D	14	3	17			0.0010	0.0010			0.0010	nonpar	.99	**
Beryllium	mg/L	MW-6D	15	2	17			0.0010	0.0010			0.0010	nonpar	.99	**
Beryllium	mg/L	MW-7D	12	4	16			0.0010	0.0010			0.0010	nonpar	.99	**
Cadmium	mg/L	MW-5D	14	3	17			0.0050	0.0050			0.0050	nonpar	.99	**
Cadmium	mg/L	MW-6D	15	2	17			0.0050	0.0050			0.0050	nonpar	.99	**
Cadmium	mg/L	MW-7D	12	4	16			0.0050	0.0050			0.0050	nonpar	.99	**
Chromium	mg/L	MW-5D	14	3	17	0.0160	0.0106	0.0100	0.0100	0.0160	0.0160	0.0638	normal		
Chromium	mg/L	MW-6D	15	2	17			0.0100	0.0100			0.0100	nonpar	.99	**
Chromium	mg/L	MW-7D	12	4	16			0.0100	0.0100			0.0210	nonpar	.99	**
Cobalt	mg/L	MW-5D	14	3	17			0.0100	0.0100			0.0100	nonpar	.99	**
Cobalt	mg/L	MW-6D	15	2	17			0.0100	0.0100			0.0100	nonpar	.99	**
Cobalt	mg/L	MW-7D	12	4	16			0.0100	0.0100			0.0100	nonpar	.99	**
Copper	mg/L	MW-5D	14	3	17			0.0150	0.0150			0.0150	nonpar	.99	**
Copper	mg/L	MW-6D	15	2	17			0.0150	0.0150			0.0150	nonpar	.99	**
Copper	mg/L	MW-7D	12	4	16			0.0150	0.0150			0.0150	nonpar	.99	**
Lead	mg/L	MW-5D	14	3	17			0.0090	0.0090			0.0090	nonpar	.99	**
Lead	mg/L	MW-6D	15	2	17			0.0090	0.0090			0.0090	nonpar	.99	**
Lead	mg/L	MW-7D	12	4	16			0.0090	0.0090			0.0090	nonpar	.99	**
Mercury	mg/L	MW-5D	13	3	16			0.0002	0.0002			0.0002	nonpar	.99	**
Mercury	mg/L	MW-6D	14	2	16			0.0002	0.0002			0.0002	nonpar	.99	**
Mercury	mg/L	MW-7D	12	4	16			0.0002	0.0002			0.0002	nonpar	.99	**
Nickel	mg/L	MW-5D	14	3	17			0.0400	0.0400			0.0400	nonpar	.99	**
Nickel	mg/L	MW-6D	15	2	17			0.0400	0.0400			0.0400	nonpar	.99	**
Nickel	mg/L	MW-7D	12	4	16			0.0400	0.0400			0.0400	nonpar	.99	**
Selenium	mg/L	MW-5D	14	3	17			0.0150	0.0150			0.0150	nonpar	.99	**
Selenium	mg/L	MW-6D	15	2	17			0.0150	0.0150			0.0150	nonpar	.99	**
Selenium	mg/L	MW-7D	12	4	16			0.0150	0.0150			0.0150	nonpar	.99	**
Silver	mg/L	MW-5D	14	3	17			0.0100	0.0100			0.0100	nonpar	.99	**

N(back) and N(mon) = Non-outlier measurements in the background and monitoring periods.
N(tot) = All independent measurements for that constituent and well.
For transformed data, mean and SD in transformed units and control limit in original units.
Conf = confidence level for passing initial test or one of two verification resamples (nonparametric test only).
* - Insufficient Data.
** - Detection Frequency < 25%.
*** - Zero Variance.

Table 1

Summary Statistics and Intermediate Computations for Combined Shewhart-CUSUM Control Charts

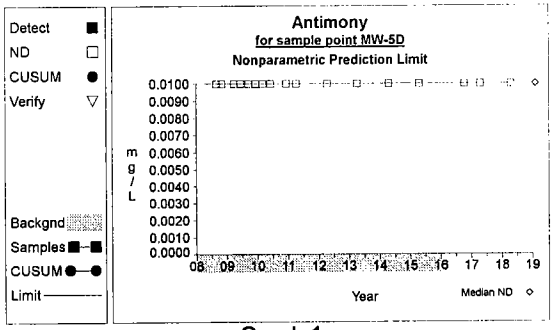
Constituent	Units	Well	N(back)	N(mon)	N(tot)	Mean	SD	R(i-1)	R(i)	S(i-1)	S(i)	Limit	Type	Conf	
Silver	mg/L	MW-6D	15	2	17			0.0100	0.0100			0.0100	nonpar	.99	**
Silver	mg/L	MW-7D	12	4	16			0.0100	0.0100			0.0100	nonpar	.99	**
Thallium	mg/L	MW-5D	14	3	17			0.0150	0.0150			0.0150	nonpar	.99	**
Thallium	mg/L	MW-6D	15	2	17			0.0150	0.0150			0.0150	nonpar	.99	**
Thallium	mg/L	MW-7D	12	4	16			0.0150	0.0150			0.0150	nonpar	.99	**
Vanadium	mg/L	MW-5D	14	3	17	0.0101	0.0004	0.0100	0.0100	0.0101	0.0101	0.0118	normal		
Vanadium	mg/L	MW-6D	15	2	17			0.0100	0.0100			0.0100	nonpar	.99	**
Vanadium	mg/L	MW-7D	12	4	16			0.0100	0.0100			0.0100	nonpar	.99	**
Zinc	mg/L	MW-5D	14	3	17			0.0200	0.0200			0.0200	nonpar	.99	**
Zinc	mg/L	MW-6D	15	2	17			0.0200	0.0200			0.0290	nonpar	.99	**
Zinc	mg/L	MW-7D	12	4	16			0.0200	0.0200			0.0200	nonpar	.99	**

N(back) and N(mon) = Non-outlier measurements in the background and monitoring periods.
N(tot) = All independent measurements for that constituent and well.
For transformed data, mean and SD in transformed units and control limit in original units.
Conf = confidence level for passing initial test or one of two verification resamples (nonparametric test only).
* - Insufficient Data.
** - Detection Frequency < 25%.
*** - Zero Variance.

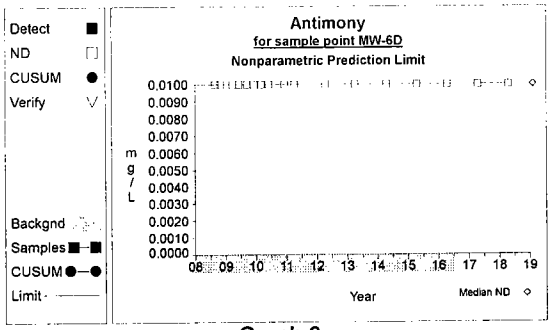
Tekoi Landfill [TEKMETS]

Analysis prepared on: 6/4/2018

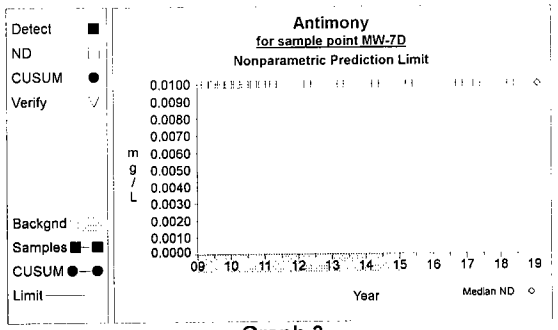
Intra-Well Control Charts / Prediction Limits



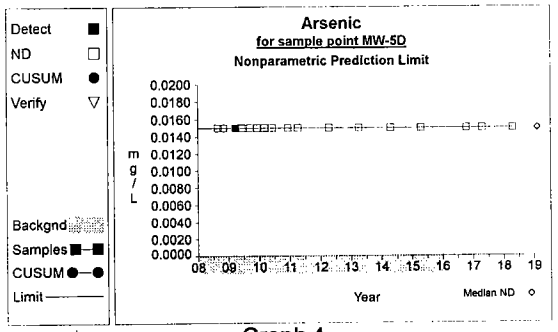
Graph 1



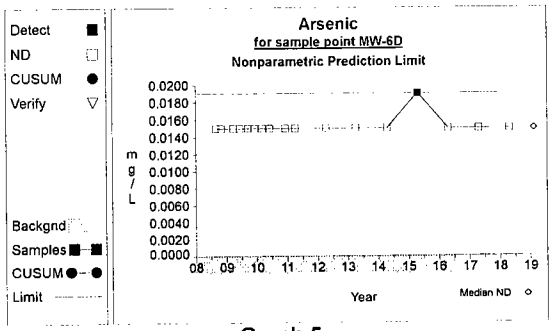
Graph 2



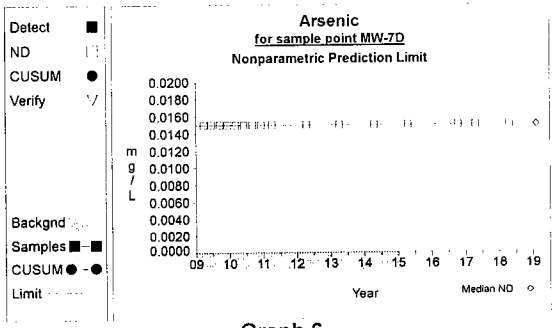
Graph 3



Graph 4



Graph 5



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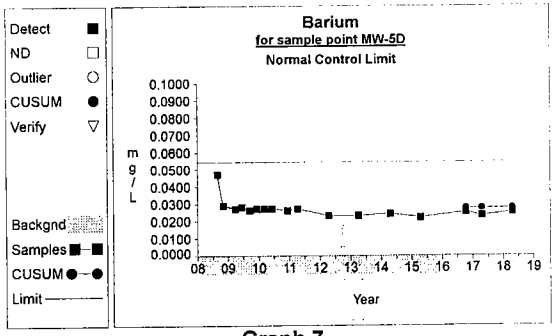

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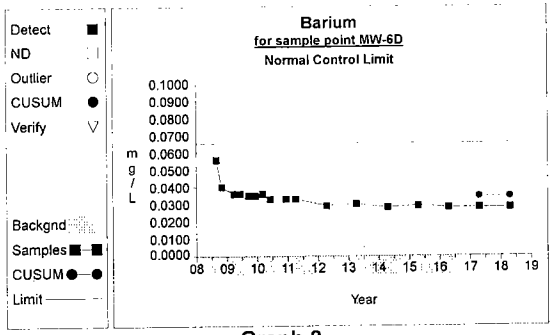

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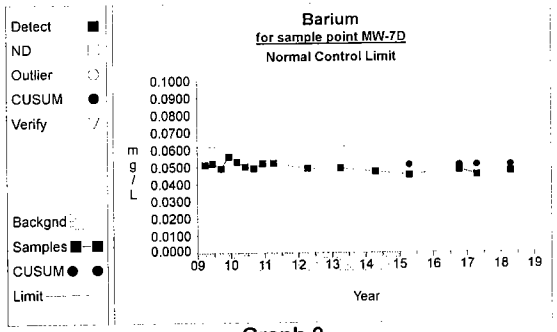
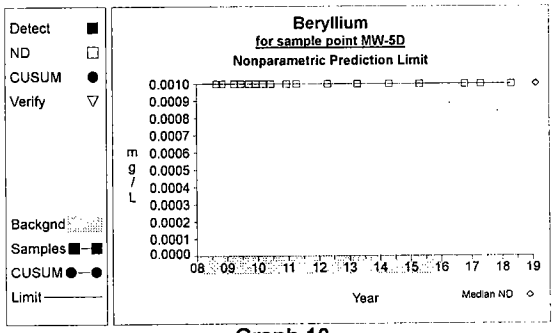


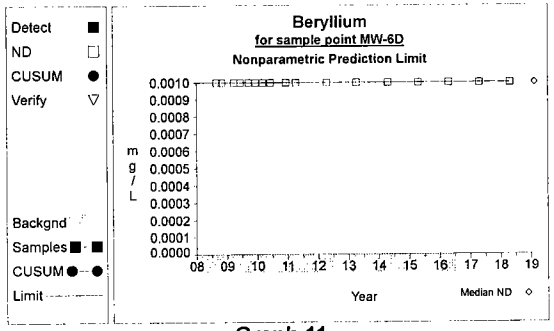
Graph 9

Prepared by: The Carel Corporation

Intra-Well Control Charts / Prediction Limits



Graph 10



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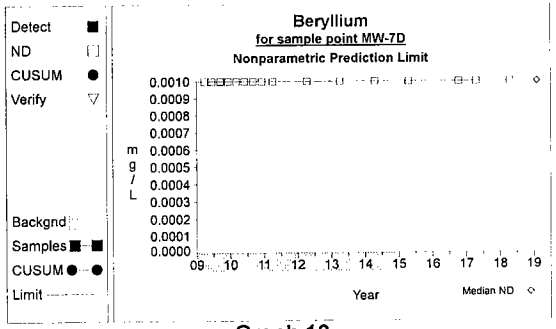
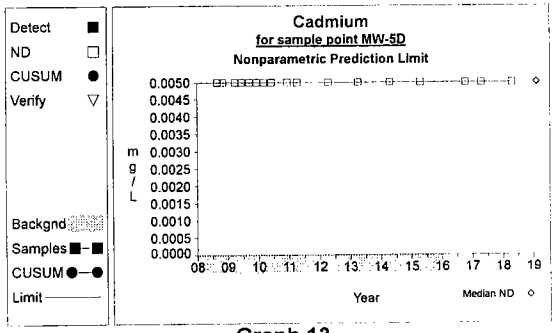
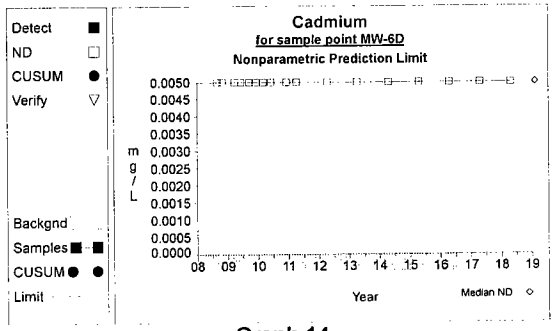


Graph 12



Graph 13



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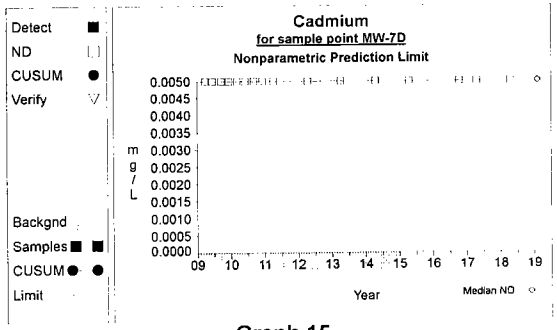
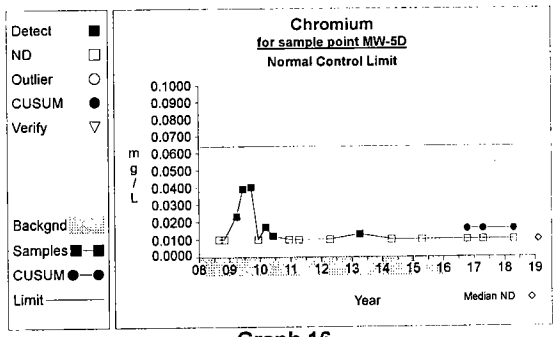
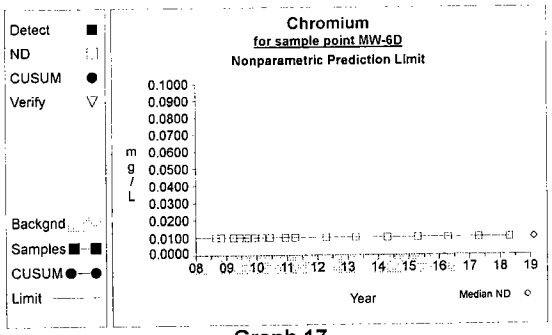


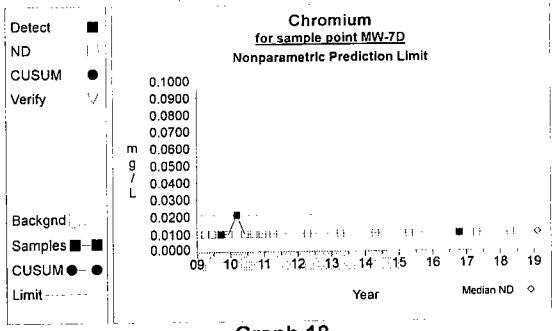
Graph 15



Graph 16

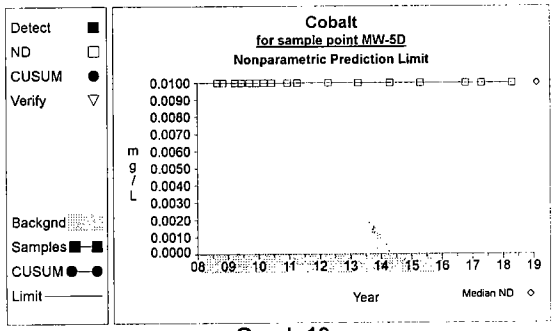


Graph 17

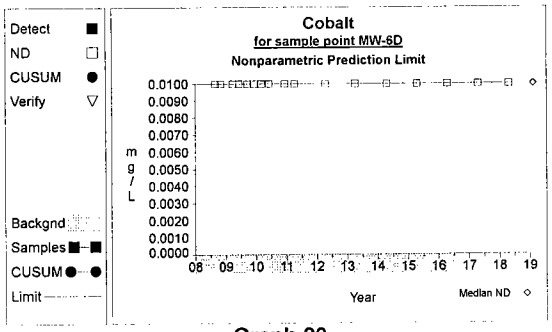


Graph 18

Intra-Well Control Charts / Prediction Limits



Graph 19



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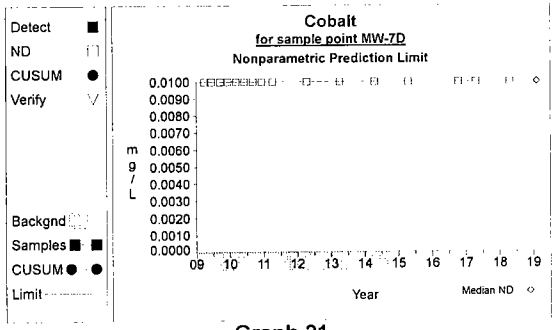

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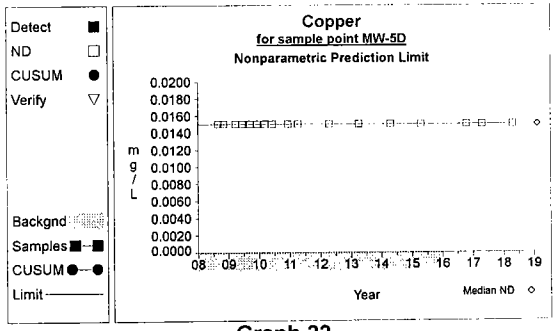

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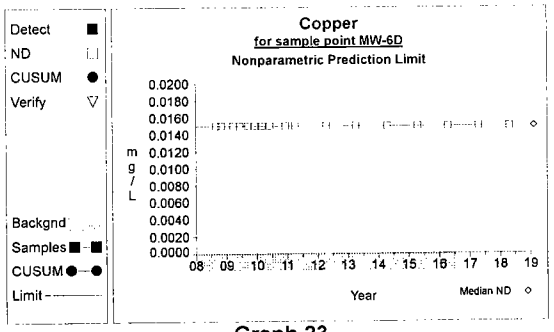

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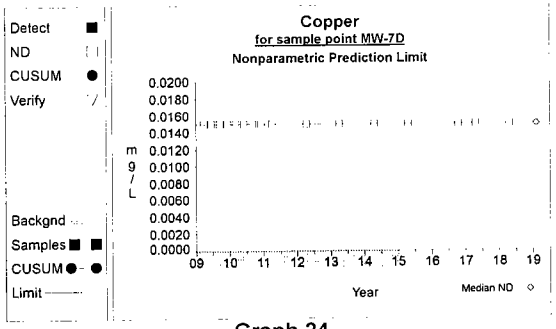

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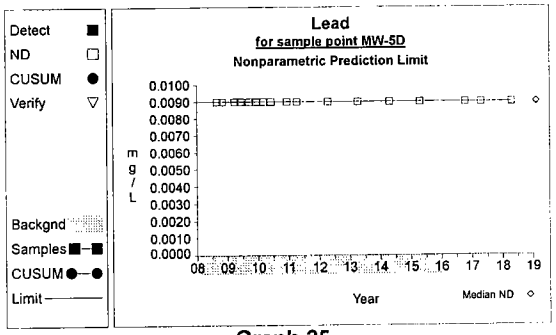

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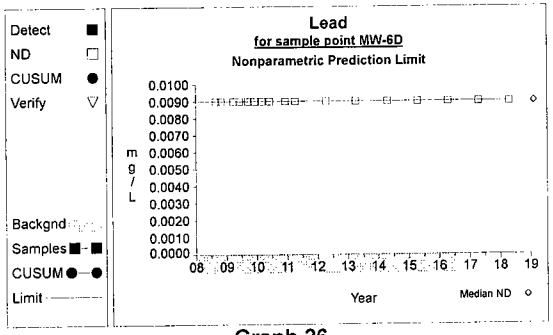
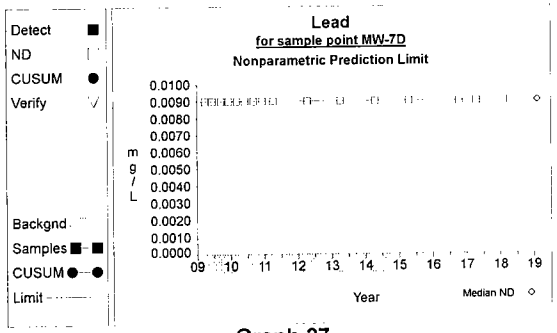
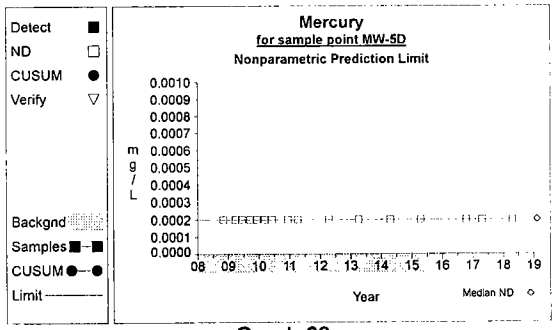


Graph 26

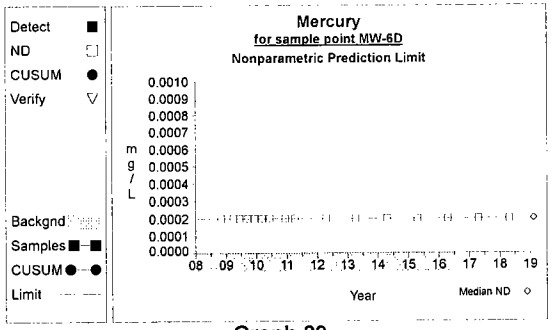


Graph 27

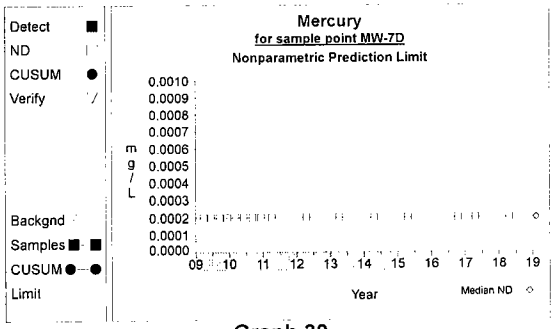
Intra-Well Control Charts / Prediction Limits



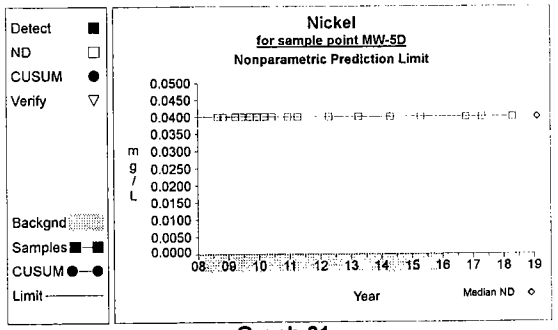
Graph 28



Graph 29



Graph 30



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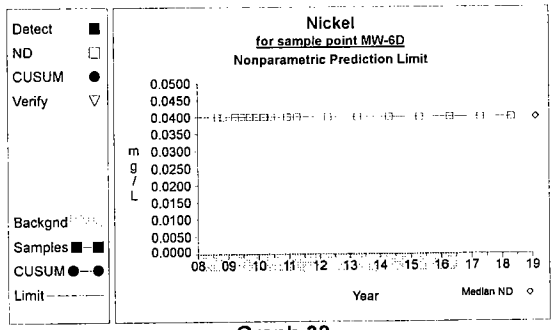

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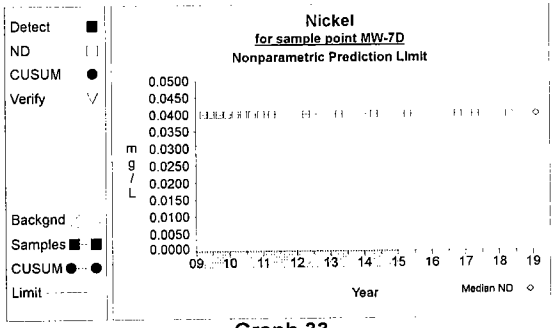

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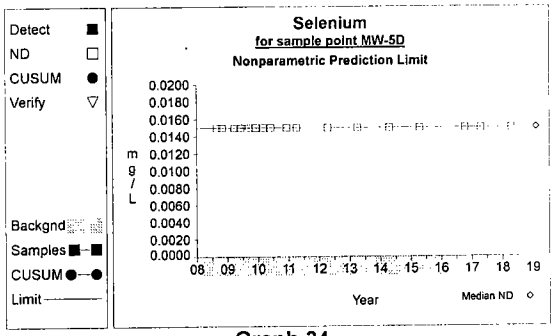

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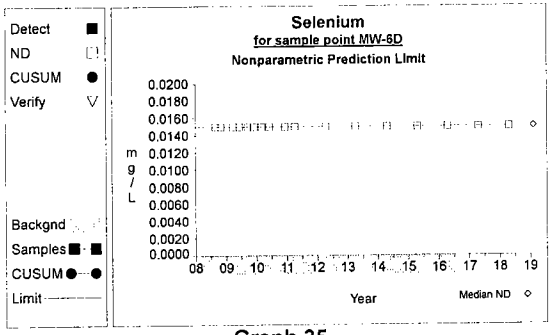
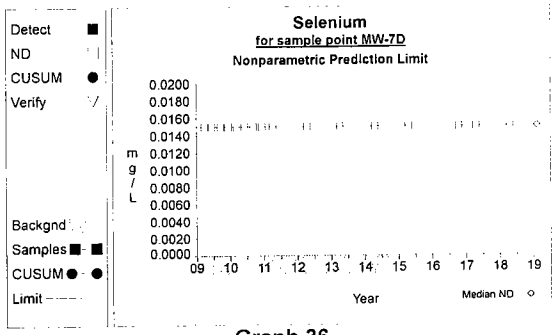
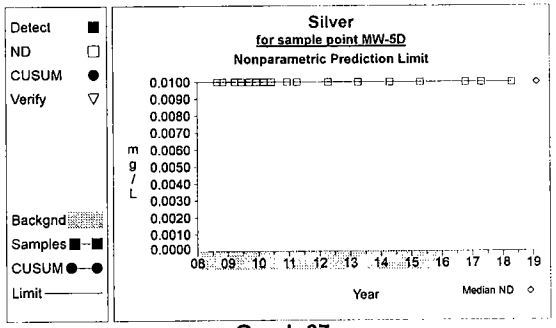


Graph 35

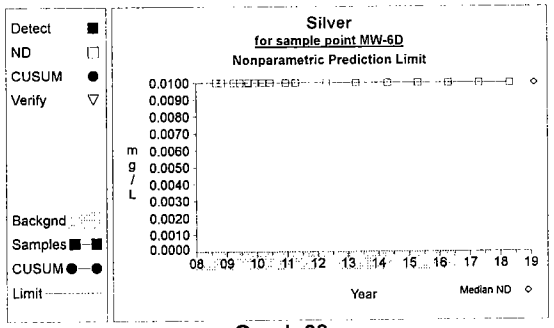


Graph 36

Intra-Well Control Charts / Prediction Limits



Graph 37



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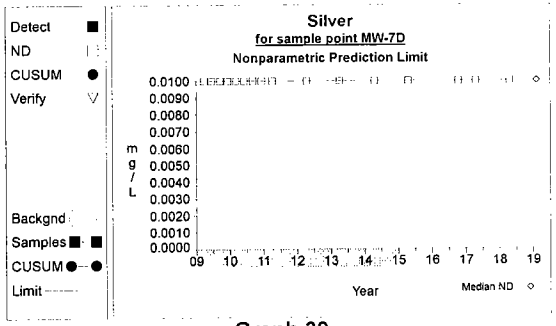

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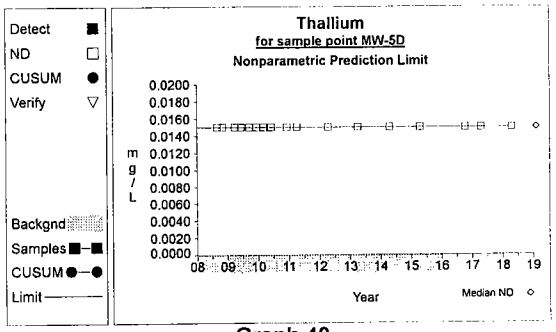

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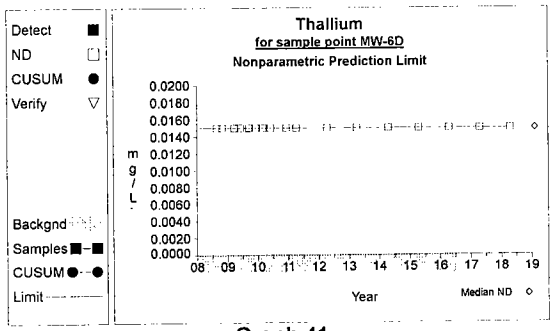

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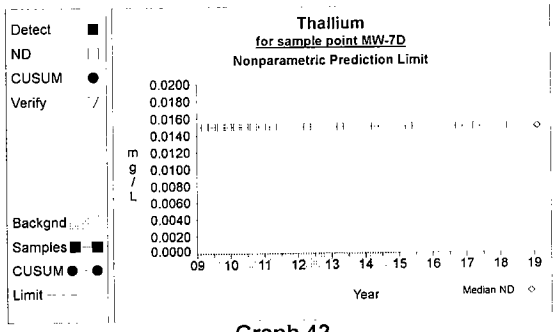
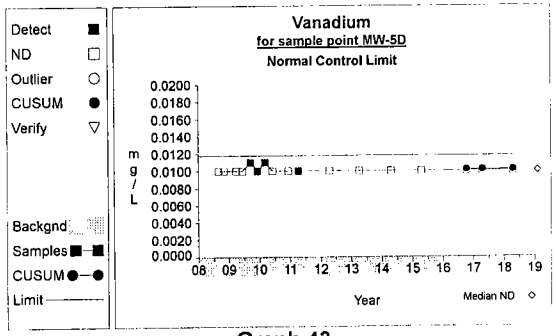
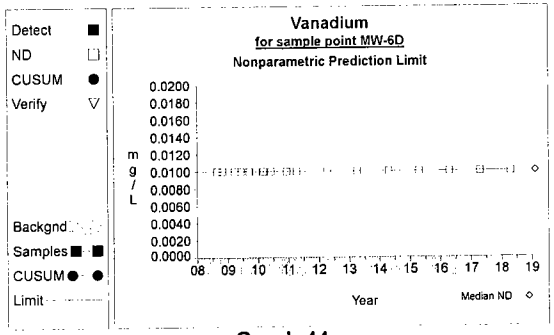


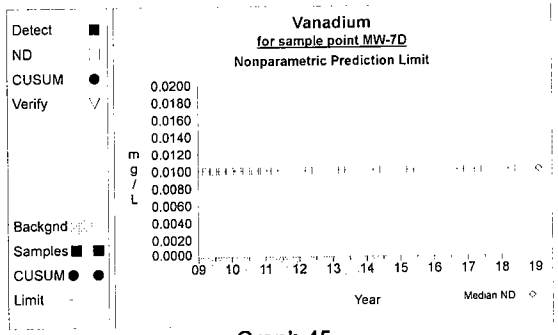
Graph 42



Graph 43

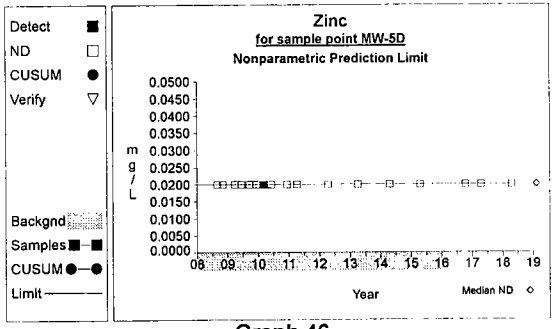


Graph 44

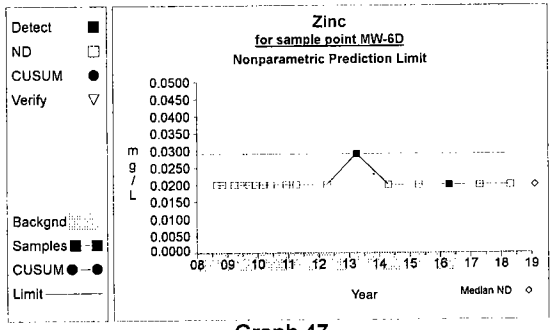


Graph 45

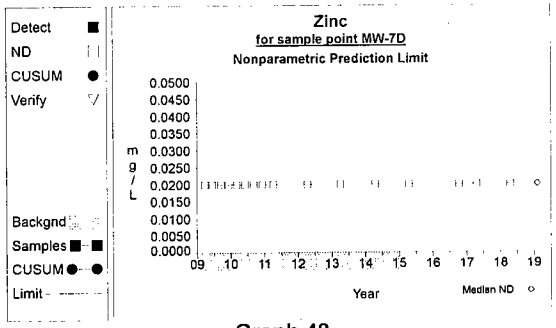
Intra-Well Control Charts / Prediction Limits



Graph 46

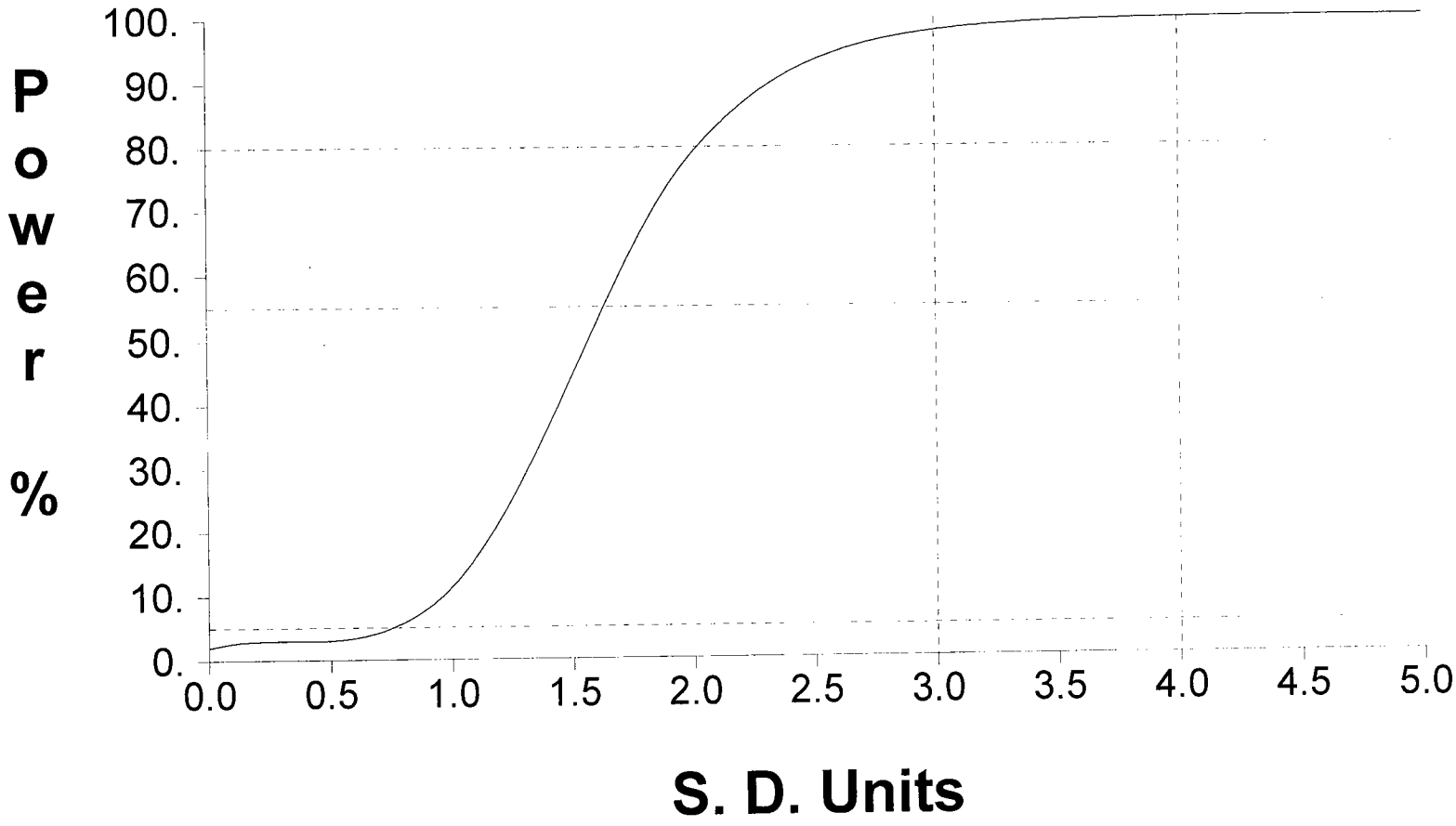


Graph 47



Graph 48

False Positive and False Negative Rates for Current Intra-Well Control Charts Monitoring Program

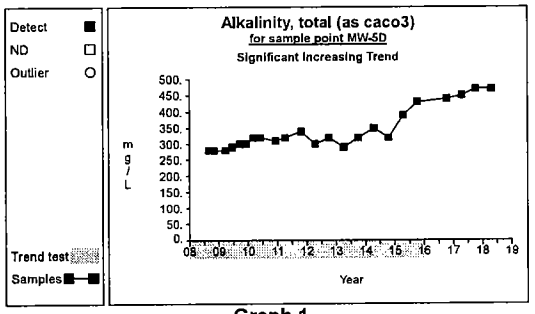


TIME SERIES PLOTS

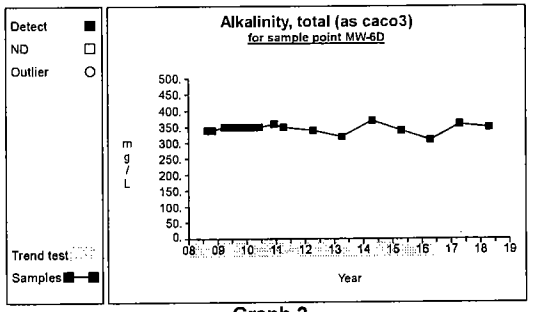
Tekoi Landfill

Analysis prepared on: 6/5/2018

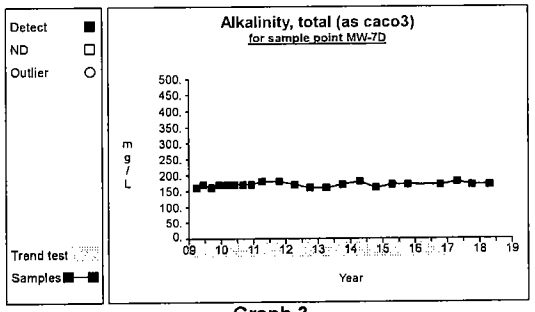
Time Series



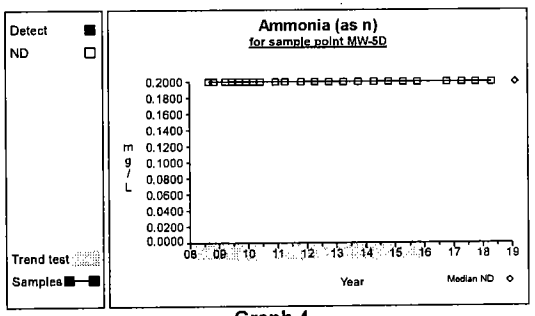
Graph 1



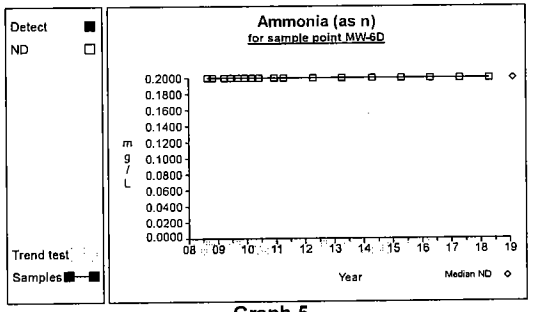
Graph 2



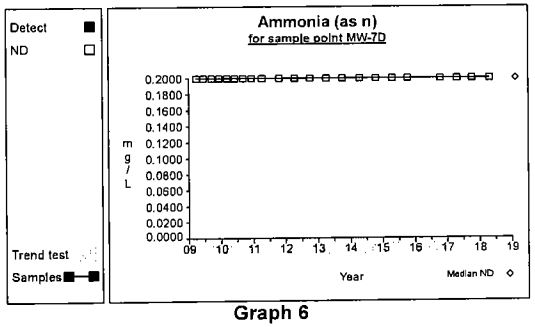
Graph 3



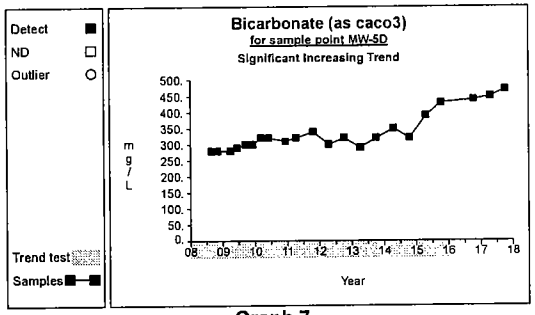
Graph 4



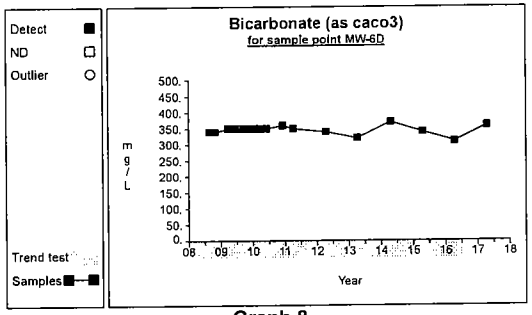
Graph 5



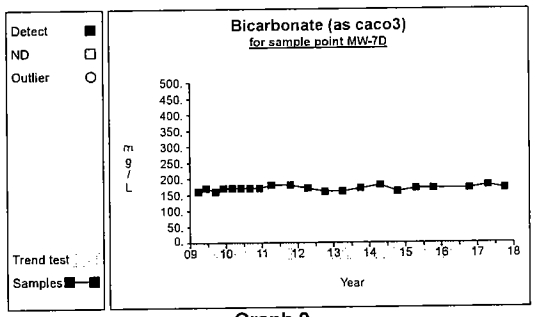
Graph 6



Graph 7



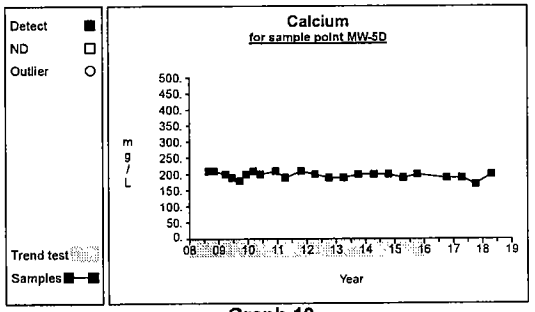
Graph 8



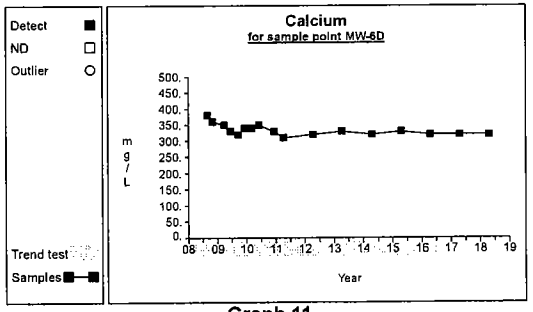
Graph 9

Prepared by: The Carel Corporation

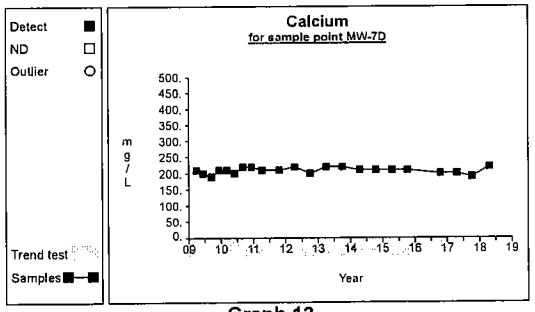
Time Series



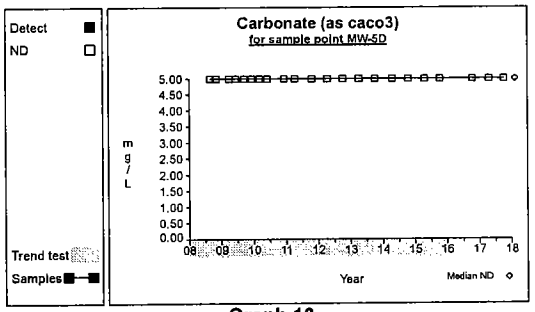
Graph 10



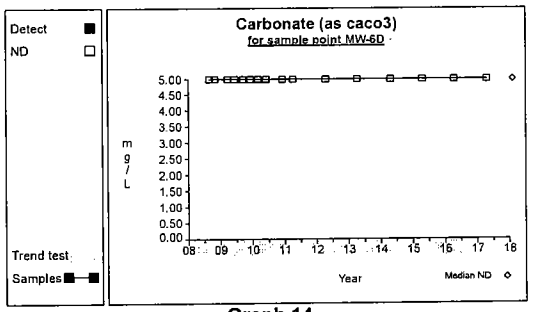
Graph 11



Graph 12



Graph 13



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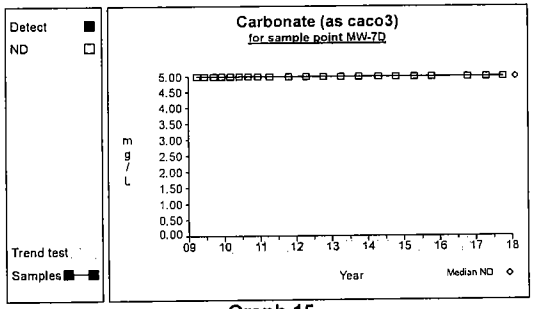

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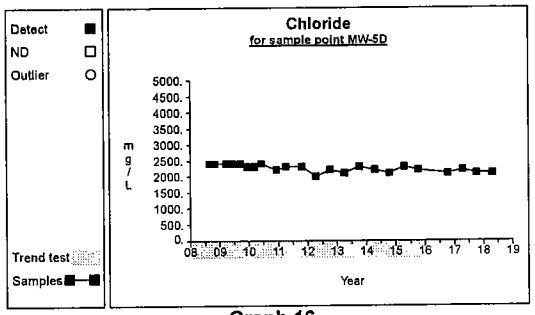

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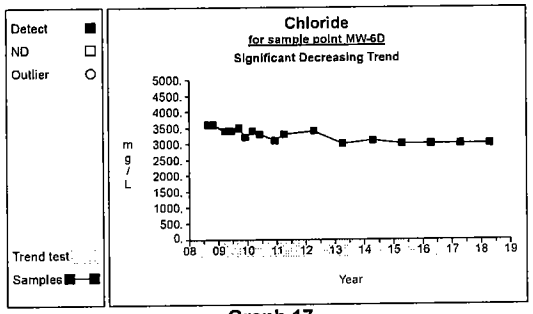
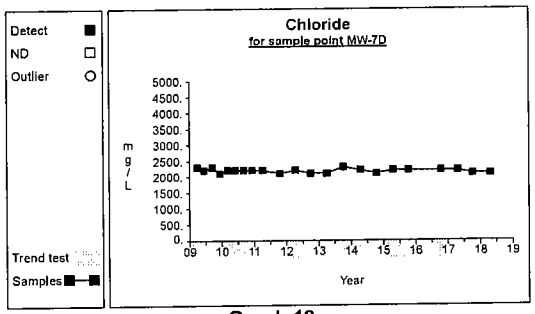
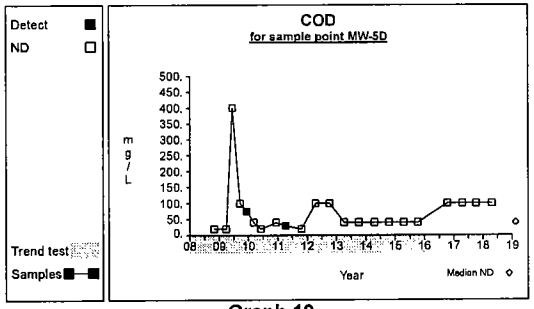


Graph 17



Graph 18

Time Series



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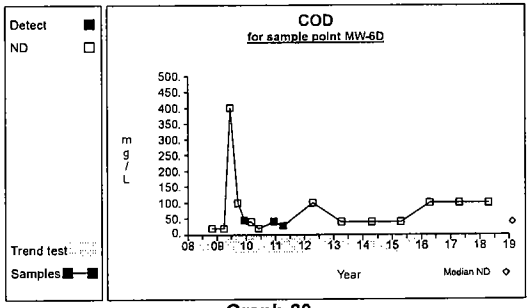

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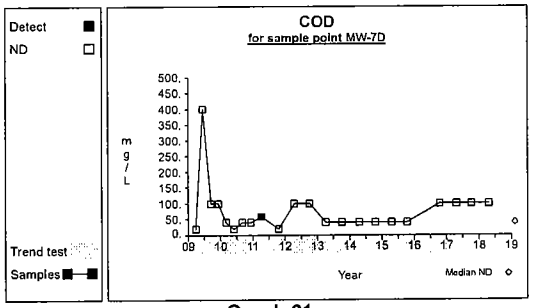

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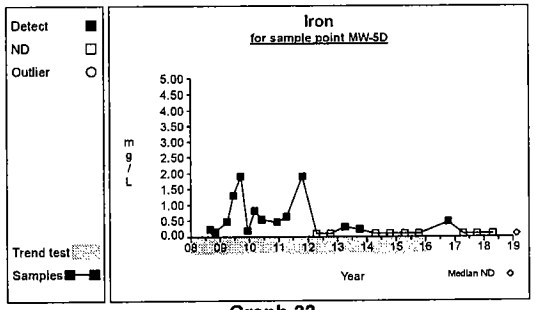

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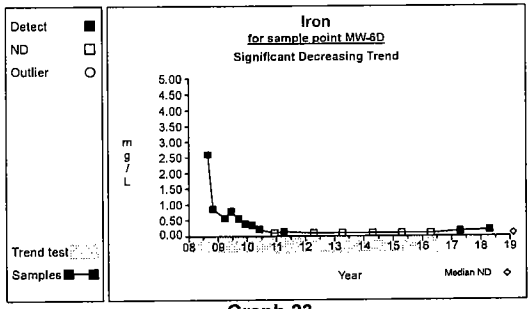

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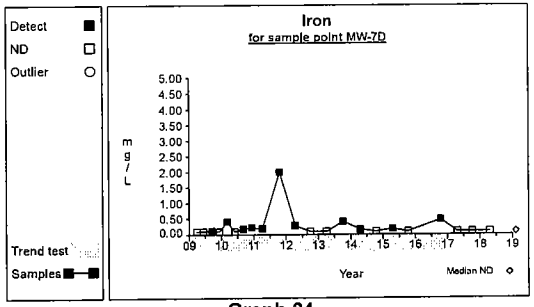

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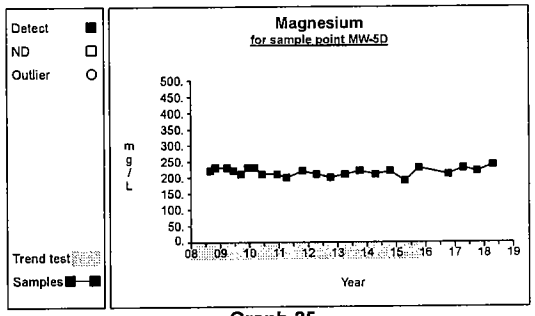

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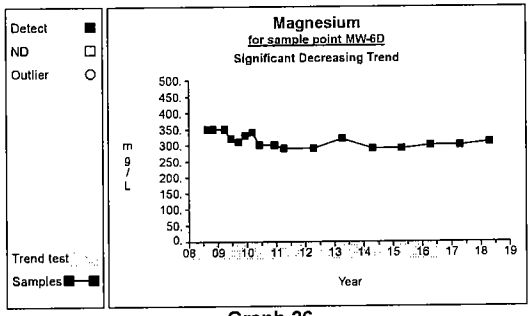

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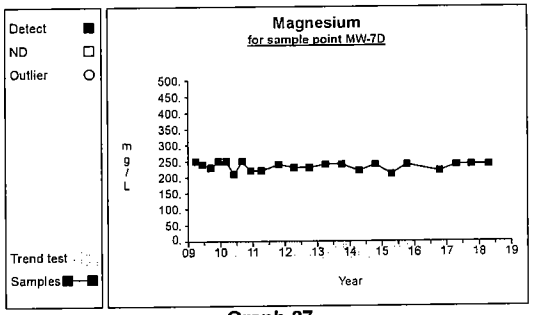
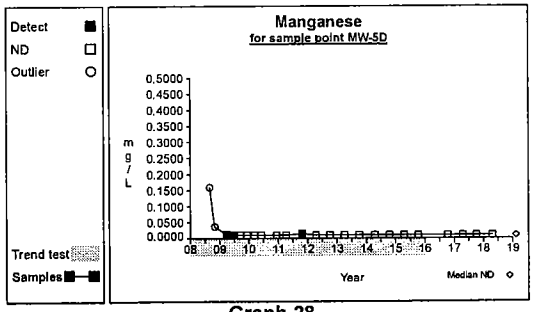


Graph 27

Time Series



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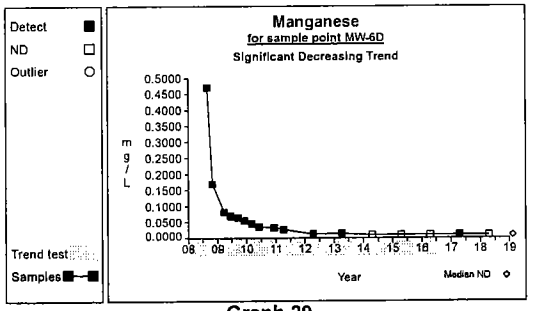

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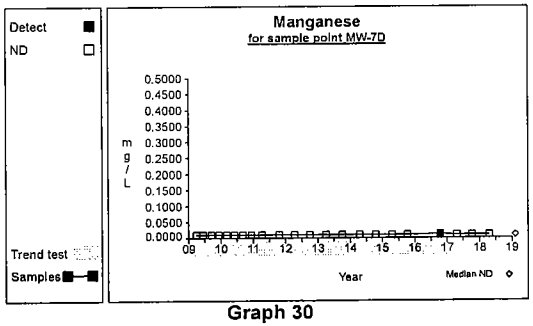

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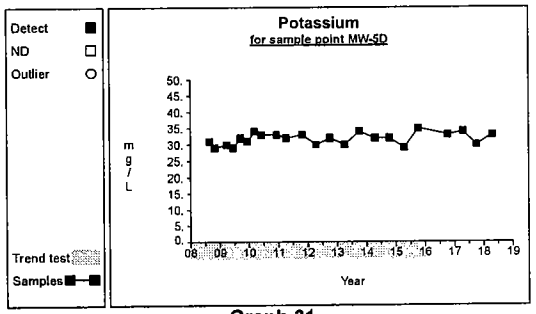

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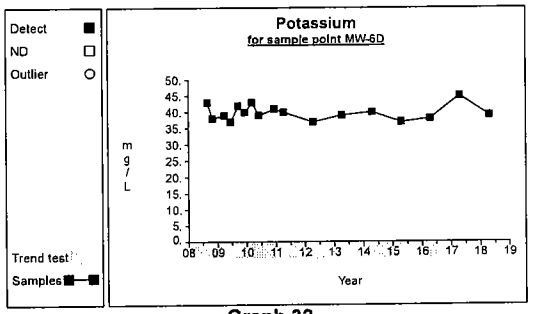

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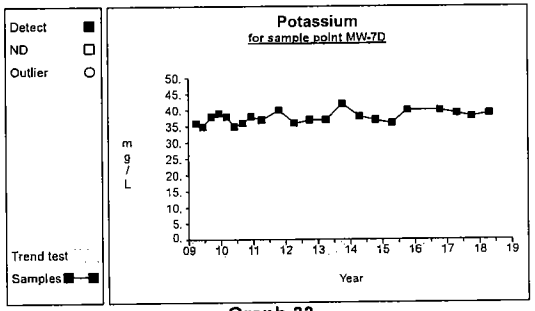

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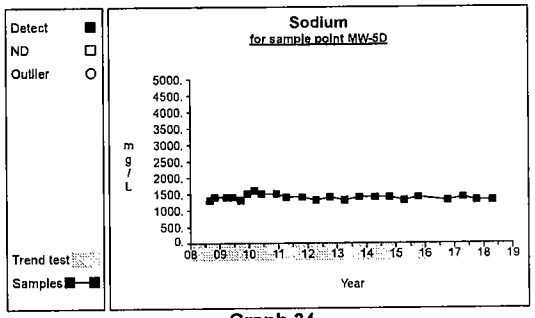

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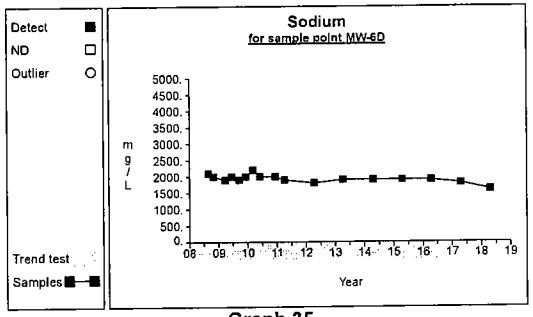

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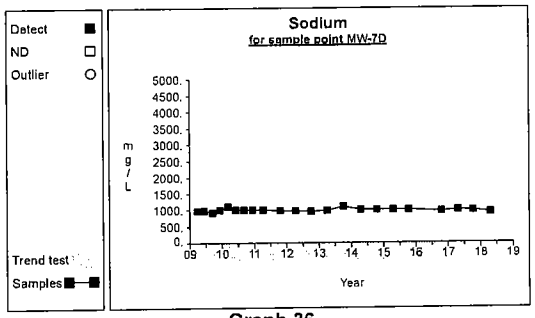

Graph 36

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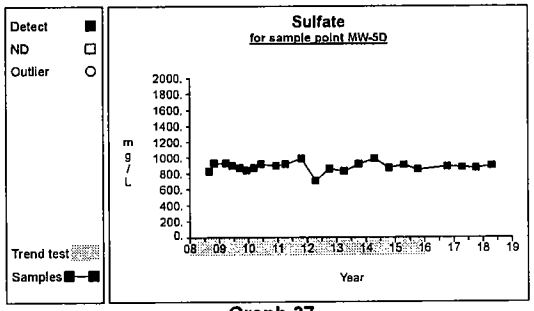
Time Series



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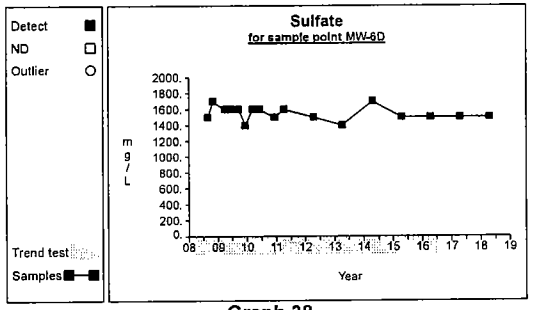

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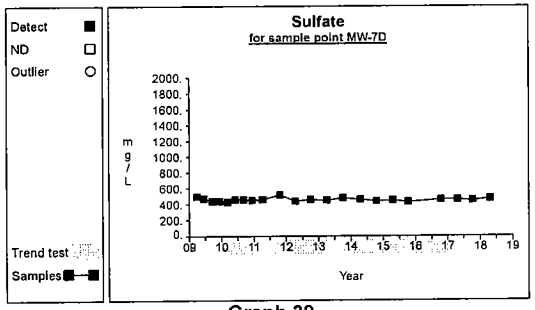

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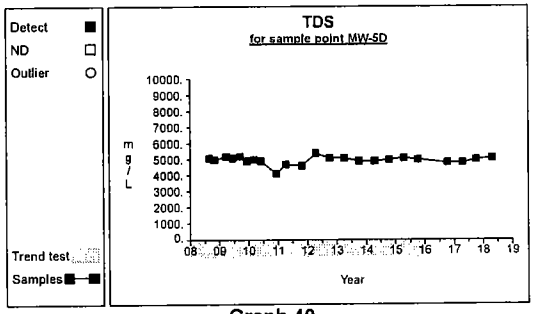

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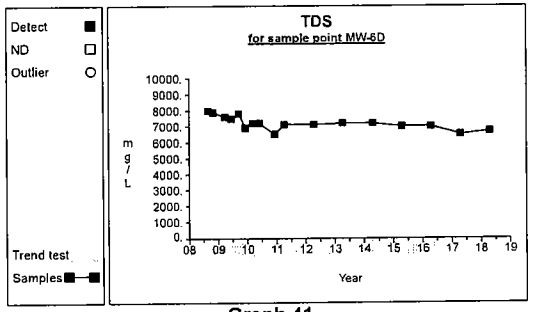

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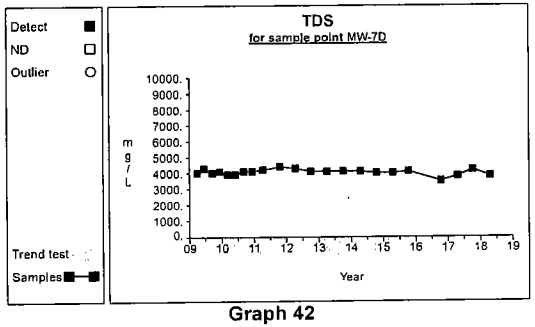

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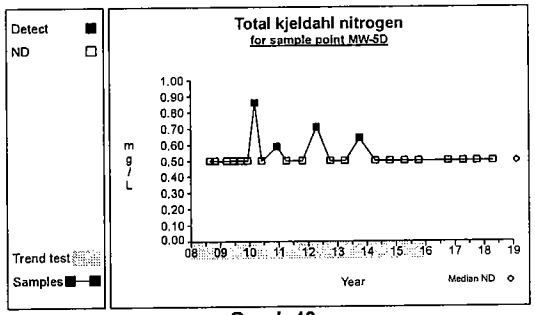

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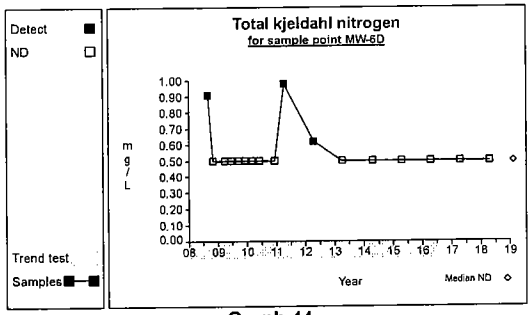

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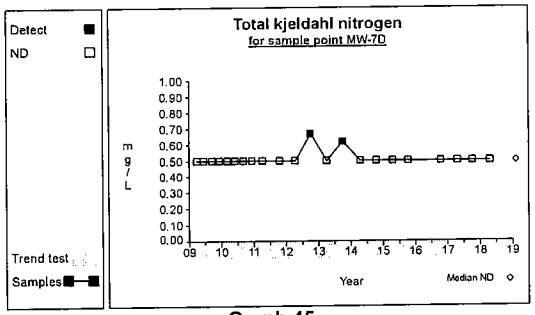
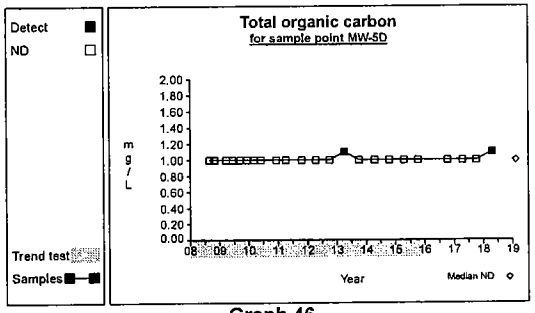


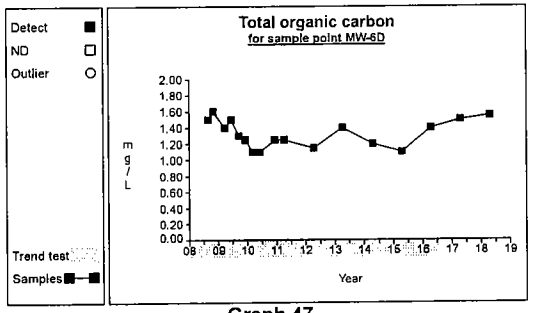
Graph 45

Prepared by: The Carel Corporation

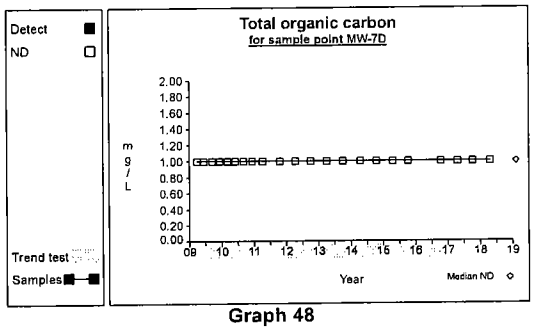
Time Series



Graph 46



Graph 47

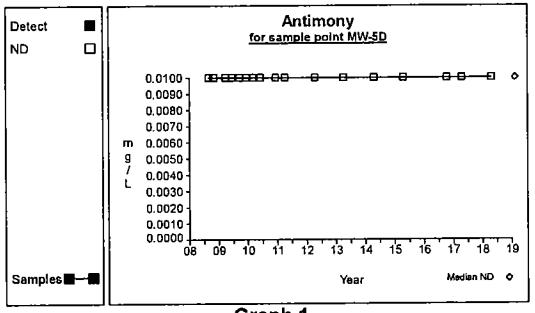


Graph 48

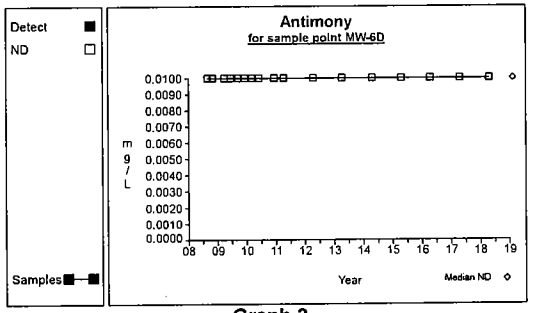
Tekoi Landfill [TEKMETS]

Analysis prepared on: 6/5/2018

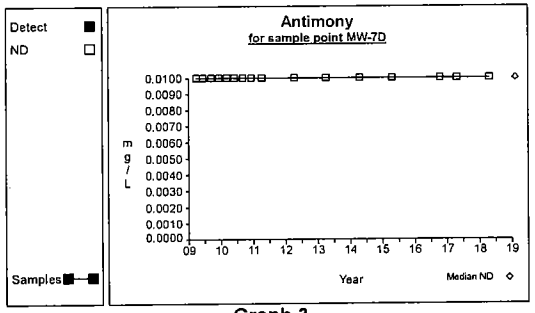
Time Series



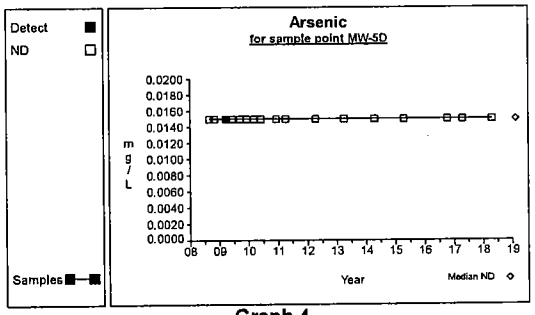
Graph 1



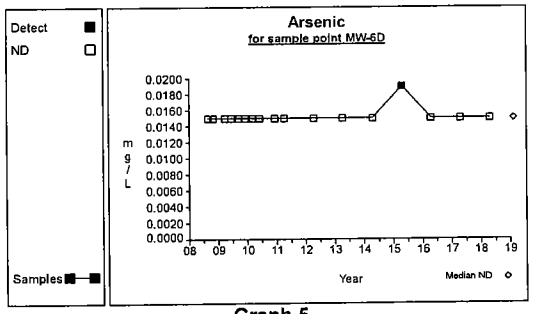
Graph 2



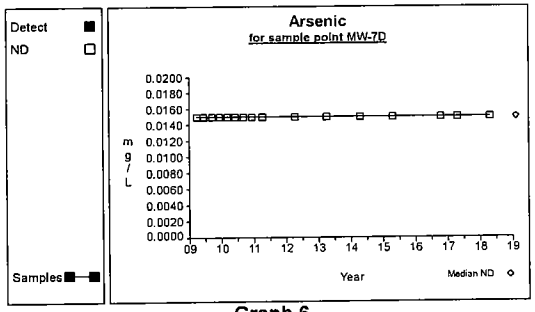
Graph 3



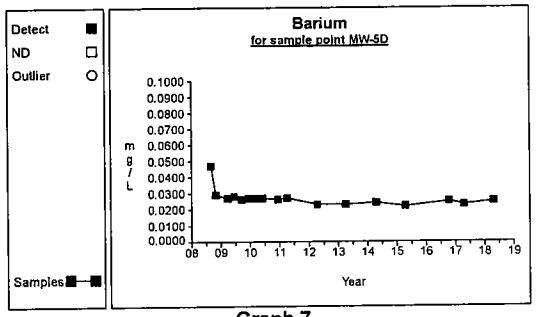
Graph 4



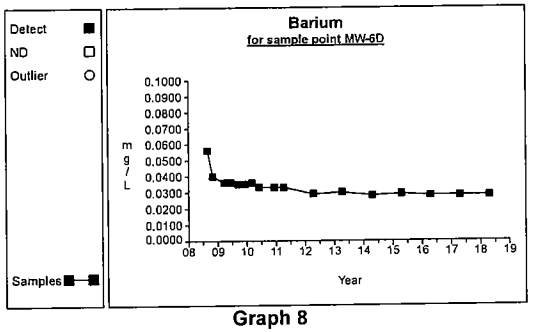
Graph 5



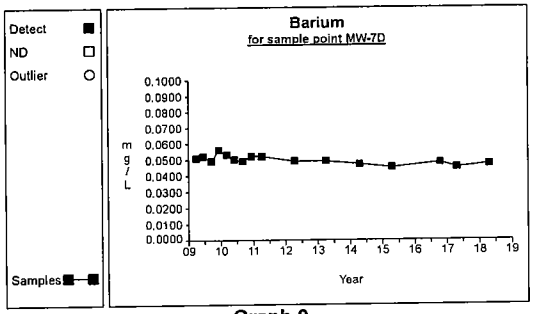
Graph 6



Graph 7



Graph 8



Graph 9

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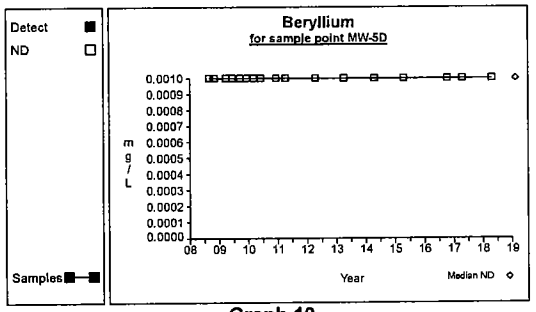
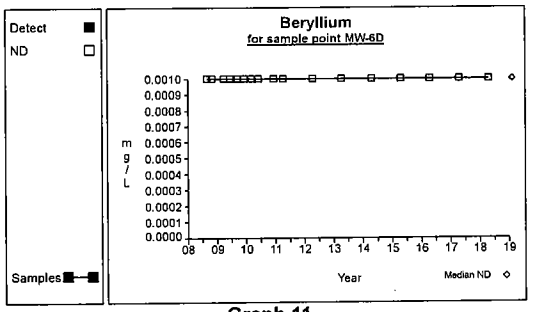
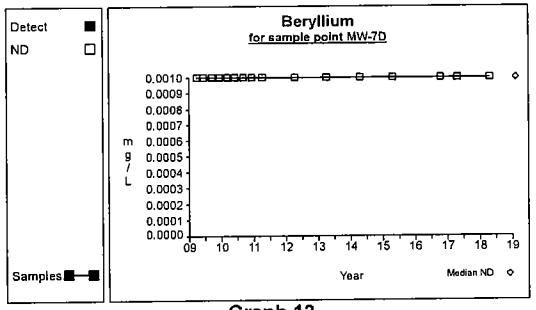
Time Series



Graph 10



Graph 11



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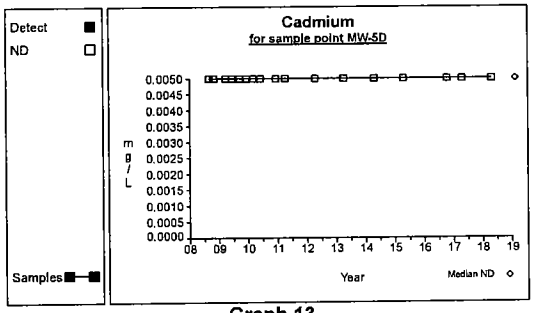

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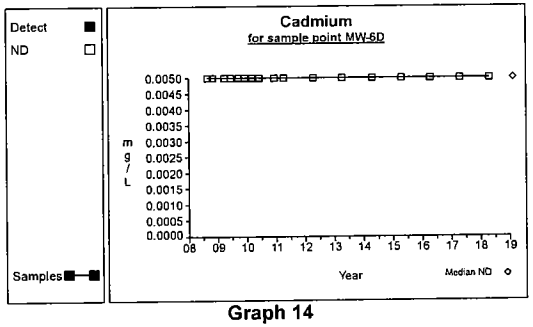

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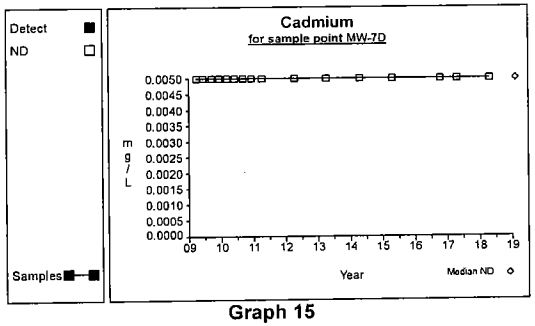
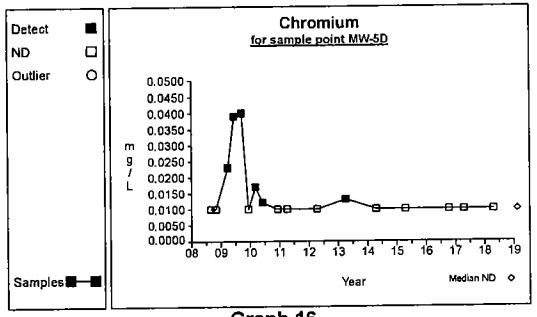
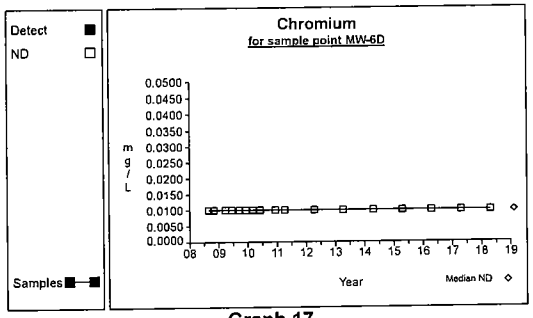


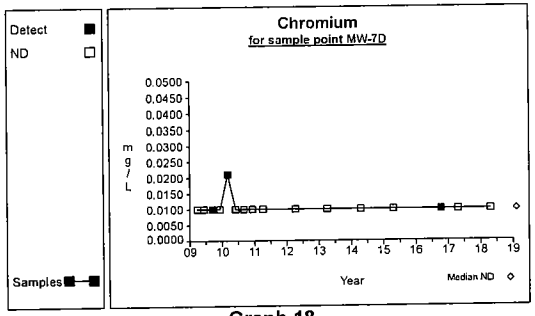
Graph 15



Graph 16

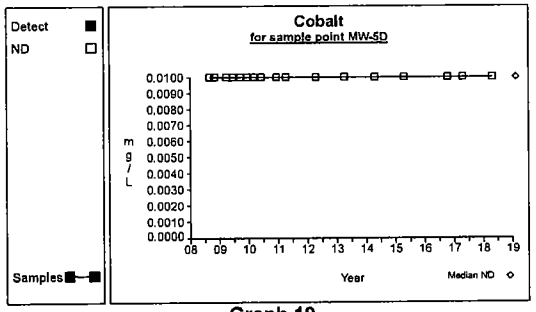


Graph 17

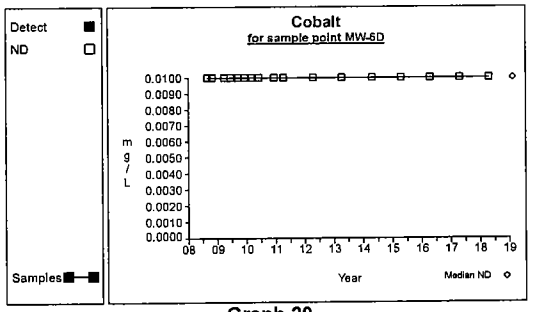


Graph 18

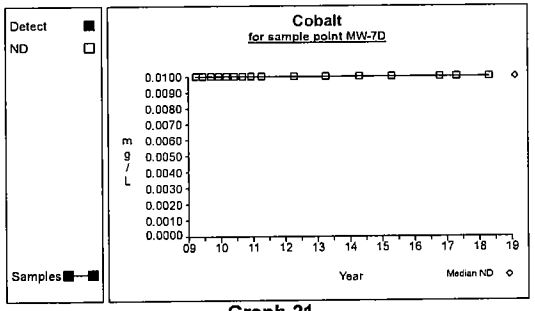
Time Series



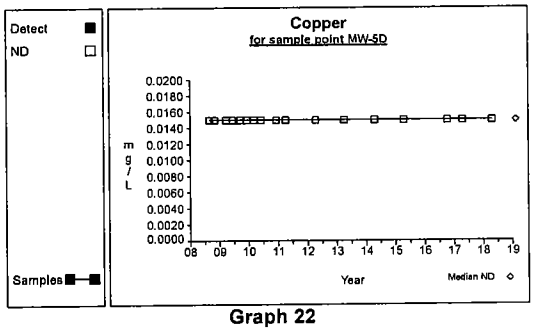
Graph 19



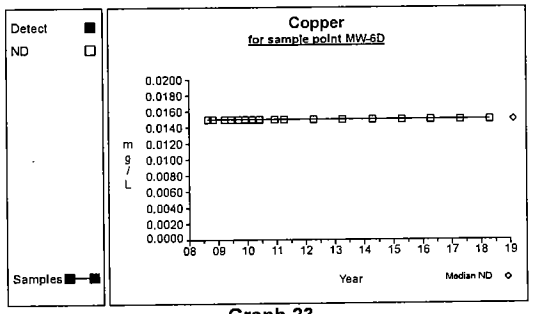
Graph 20



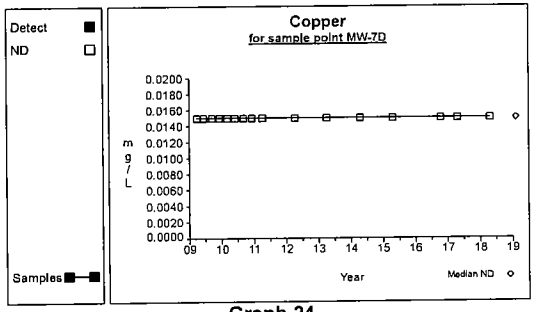
Graph 21



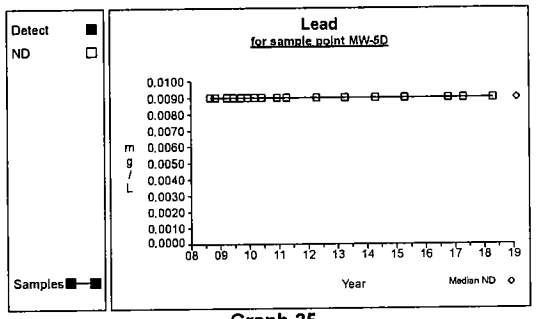
Graph 22



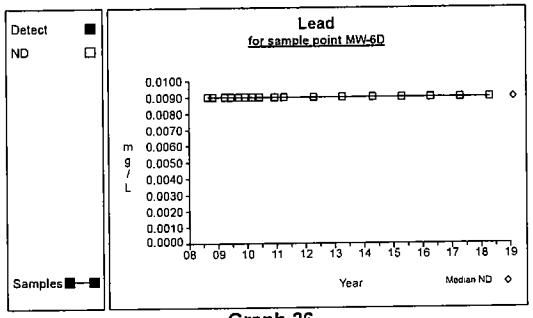
Graph 23



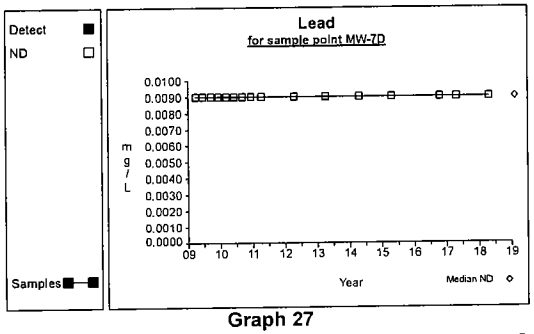
Graph 24



Graph 25

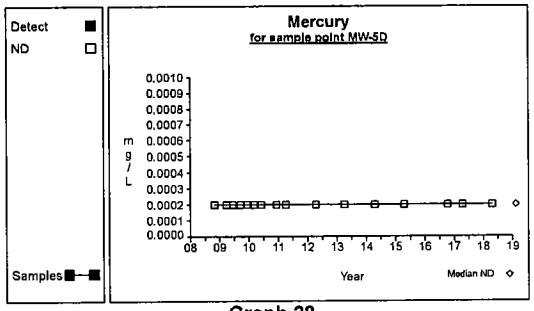


Graph 26

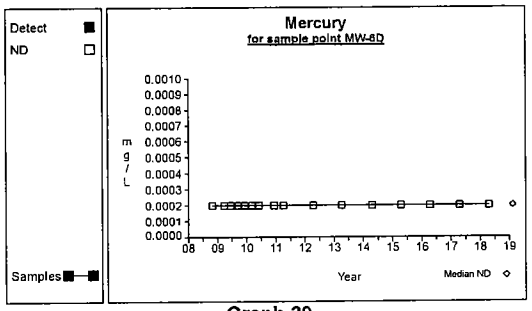


Graph 27

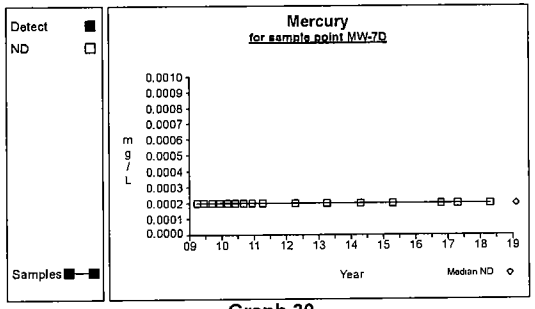
Time Series



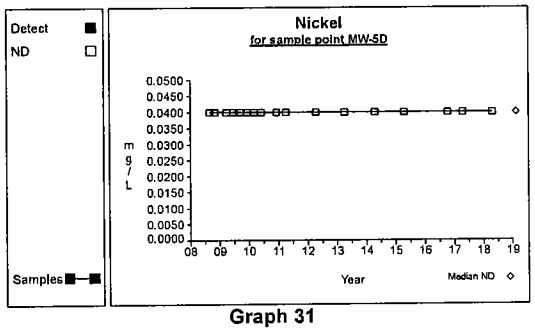
Graph 28



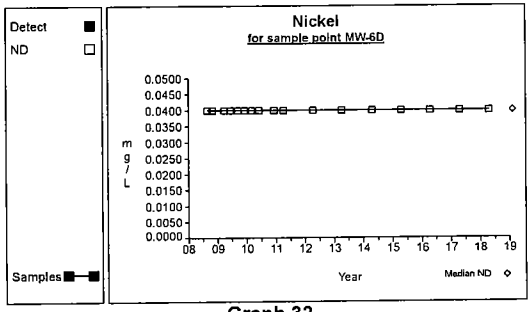
Graph 29



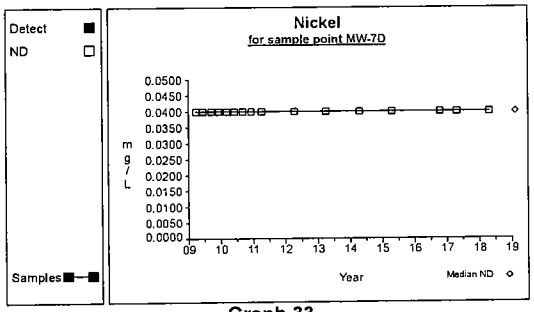
Graph 30



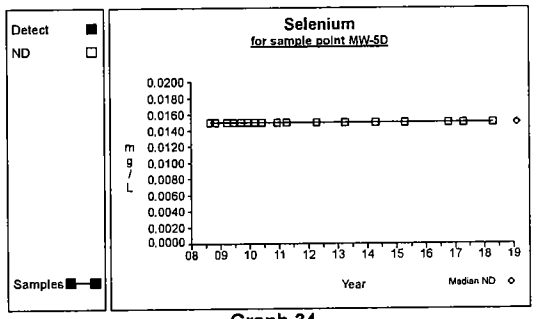
Graph 31



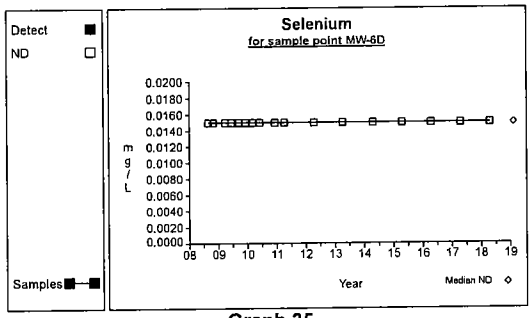
Graph 32



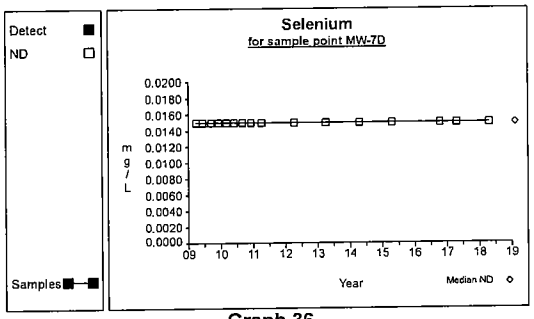
Graph 33



Graph 34

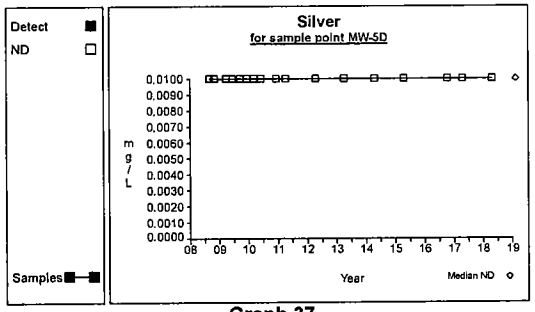


Graph 35

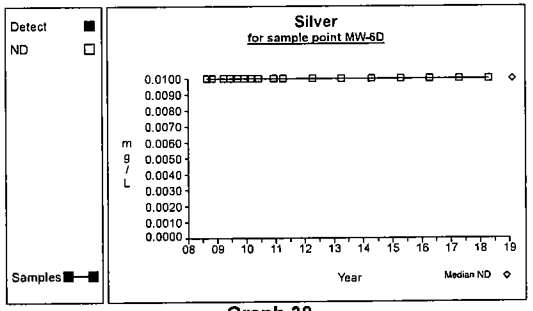


Graph 36

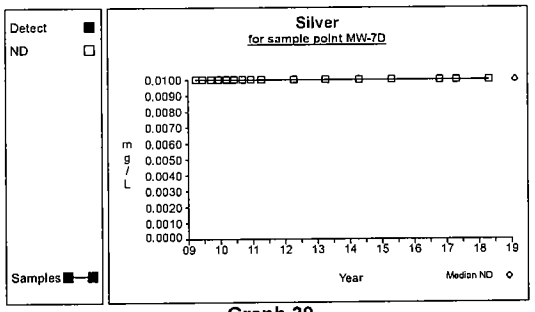
Time Series



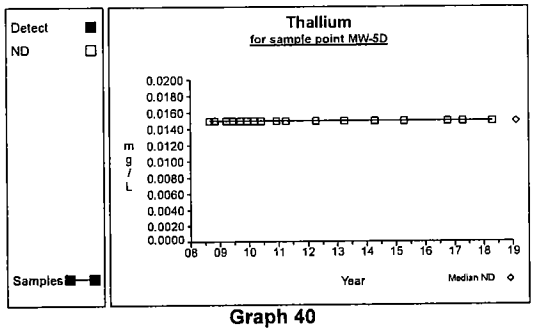
Graph 37



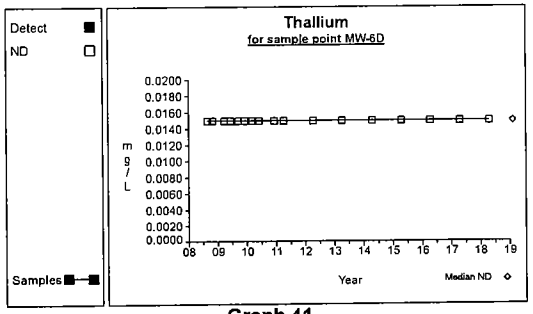
Graph 38



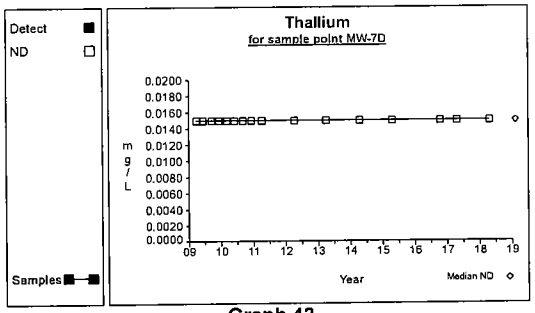
Graph 39



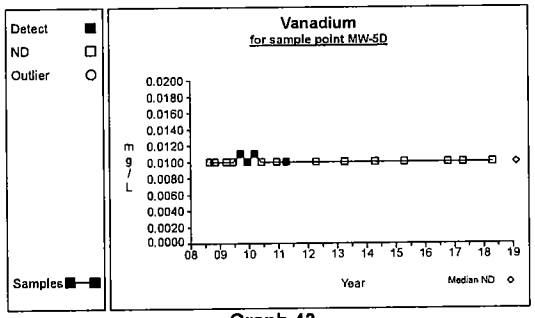
Graph 40



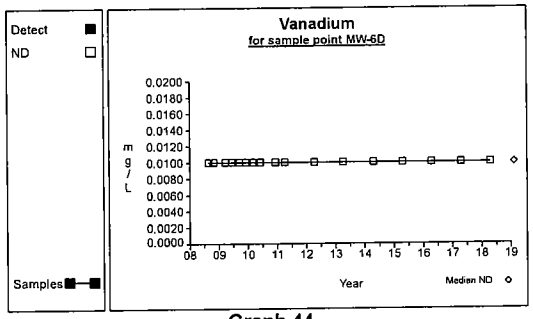
Graph 41



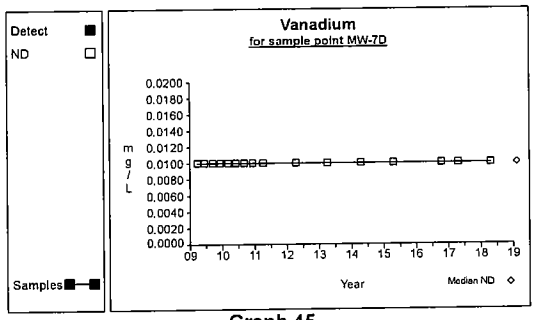
Graph 42



Graph 43

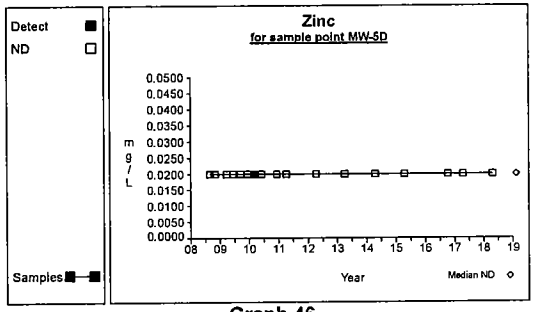


Graph 44

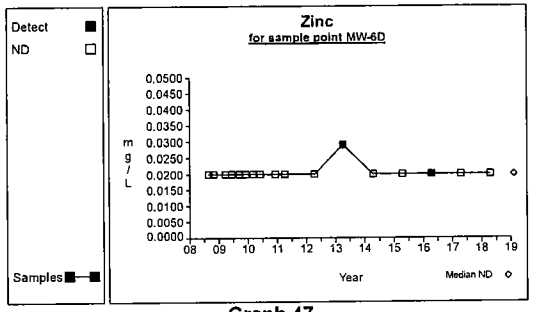


Graph 45

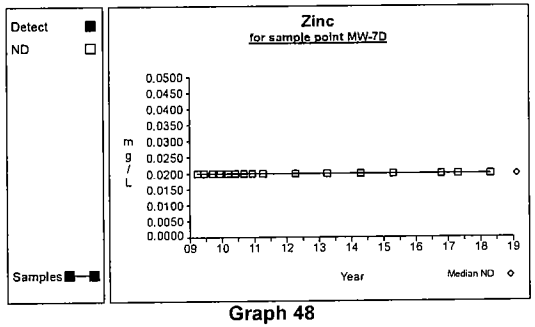
Time Series



Graph 46



Graph 47



Graph 48