360035

NEW YORK STATE DEPARTMENT OF TRANSPORTATION

Albany, New York

POST-CLOSURE QUARTERLY LANDFILL MONITORING

Second Quarter

Harrison Subresidency

D008873 P.I.N. 8806.51.101
Town of Harrison
Westchester County, New York

January 2001

Prepared By

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NEW YORK STATE DEPARTMENT OF TRANSPORTATION
ALBANY, NEW YORK

HARRISON SUBRESIDENCY
WESTCHESTER COUNTY
POST-CLOSURE MONITORING RESULTS

D008873, PIN 8806.51.101

SECOND QUARTERLY REPORT
January 2001

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One Blue Hill Plaza
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HARRISON SUBRESIDENCY
WESTCHESTER COUNTY
POST-CLOSURE QUARTERLY MONITORING RESULTS
SECOND QUARTER

D008873, PIN 8806.51.101

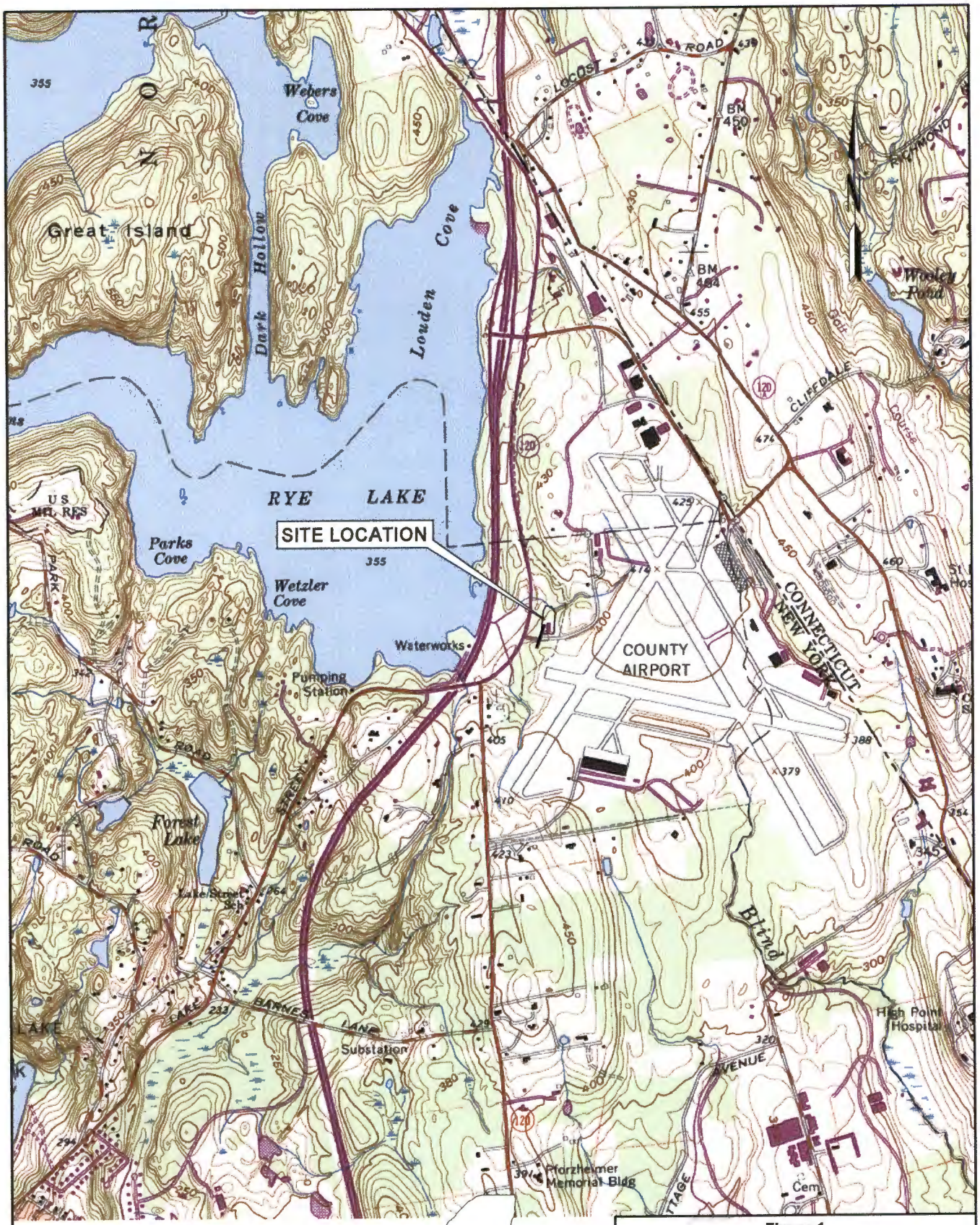
1.0 INTRODUCTION

1.1 Background

This report presents the results of the January 2001 post-closure sampling and monitoring conducted at the Harrison Subresidency site located in the town of Harrison, Westchester County, New York (Figure 1). The site, a seasonal highway maintenance support and salt storage facility operated by the New York State Department of Transportation (NYSDOT), includes approximately 2.6 acres of landfill area (Figure 2) that was closed in December 1998 in compliance with New York State Department of Environmental Conservation (NYSDEC) 6 NYCRR Part 360 regulations. The second quarter sampling and monitoring was conducted to evaluate the environmental impacts of landfill closure through groundwater, surface water and sediment sampling, gas monitoring and a landfill inspection. The quarterly sampling and monitoring program was established to conform to the requirements of 6 NYCRR Part 360 2.15 (K).

1.2 First Quarter Post-Closure Monitoring

In October 2000, LMS conducted the first quarterly post-closure monitoring of the groundwater, surface water and sediment at the landfill (LMS January 2000). Samples were collected from four on-site and two off-site monitoring wells (Figure 3), three on-site surface water locations and four corresponding sediment locations (Figure 4) and analyzed for TAL metals and chloride. Analytical results indicate that concentrations of several TAL metals (iron, magnesium, manganese, mercury, selenium and sodium) exceeded the Class GA standards or guidance values in unfiltered and filtered groundwater and surface water samples. Beryllium, chromium, copper and nickel exceeded the Class GA standards or guidance values in the unfiltered samples only. Chloride was detected, above the Class GA standard of 250 ppm, in a groundwater sample collected from the off-site well PC-3. Lead, magnesium and silver were detected above the Lowest Effect Level (LEL) in three sediment samples collected on-site. It was concluded that, with two exceptions, elevated levels of TAL metals were being released to the groundwater and



Map source: USGS 7.5 minute quadrangle map, Glenville Conn. NY, 1960
Photorevised 1971.

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Figure 1

Site Location

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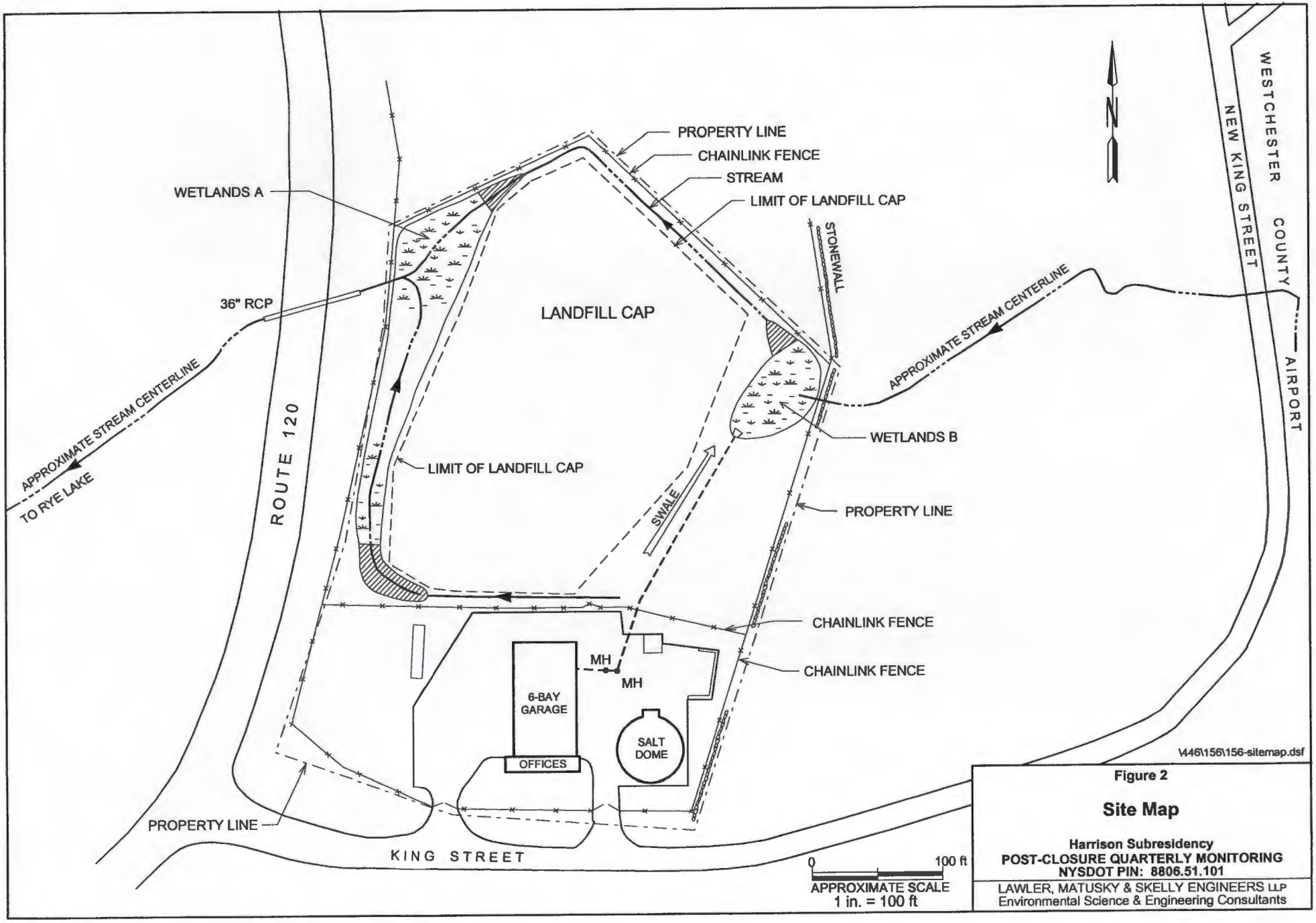

Figure 2

Site Map

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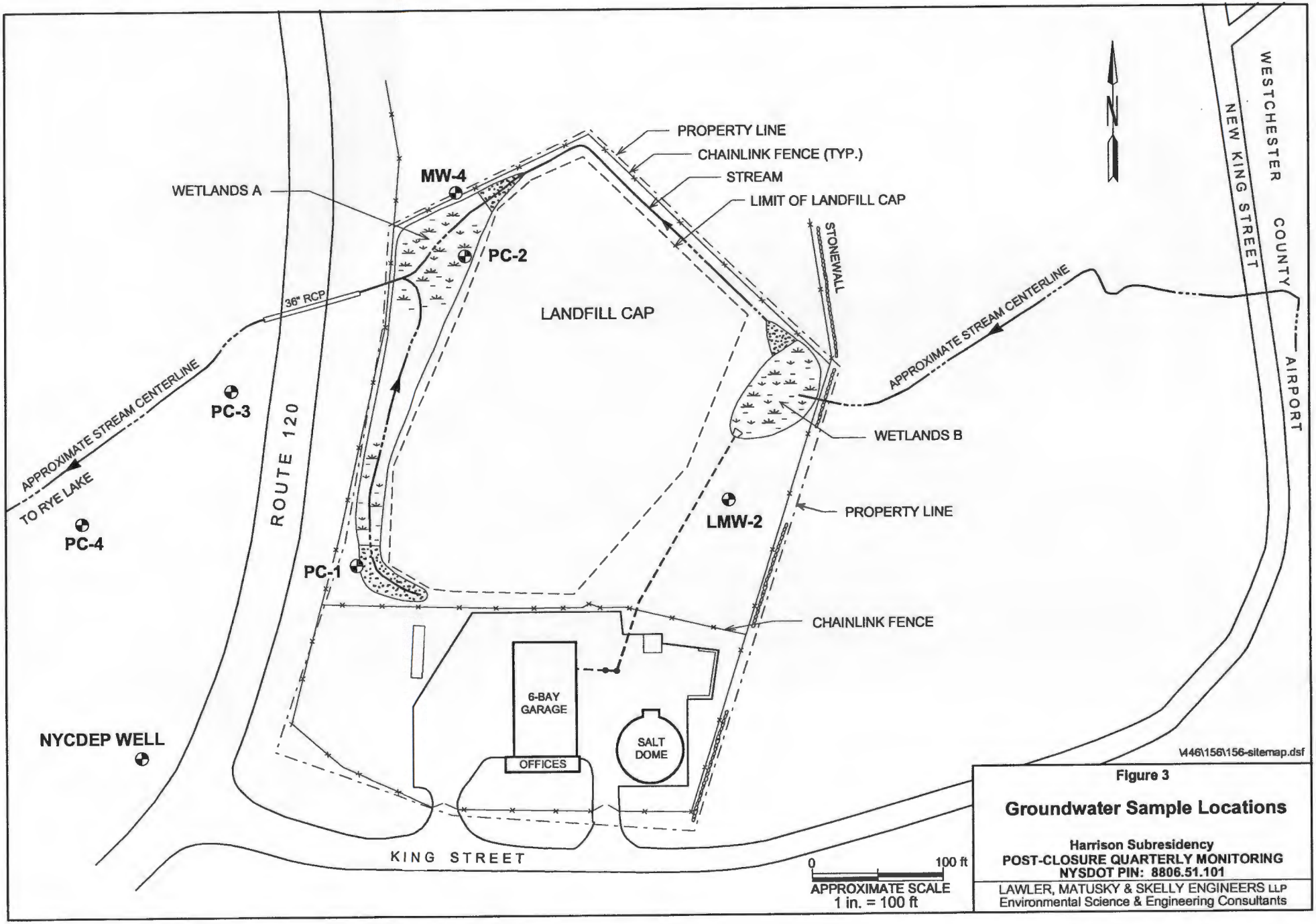

Figure 3

Groundwater Sample Locations

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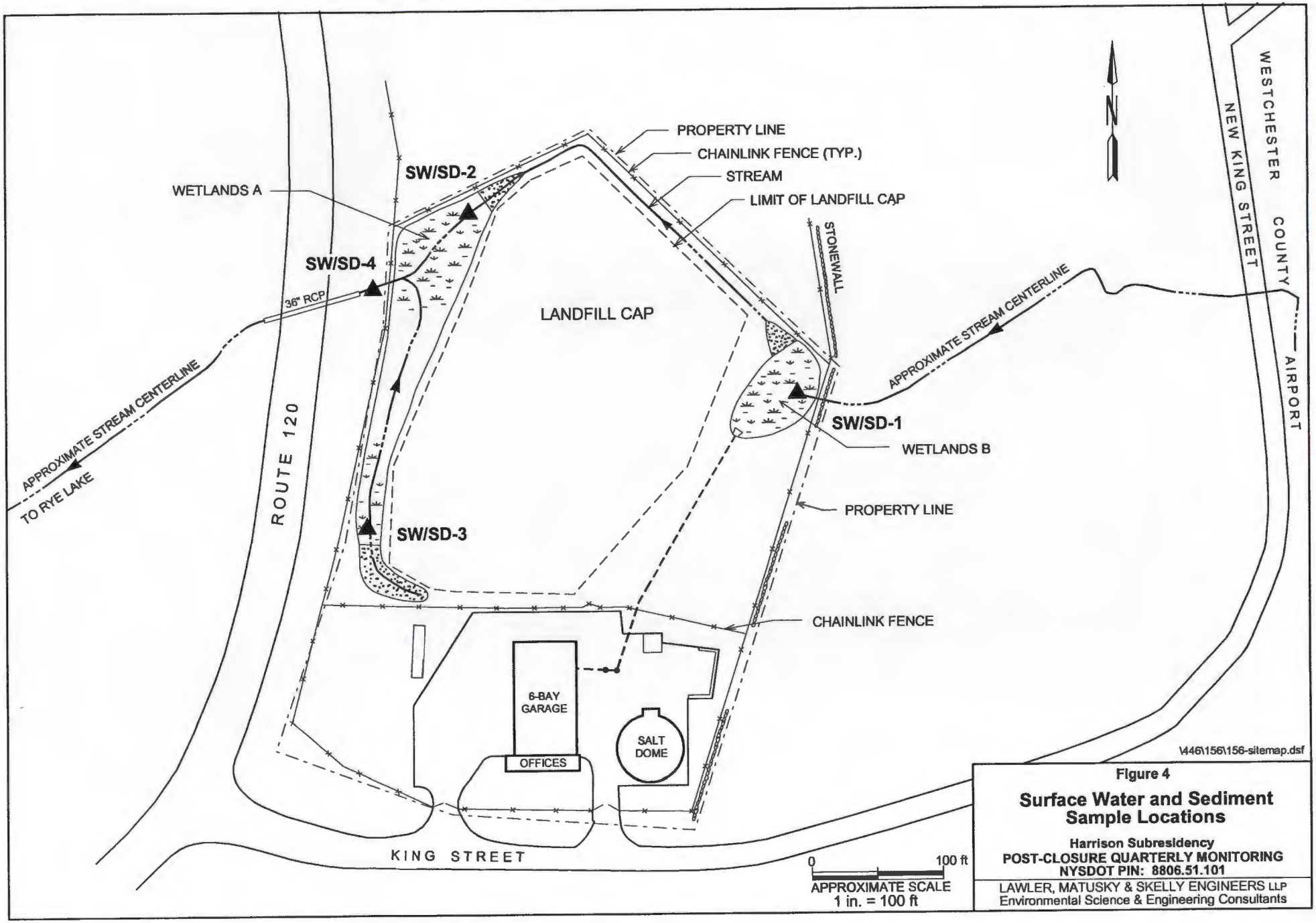

Figure 4

Surface Water and Sediment Sample Locations

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surface water downgradient of the landfill. Elevated levels of magnesium and sodium were detected in a groundwater sample collected from the upgradient well LMW-2 in concentrations exceeding those detected in two downgradient wells (MW-4 and PC-2) which suggests an additional off-site source of these metals. The majority of the elevated concentrations of metals detected in the groundwater were associated with suspended particulates greater than 0.45 microns as was noted in the pre-construction and post-closure sampling data.

1.2 Monitoring Objectives

The objectives of the post-closure sampling and monitoring program are to; 1) evaluate the environmental impacts of the landfill; 2) meet the post-closure monitoring requirements of the NYSDEC and; 3) provide NYSDEC with data after one full year to evaluate and/or modify the existing sampling and monitoring program.

2.0 FIELD INVESTIGATION

2.1 Groundwater Investigation

Prior to landfill closure there were four wells on site; one upgradient well (LMW-2), and three downgradient wells (LMW-1, MW-3, and MW-4). Both LMW-1 and MW-3 were removed during the regrading of the landfill. Four new monitoring wells were installed in October 1998 to assist in the monitoring downgradient of the landfill. PC-1 and PC-2 were located in the wetlands area at the base of the western toe of the landfill slope while PC-3 and PC-4 were located on New York City Department of Environmental Protection (NYCDEP) property on the western side of Route 120 (Figure 3).

2.1.1 Monitoring Well Sampling

As part of the quarterly post-closure sampling and monitoring program, six monitoring wells (LMW-2, MW-4, PC-1, PC-2, PC-3 and PC-4) were purged and sampled for Target Analyte List (TAL) metals and chloride from 22 January 2001 to 24 January 2001.

MW-4 was purged dry after five gallons and was allowed to recharge to approximately 90% before sampling. LMW-2, PC-1, PC-2, PC-3 and PC-4 were each purged of three well volumes prior to sampling. Purging of each well was performed by using either a small submersible pump, a peristaltic pump or by hand using a dedicated bailer. PC-2 was purged with a peristaltic pump because of a damaged casing (the well casing at PC-2 had sheared sideways allowing only a gap of about 2 cm down the well). After purging, samples were collected using dedicated disposable bailers. The samples were preserved on ice to 4°C and sent, under chain of custody, to a New York State Department of Health (NYSDOH)-approved laboratory for TAL metals and chloride analyses.

Groundwater chemistry measurements (temperature, pH, conductivity, and turbidity) were recorded before, during, and after purging, with a measurement recorded for approximately every well volume (with the exception of MW-4). Static water level measurements were also taken prior to and after purging each well. Groundwater purging information is recorded on the groundwater well sampling logs included in Attachment A.

2.2 Surface Water Sampling

On 24 January two downstream surface water sampling points, SW-2 and SW-4 (Figure 4), were sampled. SW-2 was collected from a point located at the northern portion of wetlands A (western side of the landfill). The flow at SW-2 was very low (<1 cfs) and limited to a small channel approximately 3 inches deep. SW-4 was collected from a point located approximately 17 feet northeast of the 36-inch reinforced concrete pipe (RCP) culvert that diverts the stream southwest under Route 120 to Rye Lake. Both surface water samples were collected from approximately the same location staked out during the first quarterly sampling event. The surface water in the upstream surface water points SW-1 and SW-3 was frozen solid and samples were not collected from these locations. A duplicate sample, SW-5, was collected from the same location as SW-4.

The surface water samples were collected by dipping a dedicated laboratory-cleaned stainless steel ladle into the water and transferring the sample to the appropriate pre-cleaned laboratory-supplied container. The containers were iced to 4°C and sent, under chain of custody, to a

NYSDOH-approved laboratory for TAL metals and chloride analyses. Water chemistry measurements (temperature, pH, conductivity, and turbidity) were recorded during sample collection and are included in Attachment B.

2.3 Sediment Sampling

Two sediment samples (SD-2 and SD-4) were collected for TAL metals and chloride analyses. Each sediment sample was collected subsequent to, and at the same location as, its corresponding surface water sample (Figure 4). The samples were collected using a dedicated laboratory-cleaned stainless steel trowel and placed directly into the appropriate pre-cleaned laboratory-supplied sample container. Each sample container was iced to 4°C and sent, under chain of custody, to a NYSDOH-approved laboratory for analysis. The sample depth, texture, color and odor were noted and are included in Attachment B.

2.4 Gas Monitoring

In conformance with the June 2000 Post-Closure Operations and Maintenance Manual, a gas monitoring program was instituted to verify that any gases, produced as a result of the natural decomposition of waste, do not pose a hazard to health or safety. The program includes the measurement of concentrations of methane or other explosive gases, hydrogen sulfide and volatile organic compounds (VOCs) at each of four gas vents and around the perimeter of the landfill (Figure 5).

Methane and other explosive gases were measured with a combustible gas indicator (CGI) around the perimeter of landfill and gas vents. Gas vent readings were obtained by inserting the instrument detector probe into the vent. The CGI was set to sound an alarm if the readings exceeded 10 % of the lower explosive limit (LEL) of methane. In addition, alarms were set at 10% of the LEL of hydrogen sulfide, 25 parts per million (ppm) of carbon monoxide and 19.5% and 23.5% of oxygen. No readings were detected above the preset alarm levels at the gas vents or the perimeter of the site.

VOCs were measured with a photoionization detector (PID) and a flame ionization detector (FID) (with and without the methane filter) at the perimeter of the landfill and at each of the four gas vents. There were no readings, above background, at the vents or the perimeter of the landfill. An air monitoring field data sheet is included in Attachment C.

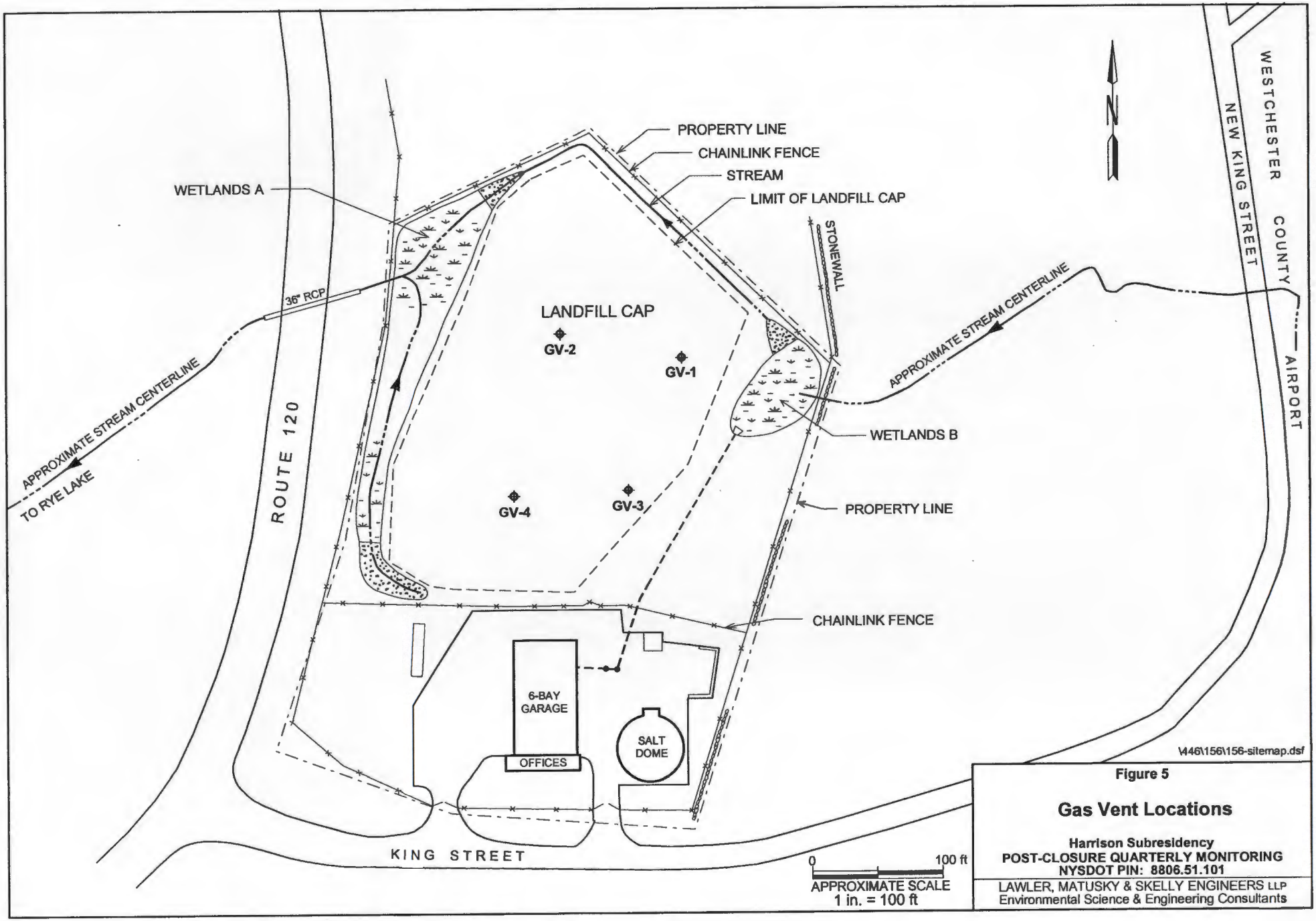

Figure 5

Gas Vent Locations

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2.5 Inspections

All six groundwater monitoring wells were inspected and, with the exception of PC-2, were found to be good condition. As noted in Section 2.1.1 the well casing at PC-2 had sheared sideways allowing only a gap of about 2 cm down the well. The landfill was under approximately one foot of snow and ice which prevented an inspection of the cap and cap vegetation. The drainage swales, that were not under snow and ice (near wetlands A), were inspected and found to be in good condition. All four gas vents were also inspected and were found to be in good condition. No vermin or vector were noted on the landfill.

2.6 Quality Assurance/Quality Control

An additional surface water sample (filtered and unfiltered), SW-5, was collected from the same location as SW-4 to assess laboratory precision and accuracy. The sample was analyzed for TAL metals and chloride. The relative percent difference (RPD) was calculated for each parameter that was detected in both the original and duplicate unfiltered samples. The results indicate that the RPD of three parameters (iron, manganese and chloride) out of eight was greater than 20% but less than 50% and are in the acceptable range of percent difference. The RPD of the remaining parameters ranged from 3.5% to 12.5%. The analytical results are included in Table 2.

3.0 ANALYTICAL RESULTS

3.1 Groundwater Results

The six filtered and six unfiltered groundwater samples collected on 22, 23 and 24 January 2001, designated as LMW-2, MW-4, PC-1, PC-2, PC-3 and PC-4, were analyzed for TAL metals and chloride. Groundwater samples were analyzed according to NYSDEC Analytical Services Protocol (ASP). Analytical results for the filtered and unfiltered groundwater samples are presented in Table 1 and a copy of the analytical laboratory report is presented in Attachment D. Field parameters for temperature, pH, specific conductance, and turbidity are provided on the groundwater well sampling logs included in Attachment A.

Results of the analyses indicate that eighteen TAL metals were detected in both the filtered and unfiltered groundwater samples.

TABLE 1

GROUNDWATER SUMMARY
Second Quarter (January 2001)
Harrison Subresidency Site
NYSDOT
D008873, PIN 8806.51.101

PARAMETER	LMW-2	FIL LMW-2	MW-4	FIL MW-4	PC-1	FIL PC-1	PC-2	FIL PC-2	PC-3	FIL PC-3	PC-4	FIL PC-4	NATURAL AMBIENT GROUNDWATER RANGES (n)	NYSDEC CLASS GA STANDARDS (a)
TAL METALS (ug/L)														
Aluminum	1800	ND	ND	ND	9400	ND	110	ND	31000	ND	19000	ND	<5.0 - 1000	NS
Antimony	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	N/A	3
Arsenic	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<1.0 - 30	25
Barium	200	190	ND	ND	130	42	180	86	400	55	260	71	10 - 500	1000
Beryllium	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<10	3.0 GV
Cadmium	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<1.0	5
Calcium	96000	100000	6500	5700	49000	51000	75000	74000	61000	62000	25000	24000	1000 - 150000	NS
Chromium	ND	ND	ND	ND	20	ND	ND	ND	74	ND	82	ND	<1.0 - 5.0	50
Cobalt	ND	ND	ND	ND	3.5	ND	ND	ND	40	16	14	ND	<10	NS
Copper	ND	ND	ND	ND	18	ND	ND	ND	81	ND	40	ND	<1.0 - 3	200
Iron	3200	ND	12000	4800	17000	ND	80000	40000	49000	520	28000	ND	10 - 10000	300 (m)
Lead	ND	ND	ND	ND	5.9	ND	ND	ND	16	ND	20	ND	<15	25
Magnesium	36000	39000	2100	1800	12000	8900	25000	25000	29000	19000	17000	8500	1000 - 50000	35000 GV
Manganese	1500	2000	42000	3800	540	7.6	17000	17000	1600	1300	280	27	<1.0 - 1000	300 (m)
Mercury	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.5	ND	<1.0	0.7
Nickel	13	17	ND	ND	12	ND	ND	ND	86	29	71	6.6	<10 - 50	100
Potassium	6400	6200	3100	2800	6800	4300	3200	3600	9800	5600	7400	4000	1000 - 10000	NS
Selenium	ND	ND	ND	ND	ND	ND	17	10	ND	ND	ND	ND	<1.0 - 10	10
Silver	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<5	50
Sodium	43000	50000	30000	28000	47000	57000	63000	60000	95000	99000	38000	41000	500 - 120000	20000
Thallium	ND	ND	ND	ND	ND	ND	6.9	8.9	ND	ND	ND	ND	N/A	0.5 GV
Vanadium	8.3	2.9	ND	ND	36	ND	8	ND	110	ND	61	ND	<1.0 - 10	NS
Zinc	8.7	ND	ND	ND	39	ND	ND	ND	130	7.4	94	ND	<10 - 2000	2000 GV
Chloride (mg/L)	32	*	58	*	30	*	90	*	170	*	64	*	N/A	250

a - NYSDEC Division of Water Technical and Operational Guidance Series (1.1.1). June 1998, revised April 2000.
GV - Guidance value.
(m) - Sum of Iron and Manganese not to exceed 500 ug/L.
(n) - Dragun, J., The Soil Chemistry of Hazardous Materials.
N/A - Not applicable.
ND - Not detected at analytical detection limit.
NS - No standard.
* - Not analyzed.

Aluminum was detected in several unfiltered groundwater samples. The concentrations range from 110 parts per billion (ppb) in the on-site well PC-2 to 31000 ppb in the off-site well PC-3. Aluminum was not detected in any of the filtered samples.

Barium was detected in unfiltered samples collected from five wells (LMW-2, PC-1, PC-2, PC-3 and PC-4). The concentrations range from 130 ppb in the on-site well PC-1 to 400 ppb in the off-site well PC-3. Barium was also detected in the filtered samples although at lower concentrations than detected in the unfiltered samples.

Calcium was detected in all the unfiltered and filtered samples. The concentrations range from 5700 ppb in the filtered sample collected from the onsite well MW-4 to 100000 ppb in the filtered sample collected from the on-site upgradient well LMW-2.

Chromium was detected in three unfiltered samples collected from PC-1 (20 ppb), PC-3 (74 ppb) and PC-4 (82 ppb). Chromium was not detected in any of the filtered samples.

Cobalt was detected in the unfiltered samples collected from PC-1, PC-3 and PC-4 with concentrations ranging from 3.5 ppb in the sample collected from the on-site well PC-1 to 40 ppb in the sample collected from the off-site well PC-3. Cobalt was also detected in the filtered sample collected from PC-3 at 16 ppb.

Copper was detected in the unfiltered samples collected from PC-1, PC-3 and PC-4. The highest concentrations of copper were detected in the off-site wells PC-3 (81 ppb) and PC-4 (40 ppb). Copper was not detected in any of the filtered samples.

Iron was detected in the unfiltered samples collected from all six wells. The concentrations range from 3200 ppb in the upgradient well LMW-2 to 80000 ppb in the on-site well PC-2. Iron was also detected in several filtered samples (MW-4, PC-2 and PC-3) although at lower concentrations than detected in the unfiltered samples.

Lead was detected in three unfiltered samples collected from PC-1 (5.9 ppb), PC-3 (16 ppb) and PC-4 (20 ppb). Lead was not detected in any of the filtered samples.

Magnesium was detected in both the filtered and unfiltered samples collected from all six wells. The concentrations range from 1800 ppb in the filtered sample collected from MW-4 to 39000 ppb in the filtered sample collected from the upgradient well LMW-2. With the exception of the concentration of magnesium detected in LMW-2 (39000 ppb), all the concentrations detected in

the filtered samples were either lower, or the same as, the concentrations detected in the unfiltered samples.

Manganese was detected in both the filtered and unfiltered samples collected from all six wells. The highest concentration was detected in the unfiltered sample collected from the on-site well MW-4 at 42000 ppb. The lowest concentration, 7.6 ppb was detected in the filtered sample collected from the on-site well PC-1. With the exception of the concentration of manganese detected in filtered sample collected from the upgradient well LMW-2 (2000 ppb), all the concentrations of manganese, detected in the filtered samples, were either lower than, or the same as, the concentrations detected in the unfiltered samples.

Mercury was detected in the unfiltered sample collected from the off-site well PC-4 at 0.5 ppb.

Nickel was detected in the unfiltered samples collected from LMW-2, PC-1, PC-3, and PC-4 in concentrations that range from 12 ppb in the sample collected from PC-1 to 86 ppb in the sample collected from the off-site well PC-3. With the exception of the concentration of nickel detected in the filtered sample collected from the upgradient well LMW-2, the concentrations of nickel detected in the filtered samples were lower than the concentrations detected in the unfiltered samples.

Potassium was detected in both the filtered and unfiltered samples collected from all six wells. The concentrations range from 3100 ppb (LMW-2) to 9800 ppb (PC-3) in the unfiltered samples. With the exception of the concentration of potassium detected in the filtered sample collected from PC-2, the concentrations of potassium detected in the filtered samples were lower than the concentrations detected in the unfiltered samples.

Selenium was detected in both the filtered and unfiltered samples collected from PC-2 at 10 ppb and 17 ppb respectively.

Sodium was detected in both the filtered and unfiltered samples collected from all six wells. The concentrations range from 28000 ppb in the filtered sample collected from MW-4 to 99000 ppb in the filtered sample collected from the off-site well PC-3. In general, the concentrations of sodium detected in the filtered samples were higher than those detected in the unfiltered samples.

Thallium was detected in both the filtered and unfiltered samples collected from PC-2 at 8.9 ppb and 6.9 ppb respectively.

Vanadium was detected in the unfiltered samples collected from LMW-2, PC-1, PC-2, PC-3 and PC-4. The concentrations range from 8 ppb in PC-2 to 110 ppb in the sample collected from the off-site well PC-3. Vanadium concentrations detected in the filtered samples were lower than the concentrations detected in the unfiltered samples.

Zinc was detected in four unfiltered samples (LMW-2, PC-1, PC-3 and PC-4). The concentrations range from 8.7 ppb in the sample collected from the upgradient well LMW-2 to 130 ppb in the sample collected from the off-site well PC-3. Zinc was also detected in the filtered sample collected from PC-3 at 7.4 ppb.

Chloride was detected in the unfiltered samples collected from all six wells. The concentrations range from 30 ppm in the sample collected from PC-1 to 170 ppm in the sample collected from the off-site well PC-3.

The filtered and unfiltered analytical results suggest that, with some exceptions, a large portion of the TAL metals, detected in the samples, are associated with the suspended solids portion of the groundwater. Field-measured groundwater turbidities ranged from 5 to > 1000 nephelometric turbidity units. Turbidity data is included in the well sampling logs located in Attachment A. Concentrations of the metals detected in the groundwater are presented on Table 1.

3.2 Surface Water Results

Two surface water samples and one duplicate surface water sample were collected on 24 January 2001 and analyzed for TAL metals and chloride. Surface water samples were analyzed according to NYSDEC ASP. Analytical results for surface water samples are presented in Table 2, and a copy of the analytical laboratory report is presented in Attachment D. Field parameters for temperature, pH, specific conductance, and turbidity are provided on the surface water sampling logs included in Attachment B.

Results of the TAL metals analyses indicate that nine metals were detected in the surface water samples.

Aluminum was detected in the two unfiltered samples collected from SW-2 (1400 ppb) and SW-4 (400 ppb). There were no concentrations of aluminum detected in any of the filtered samples or in the filtered and unfiltered duplicate sample SW-5.

TABLE 2

SURFACE WATER SUMMARY

Second Quarter (January 2001)

Harrison Subresidency

NYSDOT

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PARAMETER	SW-2	FIL SW-2	SW-4	FIL SW-4	SW-5	FIL SW-5	NATURAL AMBIENT GROUNDWATER RANGES (n)	NYSDEC CLASS GA STANDARDS (a)
TAL METALS (ug/L)								
Aluminum	1400	ND	400	ND	ND	ND	<5.0 - 1000	NS
Antimony	ND	ND	ND	ND	ND	ND	N/A	3
Arsenic	ND	ND	ND	ND	ND	ND	<1.0 - 30	25
Barium	23	25	34	26	30	28	10 - 500	1000
Beryllium	ND	ND	ND	ND	ND	ND	<10	3.0 GV
Cadmium	ND	ND	ND	ND	ND	ND	<1.0	5
Calcium	29000	33000	35000	34000	37000	36000	1000 - 150000	NS
Chromium	ND	ND	ND	ND	ND	ND	<1.0 - 5.0	50
Cobalt	ND	ND	ND	ND	ND	ND	<10	NS
Copper	ND	ND	ND	ND	ND	ND	<1.0 - 3	200
Iron	140	69	1400	ND	180	ND	10 - 10000	300 (m)
Lead	ND	ND	ND	ND	ND	ND	<15	25
Magnesium	9000	10000	11000	10000	11000	11000	1000 - 50000	35000 GV
Manganese	350	99	230	59	140	96	<1.0 - 1000	300 (m)
Mercury	ND	ND	ND	ND	ND	0.56	<1.0	0.7
Nickel	ND	ND	ND	ND	ND	ND	<10 - 50	100
Potassium	2300	3900	2600	2500	2600	2700	1000 - 10000	NS
Selenium	ND	ND	ND	ND	ND	ND	<1.0 - 10	10
Silver	ND	ND	ND	ND	ND	ND	<5	50
Sodium	22000	28000	29000	30000	28000	27000	500 - 120000	20000
Thallium	ND	ND	ND	ND	ND	ND	N/A	0.5 GV
Vanadium	ND	ND	ND	ND	ND	ND	<1.0 - 10	NS
Zinc	ND	ND	ND	ND	ND	ND	<10 - 2000	2000 GV
Chloride (mg/L)	54	*	50	*	40	*	N/A	250

a - NYSDEC Division of Water Technical and Operational Guidance Series (1.1.1). June 1998, revised April 2000.
GV - Guidance value.
n - Dragun, J., The Soil Chemistry of Hazardous Materials.
N/A - Not applicable.
ND - Not detected at analytical detection limit.
NS - No standard.
* - Not analyzed.

Barium was detected in both the unfiltered and filtered samples collected from SW-2 and SW-4. The concentrations range from 23 ppb/25 ppb to 34 ppb/26 pbb respectively. Barium was also detected in the unfiltered and filtered duplicate sample SW-5 at 30 ppb/28 ppb respectively.

Calcium was detected in both the unfiltered and filtered samples collected from SW-2 and SW-4 at 29000 ppb/33000 ppb and 35000 ppb/34000 ppb respectively. Calcium was also detected in the unfiltered and filtered sample SW-5 at 37000 ppb/36000 ppb respectively.

Iron was detected at 140 ppb and 1400 ppb in the unfiltered samples collected from SW-2 and SW-4 respectively. Iron was also detected in the filtered sample collected from SW-2 at 69 ppb and in the unfiltered sample SW-5 at 180 ppb. Iron was not detected in the filtered sample collected from SW-4 or the duplicate sample SW-5.

Magnesium was detected in both the unfiltered and filtered samples collected from SW-2 and SW-4 at 9000 ppb/10000 ppb and 11000 ppb/10000 ppb respectively. Magnesium was also detected in the unfiltered and filtered sample SW-5 at 11000 ppb/11000 ppb respectively.

Manganese was detected in both the unfiltered and filtered samples collected from SW-2 and SW-4 at 350 ppb/99 ppb and 230 ppb/59 ppb respectively. Manganese was also detected in the unfiltered and filtered sample SW-5 at 140 ppb/96 ppb respectively.

Mercury was detected in the filtered duplicated sample SW-5 at 0.56 ppb. Mercury was not detected in SW-4.

Potassium was detected in both the unfiltered and filtered samples collected from SW-2 and SW-4 at 2300 ppb/ 3900 ppb and 2600 ppb/2500 ppb respectively. Potassium was also detected in both the unfiltered and filtered sample SW-5 at 2600 ppb/2700 ppb respectively.

Sodium was detected in both the unfiltered and filtered samples collected from SW-2 and SW-4 at 22000 ppb/28000 ppb and 29000 ppb/30000 ppb respectively. Sodium was also detected in both the unfiltered and filtered samples collected from SW-5 at 28000 ppb/27000 ppb respectively.

Chloride was detected in the unfiltered samples collected from SW-2 (54 ppm) and SW-4 (50 ppm) and in the unfiltered duplicate sample SW-5 (40 ppm).

3.3 Sediment Data Results

The two sediment samples collected on 24 January, designated as SD-2 and SD-4, were analyzed for TAL metals and chloride. Sediment samples were analyzed according to NYSDEC ASP. Analytical results for sediment samples are presented in Table 3, and a copy of the analytical laboratory report is presented in Attachment D. Sample depths and field observations are provided on the sediment sampling logs included in Attachment B.

Nineteen TAL metals were detected in the sediment samples collected from SD-2 and SD-4. Concentrations of the metals detected in the sediment samples are presented on Table 3.

Concentrations of aluminum (4600 ppm/4800 ppm), arsenic (2.6 ppm/2.6 ppm), barium (33 ppm/37 ppm), calcium (54000 ppm/56000 ppm), chromium (8 ppm/7.7 ppm), cobalt (4.6 ppm/3.7 ppm), copper (13 ppm/10 ppm), iron (13000 ppm/13000 ppm), lead (31 ppm/23 ppm), magnesium (28000 ppm/28000 ppm), manganese (290 ppm/600 ppm), nickel (12 ppm/9.2 ppm), potassium (1200 ppm/1300 ppm), selenium (0.92 ppm/1 ppm), vanadium (14 ppm/14 ppm) and zinc (53 ppm/48 ppm) were detected in samples collected from both SD-2 and SD-4 respectively. Antimony (0.64 ppm), cadmium (0.16 ppm) and silver (0.14 ppm) were detected in the sample collected from SD-2.

Chloride was not detected in either of the sediment samples.

4.0 COMPARISON TO APPLICABLE CRITERIA

4.1 Groundwater

The results of the groundwater analyses were compared to current NYSDEC Ambient Water Quality Class GA Standards and Guidance Values (April 2000 Revision).

The results of the TAL metals analyses indicate that seven metals, detected in the unfiltered and filtered samples, occurred at concentrations exceeding their representative groundwater criteria (Table 1). As stated in section 3.1, with some exceptions, a large portion of the TAL metals, detected in the samples, are associated with the suspended solids portion of the groundwater.

Chromium, detected in the unfiltered samples, PC-3 (74 ppb), and PC-4 (82 ppb), exceeded the Class GA standard of 50 ppb. However, chromium was not detected in the corresponding filtered samples. Iron and manganese exceeded the combined Class GA standard of 500 ppb in

TABLE 3

SEDIMENT DATA SUMMARY
Second Quarter (January 2001)
Harrison Subresidency
NYSDOT
D008873, PIN 8806.51.101

PARAMETER	SD-2	SD-4	Sediment Criteria (a) LEL[1]	Sediment Criteria (a) SEL[2]
	[DL 1:100]	[DL 1:100]		
TAL METALS (mg/kg)				
Aluminum	4600	4800		
Antimony	0.64	ND	2	25
Arsenic	2.6	2.6	6	33
Barium	33	37		
Beryllium	ND	ND		
Cadmium	0.16	ND	0.6	9
Calcium	54000	56000		
Chromium	8	7.7	26	110
Cobalt	4.6	3.7		
Copper	13	10	16	110
Iron	13000	13000	20000	40000
Lead	31	23	31.0	110
Magnesium	28000	28000		
Manganese	290	600	460	1100
Mercury [DL 1:167]	ND	ND	0.15	1.3
Nickel	12	9.2	16	50
Potassium	1200	1300		
Selenium	0.92	1		
Silver	0.14	ND	1	2.2
Sodium	ND	ND		
Thallium	ND	ND		
Vanadium	14	14		
Zinc	53	48	120	270
Chloride (mg/kg)	ND	ND		

(a) - NYSDEC Technical Guidance for Screening Contaminated Sediments.
November 1993, revised January 1999.
1 - Lowest Effect Level
2 - Severe Effect Level
DL - Dilution factor.

ND - Not detected at analytical detection limit.

all unfiltered and four of the filtered samples (LMW-2, MW-4, PC-2 and PC-3). However, all the concentrations of iron and manganese detected in the corresponding filtered samples were lower than those detected in the unfiltered samples. Magnesium exceeded the Class GA guidance value of 35000 ppb in both the unfiltered and filtered samples collected from LMW-2 at 36000 ppb and 39000 ppb respectively. The concentration detected in the corresponding filtered sample was higher than that detected in the unfiltered sample. Selenium was detected above the Class GA standard of 10 ppb in the unfiltered sample collected from PC-2 at 17 ppb. However, selenium was detected at a lower concentration (10 ppb) in the filtered sample collected from this well. Sodium exceeded the standard of 20000 ppb in all filtered and unfiltered samples. With the exception of the samples collected from MW-4 and PC-2 the concentrations of sodium detected in the filtered samples were higher than those detected in the unfiltered samples. Thallium concentrations detected in the unfiltered and filtered samples collected from PC-2 (6.9 ppb/8.9 ppb) exceeded the guidance value of 0.5 ppb. The concentration of thallium detected in the filtered sample was higher than that detected in the unfiltered sample. Iron, magnesium, manganese, and sodium were detected above the Class GA standards in the upgradient background well LMW-2.

There were no concentrations of chloride, detected above the Class GA standard of 250 ppm, in the groundwater samples.

4.2 Surface Water

The results of the surface water analyses were compared to current NYSDEC Ambient Water Quality Class GA Standards and Guidance Values (April 2000 Revision).

The results of the TAL metals analyses indicate that three metals, detected in the surface water samples, occurred at concentrations exceeding their respective criteria (Table 2). Iron and manganese exceeded the combined Class GA standard of 500 ppb in the unfiltered samples collected from SW-2 and SW-4 and in the duplicate sample SW-5. Sodium exceeded the Class GA standard of 20000 ppb in both the unfiltered and filtered samples collected from SW-2, SW-4 and SW-5. With the exception of the duplicate sample SW-5, sodium concentrations detected in the filtered samples were higher than those detected in the unfiltered samples.

Chloride was not detected above the Class GA standard of 250 ppm in the surface water samples.

4.3 Sediment

The results of the sediment analyses (Table 3) were compared to current NYSDEC Technical Guidance for Screening Contaminated Sediment (January 1999 Revision).

The results of the TAL metals analyses indicate that manganese exceeded the lowest effect level (LEL) sediment criteria in SD-4. No other metals, detected in either sediment sample, exceeded the LEL or SEL sediment criteria established for those respective metals. Chloride was not detected in the sediment samples.

5.0 COMPARISON WITH PREVIOUS STUDIES

5.1 Groundwater

Results of the first quarter groundwater sampling (October 2000) indicate that the concentrations of TAL metals of concern (i.e., those metals exceeding NYSDEC standards or guidance values) in the samples collected in January 2001 generally show a decrease in concentration. However, manganese, detected at 34000 ppb in the unfiltered sample collected from MW-4 in October 2000, was detected at 42000 ppb in the unfiltered sample from the same well in January 2001. Thallium, which was undetected in the groundwater in October 2000 was detected in unfiltered and filtered samples collected from this well in January 2001.

5.2 Surface Water

Between October 2000 and January 2001 the concentrations of iron and manganese in the surface water samples collected from SW-2 and SW-4 decreased. However, the concentrations of sodium in the filtered samples increased from 23000 ppb to 28000 ppb in SW-2 and from 23000 ppb to 30000 ppb in SW-4. There was also an increase of 3000 ppb of sodium in the unfiltered samples collected from SW-4 from October 2000 (26000 ppb) to January 2001 (29000 ppb).

5.3 Surface Sediments

Between October 2000 and January 2001 there was a decrease of 90 ppm in the manganese concentration detected in SD-4 (from 690 ppm to 600 ppm).

6.0 CONCLUSIONS

Groundwater samples collected downgradient of the landfill indicate that the landfill is releasing, and/or mobilizing from the soil, elevated levels of iron, manganese, magnesium and sodium (which are not hazardous or RCRA constituents). Elevated levels of iron, manganese, sodium and magnesium in the samples collected from the upgradient well LMW-2 suggest there may be a contributing external source to the concentrations detected in the downgradient wells. The concentration of manganese detected in LMW-2 exceeded the concentrations detected at two downgradient wells, PC-1 and PC-4, by an order of magnitude. In addition, the concentration of sodium detected in the upgradient well LMW-2 was higher than that detected in the downgradient wells MW-4 and PC-4. Magnesium was detected in the upgradient well at a concentration exceeding those detected in the downgradient wells, which suggests an off-site source for this metal. The elevated levels of sodium and chloride detected in the sample collected from the off-site well PC-3, which is located close to Route 120, may be related to the salt dome south of the landfill or runoff from the highway.

In addition chromium, selenium and thallium were detected in the groundwater above the Class GA standards. However, chromium and selenium were either not detected the corresponding filtered samples or detected at a lower concentration. Thallium was detected above the Class GA guidance value of 0.5 ppb in one filtered sample (PC-2) at 8.9 ppb. Although thallium was not detected in the groundwater in October 2000, it was detected in the groundwater in August 1999 at a higher concentration (16 ppb).

Of the TAL metals detected in the groundwater, only iron, manganese and sodium were detected above the Class GA standards and guidance values in the surface water and only manganese was detected in one sediment sample above its corresponding LEL. Manganese is not hazardous or a RCRA constituent and its presence in the sediment above the LEL is considered a moderate impact.

Results from the filtered and unfiltered groundwater and surface water samples indicate that the majority of metals detected in the samples are associated with suspended particulates greater than 0.45 μm in size.

ATTACHMENT A

LMS Well Sampling Log

Date:	1/23/01
Crew:	TMS/MP
Job No:	446-156
Project:	NYSDOT
Project Site:	Harrison SR Landfill

METERS USED

Temp.:	TLC # 11
pH:	98-16
Cond.:	TLC # 11
Turb.:	LMS # 001

Well ID No.:	LMW-2
Well Condition:	Good
Well Depth/Diameter:	23.95/2"
Well Casing Type:	SS Stickup/PVC
Screened Interval:	Unknown
Casing Ht./Lock No.:	2246
Reference Pt.:	Top of PVC
Depth to Water (DTW)	11.54
Water Column Ht./Vol.	12.41/6.8
Purge Est.:	20 gal.
Purge Method(s):	Pump w/ded. tubing
Purge Date/Time(s):	-
Depth(s):	All
Rates (gpm):	1
Purged Volume:	20 gal.
DTW After Purging:	12.63
Yield Rate:	L - M - H
Purge Observations:	Water clear then turbid then clear again.

DTW Before Sampling:	12.63
Sample Date/Time:	1/23/01 @ 1445
Sampling Method:	Ded. Poly Tubing
Sampling Depth(s):	All
DTW After Sampling:	-
Chain-of-Custody No.(s):	-
Analytical Lab(s):	Veritech
Sampling Observations:	Water clear

SAMPLE CHEMISTRIES

	Temp. (°C)	pH	Sp. Cond.	Turb.
Start	9.3	7.4	0.972	30
End				

SAMPLE ANALYSES

Parameters	Pres. Meth.	Filter
TAL Metals - Total	HNO3	No
TAL Metals - Filtered	*Ice @ 4°C	Yes
Chloride	Ice @ 4°C	No

* Preserved at Lab.

PURGE CHEMISTRIES

Vol.	Temp. (°C)	pH	Sp. Cond.	Turb.
0	8.5	7.3	0.453	20
6	8.8	7.4	0.98	150
12	8.6	7.5	0.957	100
20	9.3	7.4	0.972	30

Comments: HNU - At background

Air Temp:

Weather Conditions:

Crew Chief Signature: Theresa M. Schneider Date: 1/23/01

LMS Well Sampling Log

Date: 1/24/01
Crew: TMS/MP
Job No: 446-156
Project: NYSDOT
Project Site: Harrison SR Landfill

METERS USED

Temp.: TLC # 11
pH: 98-16
Cond.: TLC # 11
Turb.: LMS # 001

Well ID No.: MW-4
Well Condition: Good
Well Depth/Diameter: 15.05/2"
Well Casing Type: SS Stickup/PVC
Screened Interval: Unknown
Casing Ht./Lock No.: 2246
Reference Pt.: Top of PVC
Depth to Water (DTW) 3.6
Water Column Ht./Vol. 11.4/6.27
Purge Est.: 19 gal.
Purge Method(s): Ded. Poly Bailer
Purge Date/Time(s): -

Depth(s): All
Rates (gpm): < 1
Purged Volume: 5 gal.
DTW After Purging: Well dry
Yield Rate: **L** - M - H
Purge Observations: Water clear then very turbid

DTW Before Sampling: 4.01
Sample Date/Time: 1/24/01 @ 1400
Sampling Method: Ded. Poly Bailer
Sampling Depth(s): All
DTW After Sampling: -
Chain-of-Custody No.(s): -
Analytical Lab(s): Veritech
Sampling Observations:

SAMPLE CHEMISTRIES

	Temp. (°C)	pH	Sp. Cond.	Turb.
Start	6.1	7.1	1.096	90
End				

SAMPLE ANALYSES

Parameters	Pres. Meth.	Filter
TAL Metals - Total	HNO3	No
TAL Metals - Filtered	*Ice @ 4°C	Yes
Chloride	Ice @ 4°C	No

* Preserved at Lab.

PURGE CHEMISTRIES

Vol.	Temp. (°C)	pH	Sp. Cond.	Turb.
0	6.3	7.1	1.128	50
5	8.6	7	1.107	>1000

Comments: HNU - At background

Air Temp:
Weather Conditions:

Crew Chief Signature Theresa M. Schneider Date: 1/24/01

LMS Well Sampling Log

Date: 1/23/01
Crew: TMS/MP
Job No: 446-156
Project: NYSDOT
Project Site: Harrison SR Landfill

METERS USED

Temp.: TLC # 11
pH: 98-16
Cond.: TLC # 11
Turb.: LMS # 001

Well ID No.: PC-1
Well Condition: Good
Well Depth/Diameter: 12.0/2"
Well Casing Type: SS Stickup/PVC
Screened Interval: 2-12'
Casing Ht./Lock No.: 2402
Reference Pt.: Top of PVC
Depth to Water (DTW) 4.91
Water Column Ht./Vol. 7.09/3.89
Purge Est.: 12gal.
Purge Method(s): Ded. Poly Bailer
Purge Date/Time(s): -

Depth(s): All
Rates (gpm): < 1
Purged Volume: 12 gal.
DTW After Purging: 5.88
Yield Rate: L - M - H
Purge Observations: Water turbid
Water brown and silty

DTW Before Sampling: 5.88
Sample Date/Time: 1/23/01 @ 1545
Sampling Method: Ded. Poly Bailer
Sampling Depth(s): All
DTW After Sampling: -
Chain-of-Custody No.(s): -
Analytical Lab(s): Veritech
Sampling Observations: Water turbid

SAMPLE CHEMISTRIES

	Temp. (°C)	pH	Sp. Cond.	Turb.
Start	7.2	7.6	0.599	300
End				

SAMPLE ANALYSES

Parameters	Pres. Meth.	Filter
TAL Metals - Total	HNO3	No
TAL Metals - Filtered	*Ice @ 4°C	Yes
Chloride	Ice @ 4°C	No

* Preserved at Lab.

PURGE CHEMISTRIES

Vol.	Temp. (°C)	pH	Sp. Cond.	Turb.
0	6.5	7.7	0.475	150
4	6.5	7.6	0.489	>900
8	7.3	7.6	0.521	>900
12	7.2	7.6	0.582	300

Comments: HNU - At background

Air Temp:
Weather Conditions:

Crew Chief Signature Theresa M. Schneider Date: 1/23/01

LMS Well Sampling Log

Date: 1/24/01
Crew: TMS/MP
Job No: 446-156
Project: NYSDOT
Project Site: Harrison SR Landfill

METERS USED
Temp.: TLC # 11
pH: 98-16
Cond.: TLC # 11
Turb.: LMS # 001

Well ID No.: PC-2
Well Condition: Casing Damaged
Well Depth/Diameter: 15.05/2"
Well Casing Type: SS Stickup/PVC
Screened Interval: 5.05-15.05
Casing Ht./Lock No.: 2402
Reference Pt.: Top of PVC
Depth to Water (DTW) 3.45
Water Column Ht./Vol. 11.60/6.38
Purge Est.: 20 gal.
Purge Method(s): Pump w/ded. tubing
Purge Date/Time(s): -

Depth(s): All
Rates (gpm): 0.5 gpm
Purged Volume: 20 gal.
DTW After Purging: 4.14
Yield Rate: L - M - H
Purge Observations: Water tubid then clear

DTW Before Sampling: 4.14
Sample Date/Time: 1/24/01 @ 1345
Sampling Method: Ded. Poly tubing.
Sampling Depth(s): All
DTW After Sampling: -
Chain-of-Custody No.(s): -
Analytical Lab(s): Veritech
Sampling Observations: Water clear

SAMPLE CHEMISTRIES

	Temp. (°C)	pH	Sp. Cond.	Turb.
Start	6.8	7.3	1.12	5
End				

SAMPLE ANALYSES

Parameters	Pres. Meth.	Filter
TAL Metals - Total	HNO3	No
TAL Metals - Filtered	*Ice @ 4°C	Yes
Chloride	Ice @ 4°C	No

* Preserved at Lab.

PURGE CHEMISTRIES

Vol.	Temp. (°C)	pH	Sp. Cond.	Turb.
0	5.9	7.3	1.071	150
7	7.1	7.1	1.16	20
14	7.2	7.1	1.178	5
20	7.0	7.1	1.158	5

Comments: HNU - At background
*Well is damaged.
Used 0.5 " diam. dedicated tubing to collect samples.

Air Temp:
Weather Conditions:

Crew Chief Signature Theresa M. Schneider Date: 1/24/01

LMS Well Sampling Log

Date: 1/22/01
Crew: TMS/MP
Job No: 446-156
Project: NYSDOT
Project Site: Harrison SR Landfill

METERS USED
Temp.: TLC # 11
pH: 98-16
Cond.: TLC # 11
Turb.: LMS # 001

Well ID No.: PC-3
Well Condition: Good/New
Well Depth/Diameter: 18.82/2"
Well Casing Type: SS Stickup/PVC
Screened Interval: 8.82 - 18.82
Casing Ht./Lock No.: 2402
Reference Pt.: Top of PVC
Depth to Water (DTW) 9.79
Water Column Ht./Vol. 9.03/4.97
Purge Est.: 15 gal.
Purge Method(s): Ded. Poly Bailer
Purge Date/Time(s): -

Depth(s): All
Rates (gpm): 1
Purged Volume: 15 gal.
DTW After Purging: 11.05
Yield Rate: L - M - H
Purge Observations: Water clear then turbid

DTW Before Sampling: 11.05
Sample Date/Time: 1/22/01 @ 1420
Sampling Method: Ded. Poly Bailer
Sampling Depth(s): All
DTW After Sampling: -
Chain-of-Custody No.(s): -
Analytical Lab(s): Veritech
Sampling Observations: Water turbid

SAMPLE CHEMISTRIES

	Temp. (°C)	pH	Sp. Cond.	Turb.
Start	7	7.7	1.023	325
End				

SAMPLE ANALYSES

Parameters	Pres. Meth.	Filter
TAL Metals - Total	HNO3	No
TAL Metals - Filtered	*Ice @ 4°C	Yes
Chloride	Ice @ 4°C	No

* Preserved at Lab.

PURGE CHEMISTRIES

Vol.	Temp. (°C)	pH	Sp. Cond.	Turb.
0	7.6	7.7	1.084	50
5	7.8	7.8	1.108	500
10	8.1	7.4	1.172	500
15	7.0	7.7	1.023	325

Comments: HNU - At background

Air Temp:
Weather Conditions:

Crew Chief Signature Theresa M. Schneider Date: 1/22/01

LMS Well Sampling Log

Date: 1/22/01
Crew: TMS/MP
Job No: 446-156
Project: NYSDOT
Project Site: Harrison SR Landfill

METERS USED

Temp.: TLC # 11
pH: 98-16
Cond.: TLC # 11
Turb.: LMS # 001

Well ID No.: PC-4
Well Condition: Good/New
Well Depth/Diameter: 16.94/2"
Well Casing Type: SS Stickup/PVC
Screened Interval: 6.94-16.94
Casing Ht./Lock No.: 2402
Reference Pt.: Top of PVC
Depth to Water (DTW) 10.05
Water Column Ht./Vol. 6.89/3.80
Purge Est.: 12 gal.
Purge Method(s): Ded. Poly Bailer
Purge Date/Time(s): -

Depth(s): All
Rates (gpm): 1
Purged Volume: 12 gal.
DTW After Purging: 11.26
Yield Rate: L - M - H
Purge Observations: Water turbid

DTW Before Sampling: 11.26
Sample Date/Time: 1/22/01 @ 1445
Sampling Method: Ded. Poly Bailer.
Sampling Depth(s): All
DTW After Sampling: -
Chain-of-Custody No.(s): -
Analytical Lab(s): Veritech
Sampling Observations:
Water turbid

SAMPLE CHEMISTRIES

	Temp. (°C)	pH	Sp. Cond.	Turb.
Start	9.5	7.6	0.457	400
End				

SAMPLE ANALYSES

Parameters	Pres. Meth.	Filter
TAL Metals - Total	HNO3	No
TAL Metals - Filtered	*Ice @ 4°C	Yes
Chloride	Ice @ 4°C	No

* Preserved at Lab.

PURGE CHEMISTRIES

Vol.	Temp. (°C)	pH	Sp. Cond.	Turb.
0	10.9	7.2	0.738	60
4	9.8	6.9	0.486	250
8	9.5	6.9	0.505	300
12	9.7	7	0.502	450

Comments: HNU - At background

Air Temp:
Weather Conditions:

Crew Chief Signature Theresa M. Schneider Date: 1/22/01

ATTACHMENT B

FIGURE 5.2

Date: 1/24/01
Crew: FMS/RKP
Site: Harrison Landfill
Operation: KYSDOT

FIELD DATA SHEET FOR SURFACE WATER

pH No: 98-16
Therm. No: TLC #11
Turbidity Meter No: LMS #001
Velocity Meter No:
Cond. Meter No. TLC #11

STATION No.	SAMPLE DEPTH (ft)	TOTAL DEPTH (ft)	TIME (HHMM)	TEMP (°C)	pH	COND. (µmhos/cm)	TURB. (NTUs)	FLOW MEAS.	SAMPLE BOTTLES				COMMENTS
									SAMPLE PARAMETERS	BOT. Nos.	SAMPLE PARAMETERS	BOT. Nos.	
SW-2	3"	3"	1415	7.3	7.2	0.415	8.0	<1cfs	TAL Metals (T)	1			
									" " (F)	1			
									Cl^-	1			
SW-4	3"	3"	1430	8.1	7.5	0.425	13.5	<1cfs	TAL Metals (T)	1			
									" " (F)	1			
									Cl^-	1			
SW-5	3"	3"	1500	7.3	7.2	0.445	8.0	<1cfs	TAL Metals (T)	1			Duplicate sample of SW-4
									" " (F)	1			
									Cl^-	1			

FMS

Date: 1/24/01
Crew: JMS / MT
Site: Harrison Landfill

FIELD DATA SHEET FOR SOIL/SEDIMENT SAMPLES

Oper: JMS
Thermometer No:

STA. NO.	TIME	SMPL DPTH	METHOD	TEXT.	CLR.	ODOR	SAMPLE BOTTLES: SAMPLE PARAMETERS	BOT. Nos.	SAMPLE BOTTLES: SAMPLE PARAMETERS	BOT. Nos.	COMMENTS
SD-2	1415	2.0"	Dad. SS Spoon	Loose/ Gran.	Br.	None	TAL METALS, Cl⁻	1			
SD-4	1430	3.5"	Dad SS Spoon	Loose/ Gran.	Br	None	TAL Metals, Cl⁻	1			@ Culvert

JMS

ATTACHMENT C

AIR MONITORING FIELD DATA SHEET

Site Location: Harrison Quibresidency Landfill Date: 1/22/01 - 1/24/01

SAMPLE POINT	TIME (24 hr clock)	INITIALS	% LEL CGI	ppm PID	ppm FID		OBSERVATIONS
GV-1		Jms	<10%	<1.0	<1.0		No readings above
GV-2		Jms	<10%	<1.0	<1.0		site background
GV-3		Jms	<10%	<1.0	<1.0		(PID/FID).
GV-4		Jms	<10%	<1.0	<1.0		No alarm for
SPL		Jms	<10%	<1.3	<1.0		CGI.
EPL		Jms	<10%	<1.0	<1.0		
NPL		Jms	<10%	<1.2	<1.0		
WPL		Jms	<10%	<1.0	<1.0		

Instrumentation:

CGI Gas Tech Genius FID Foxboro OVA 128

PID HNu

Notes:

NM = Not measured.

ppm = parts per million.

mg/m³ = milligrams per cubic meter.

LEL Lower Explosive Limit

ATTACHMENT D

Hampton-Clarke, Inc.
veritech laboratories

175 Route 46 West, Unit D
Fairfield, NJ 07004
(973) 244-9770
Federal ID: 222679402

Lawler, Metusky & Skelly Engineers

Format: NYDOH-CatA

Project: Harrison LF
PO Number:

Samples submitted on: 1/23/01

AB22967
AB22968
AB22969
AB22970

Environmental Chemistry Section

FEB 26 2001

Date: 2/7/01
HCI Project: 01241514

SDG Narrative

Project: NYSDOT Harrison LF
Job: 446-156

Hampton-Clarke, Inc. (HCI) received the following Lawler, Metusky & Skelly Engineers samples on January 27, 2001:

LMS #	HCI #	Type	Analysis
LMW-2 unfiltered	AB22967	Aqueous	TAL-METALS (200.7), HG (245.1), CHLORIDE (EPA 325)
LMW-2 filtered	AB22968	Aqueous	TAL-METALS (200.7), HG (245.1)
PC-1 unfiltered	AB22969	Aqueous	TAL-METALS (200.7), HG (245.1), CHLORIDE (EPA 325)
PC-1 filtered	AB22970	Aqueous	TAL-METALS (200.7), HG (245.1)

Following method 200.7, the ICP samples are concentrated during the digestion step from 100 ml to 50 ml. This concentration procedure is evident on the result page by the dilution factor of 0.5, which corrects the result for the concentration step.

Problems associated with these analyses are as follows:

Metals
For batch 3168 (Aqueous):

The serial dilution sample did not meet the QC criteria for Sodium.

The MS and MSD fell outside the QC limit for the following elements:

Calcium	MS-66%	MSD-54%
Iron	MS-70%	MSD-67%
Manganese**	MS-54%	MSD-33%

** The sample concentration of Manganese exceeded the spike amount added by a factor of four, therefore the spike recovery criteria does not apply.

The poor spike recovery for Calcium and Iron may be related to matrix interference, since the LSC and LCSD recoveries for those elements were within the QC limits.

Wet Chemistry

There were no problems associated with this analysis.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or his designee, as verified by the following signature.

Stan Gilewicz, Laboratory Director

2/23/01
Date

Airbill # 0190 ... 5411 ...

Veritech, 175 Route 46 West, Fairfield, NJ 07004
A Division of HAMPTON-CLARKE, INC. NJDEPE # 14622

CHAIN OF CUSTODY RECORD

PHONE (800) 426-9992
FAX (973) 439-1458

CUSTOMER INFORMATION

CUSTOMER: LAWLER MATUSKY & SKELLY
ADDRESS: One Blue Hill Plaza Pearl River NY
TELEPHONE: (845) 735-8300
FAX: (845) 735-7466
PROJECT: NYS DOT
PROJECT MANAGER: 446-156
PROJECT LOCATION: Harrison Landfill
STATE: New York
PO NUMBER: /

REPORT INFORMATION

SEND REPORT TO: MARIA HEINCZ
Same

SEND INVOICE TO: MARIA HEINCZ
Same

PROJECT INFORMATION

TURNAROUND (CONFIRM RUSH TAT'S WITH LAB)
- [x] STANDARD
- [ ] RUSH
- [ ] 24 HOURS 100%
- [ ] 48 HOURS 75%
- [ ] 72 HOURS 50%
- [ ] 1 WEEK 25%
- [ ] 10 DAYS 10%

DELIVERABLES (PLEASE CHECK BOX)
- [ ] STANDARD
- [ ] FULL
- [ ] WASTE
- [ ] BUST
- [ ] NJ REDUCED
- [ ] EXCEL
- [ ] HAZSITE
- [ ] CUSTOM
- [ ] ELECTRONIC DELIVERABLE
- [ ] OTHER (SPECIFY)

ANALYTICAL REQUESTS

LAB SAMPLE NUMBER (LAB USE ONLY)	SAMPLE IDENTIFICATION	METHANOL BOTTLE #	DATE COLLECTED	TIME COLLECTED	COMPOSITE (C)	GRAB (G)	SAMPLE MATRIX	H2SO4	HNO3	HCL	NaOH	ZnAc + NaOH	Ascorbic	NONE	Methanol	Other	ANALYSIS
AB22967	LMW-2	/	1/23/01	1445		✓	GW		1								TAL METALS - TOTAL
22968	↓	/	↓	↓		✓	↓							1			TAL METALS - Dissolved *
22967	↓	/	↓	↓		✓	↓							1			Chloride
22969	PC-1	/	1/23/01	1545		✓	GW		1								TAL METALS - TOTAL
22970	↓	/	↓	↓		✓	↓							1			TAL Metals - Dissolved *
22969	↓	/	↓	↓		✓	↓							1			Chloride
	Temp Blank	—		—			—				—						— —

SAMPLER CERTIFIES THAT EACH SAMPLE RECEIVED PROPER FIELD PRESERVATION (IF REQUIRED) (INITIALS)

SAMPLE HAZARDS: FLAMMABLE [ ] SKIN IRRITANT [ ] NON-HAZARD [ ] UNKNOWN [x] NOXIOUS FUMES [ ]

SPECIAL INSTRUCTIONS: To be filtered & preserved in Lab

TEMPERATURE UPON RECEIPT: 2.6

RELINQUISHED BY / AGENT OF	DATE / TIME	RECEIVED BY / AGENT OF	DATE / TIME
J. Schneider	1/23/01	1/23/01 Frank Dani...	1/23/01

CONDITION UPON RECEIPT FORM

Veritech

Date Received: 1/23/01 Filed By: F.D

Client: LAWLER MATUSKY Project/Account: NYSDOT

Veritech Project # _____

YES	NO		INITIAL CONDITIONS
✓		[1]	Is there a corresponding Chain of Custody included with the samples?
✓		[2]	Are the samples in a container such as a cooler or ice chest?
✓		[3]	Are the custody seals intact? IF NO, please circle one of the following: missing broken N.A.
2.6 °C		[4]	Please specify the temperature inside the container.

YES	NO		SAMPLE INFORMATION
✓		[5]	Are the samples properly refrigerated (where required), have they arrived on ice?
✓		[6]	Are the samples within holding times for the parameters listed on the COC? If NO, list parameters and associated samples: _____
✓		[7]	Are all of the sample bottles intact? If NO, specify sample numbers below: broken: _____ leaking: _____
✓		[8]	Are all of the sample labels or numbers legible? If NO, specify: _____
✓		[9]	Do the contents of the container match the COC? If NO, specify: _____
✓		[10]	Is there enough sample sent for the analyses listed on the COC? If NO, specify: _____
✓		[11]	Are the samples preserved correctly (see Preservation Form for actual pH readings)?
		[12]	Are all soil VO(NJ) samples properly preserved in methanol with the correct soil weights (8g - 12g) and accompanied by dry soil? _____

		OTHER
	[13]	Specify: _____

NO.	ACTION	CORRECTIVE ACTIONS

PRESERVATION DOCUMENTATION

Date Received 1/24/01
Client Lawler MATUSKY
Veritech Project #

Filed By F.J.
Project NYS DOT

SAMPLE ID:	CONTAINER SIZE	CONTAINER TYPE (PG)	PARAMETER	PRESERVATIVE	pH
LRRW-2	1L	P	Metal	HNO_3	1
PC-1	1L	P	METAL	HNO_3	1

CHAIN OF CUSTODY RECORD - REFRIGERATOR #2

Client ID: LAWLER M.S

Location: H2

COMMENTS

		REMOVED:				RETURNED:			
TEST	SAMPLE No.	DATE	TIME	SIGNATURE	ALTERNATE	DATE	TIME	SIGNATURE	ALTERNATE
TDWI-HG-1	22967-70	1/25/01	1030	RM	REC	1/25/01	1105	RM	REC
C1	22967,69	1/25/01	1140	JB		1/25/01	1700	JB	

FOR LOGIN BATCH

AB22967-70

INORGANIC ANALYSIS DATA SHEET

Lab Name: Veritech
Data File Name: W3169B

Lab Code: 14622
Analysis Date: 02/02/2001

Matrix: Water
Lab Sample ID: AB22967
Client ID: LMW-2 unfiltered

Level: low/med
Dilution: 0.5

Batch: 3168
% Solid: 0

Concentration Units: ug/L

Cas No.	Analyte	MDL	Concentration	M
7429905	Aluminum	28	1800	P
7440360	Antimony	1.1	U	P
7440382	Arsenic	3.5	U	P
7440393	Barium	8.7	200	P
7440417	Beryllium	1.1	U	P
7440702	Calcium	350	96000	P
7440473	Chromium	5.7	U	P
7440484	Cobalt	1.7	U	P
7440508	Copper	5.9	U	P
7439896	Iron	33	3200	P
7439954	Magnesium	40	36000	P
7439965	Manganese	2.6	1500	P
7440020	Nickel	3.3	13	P
7782492	Selenium	4.3	U	P
7440224	Silver	2.8	U	P
7440280	Thallium	3.0	U	P
7440622	Vanadium	1.7	8.3	P
7440666	Zinc	6.9	8.7	P

U - Indicates compound not found above detection/reporting limit
* - Indicates compound above calibration range
P - Indicates analyzed by ICP(OPTIMA 3000DV)
CV - Indicates analyzed by Cold Vapor

Comments: _____

INORGANIC ANALYSIS DATA SHEET

Lab Name: Veritech

Data File Name: A3168A

Lab Code: 14622

Analysis Date: 01/30/2001

Matrix: Water

Lab Sample ID: AB22967
Client ID: LMW-2 unfiltered

Level: low/med
Batch: 3168

Dilution: 0.5
% Solid: 0

Concentration Units: ug/L

Cas No.	Analyte	MDL	Concentration	M
7440439	Cadmium	1.3	U	P
7439921	Lead	2.0	U	P

U - Indicates compound not found above detection/reporting limit
* - Indicates compound above calibration range
P - Indicates analyzed by ICP(OPTIMA 3000DV)
CV - Indicates analyzed by Cold Vapor

Comments: _____

OV 2/4/1

INORGANIC ANALYSIS DATA SHEET

Lab Name: Veritech

Data File Name: A3168Z

Lab Code: 14622

Analysis Date: 1/26/01

Matrix: Water

Lab Sample ID: AB22967
Client ID: LMW-2 unfiltered

Level: low/med

Dilution: 0.5

Batch: 3168

% Solid: 0

Concentration Units: ug/L

Cas No.	Analyte	MDL	Concentration	M
7440235	Sodium	67	43000	P
7440097	Potassium	36	6400	P

U - Indicates compound not found above detection/reporting limit
* - Indicates compound above calibration range
P - Indicates analyzed by ICP(ARL 3560)
CV - Indicates analyzed by Cold Vapor

Comments:_____

DLT 2/16/01

INORGANIC ANALYSIS DATA SHEET

Lab Name: Veritech

Lab Code: 14622

Matrix: Water

Level: low/med
Batch: 3168

Data File Name: H3168A

Analysis Date: 01/26/2001

Lab Sample ID: AB22967
Client ID: LMW-2 unfiltered
Dilution: 1
% Solid: 0

Concentration Units: Ug/L

Cas No.	Analyte	MDL	Concentration	M
7439976	Mercury	0.21	U	CV

U - Indicates compound not found above detection/reporting limit
* - Indicates compound above calibration range
P - Indicates analyzed by ICP(OPTIMA 3000DV)
CV - Indicates analyzed by Cold Vapor

Comments: _____

B 112960

INORGANIC ANALYSIS DATA SHEET

Lab Name: Veritech
Data File Name: W3169B

Lab Code: 14622
Analysis Date: 02/02/2001

Matrix: Water
Lab Sample ID: AB22968
Client ID: LMW-2 filtered

Level: low/med
Dilution: 0.5

Batch: 3168
% Solid: 0

Concentration Units: ug/L

Cas No.	Analyte	MDL	Concentration	M
7429905	Aluminum	28	U	P
7440360	Antimony	1.1	U	P
7440382	Arsenic	3.5	U	P
7440393	Barium	8.7	190	P
7440417	Beryllium	1.1	U	P
7440702	Calcium	350	100000	P
7440473	Chromium	5.7	U	P
7440484	Cobalt	1.7	U	P
7440508	Copper	5.9	U	P
7439896	Iron	33	U	P
7439954	Magnesium	40	39000	P
7439965	Manganese	2.6	2000	P
7440020	Nickel	3.3	17	P
7782492	Selenium	4.3	U	P
7440224	Silver	2.8	U	P
7440280	Thallium	3.0	U	P
7440622	Vanadium	1.7	2.9	P
7440666	Zinc	6.9	U	P

U - Indicates compound not found above detection/reporting limit
* - Indicates compound above calibration range
P - Indicates analyzed by ICP(OPTIMA 3000DV)
CV - Indicates analyzed by Cold Vapor

Comments:_____

INORGANIC ANALYSIS DATA SHEET

Lab Name: Veritech
Data File Name: A3168A

Lab Code: 14622
Analysis Date: 01/30/2001

Matrix: Water
Lab Sample ID: AB22968
Client ID: LMW-2 filtered

Level: low/med
Dilution: 0.5

Batch: 3168
% Solid: 0

Concentration Units: ug/L

Cas No.	Analyte	MDL	Concentration	M
7440439	Cadmium	1.3	U	P
7439921	Lead	2.0	U	P

U - Indicates compound not found above detection/reporting limit
* - Indicates compound above calibration range
P - Indicates analyzed by ICP(OPTIMA 3000DV)
CV - Indicates analyzed by Cold Vapor

Comments:_____

INORGANIC ANALYSIS DATA SHEET

Lab Name: Veritech
Data File Name: A3168Z

Lab Code: 14622
Analysis Date: 1/26/01

Matrix: Water
Lab Sample ID: AB22968
Client ID: LMW-2 filtered

Level: low/med
Dilution: 0.5

Batch: 3168
% Solid: 0

Concentration Units: ug/L

Cas No.	Analyte	MDL	Concentration	M
7440235	Sodium	67	50000	P
7440097	Potassium	36	6200	P

U - Indicates compound not found above detection/reporting limit
* - Indicates compound above calibration range
P - Indicates analyzed by ICP(ARL 3560)
CV - Indicates analyzed by Cold Vapor

Comments:_____

INORGANIC ANALYSIS DATA SHEET

Lab Name: Veritech
Data File Name: H3168A

Lab Code: 14622
Analysis Date: 01/26/2001

Matrix: Water
Lab Sample ID: AB22968
Client ID: LMW-2 filtered

Level: low/med
Dilution: 1

Batch: 3168
% Solid: 0

Concentration Units: Ug/L

Cas No.	Analyte	MDL	Concentration	M
7439976	Mercury	0.21	U	CV

U - Indicates compound not found above detection/reporting limit
* - Indicates compound above calibration range
P - Indicates analyzed by ICP(OPTIMA 3000DV)
CV - Indicates analyzed by Cold Vapor

Comments:_____

33
1/26/01

INORGANIC ANALYSIS DATA SHEET

Lab Name: Veritech
Data File Name: W3169B

Lab Code: 14622
Analysis Date: 02/02/2001

Matrix: Water
Lab Sample ID: AB22969
Client ID: PC-1 unfiltered

Level: low/med
Dilution: 0.5

Batch: 3168
% Solid: 0

Concentration Units: ug/L

Cas No.	Analyte	MDL	Concentration	M
7429905	Aluminum	28	9400	P
7440360	Antimony	1.1	U	P
7440382	Arsenic	3.5	U	P
7440393	Barium	8.7	130	P
7440417	Beryllium	1.1	U	P
7440702	Calcium	350	49000	P
7440473	Chromium	5.7	20	P
7440484	Cobalt	1.7	3.5	P
7440508	Copper	5.9	18	P
7439896	Iron	33	17000	P
7439954	Magnesium	40	12000	P
7439965	Manganese	2.6	540	P
7440020	Nickel	3.3	12	P
7782492	Selenium	4.3	U	P
7440224	Silver	2.8	U	P
7440280	Thallium	3.0	U	P
7440622	Vanadium	1.7	36	P
7440666	Zinc	6.9	39	P

U - Indicates compound not found above detection/reporting limit
* - Indicates compound above calibration range
P - Indicates analyzed by ICP(OPTIMA 3000DV)
CV - Indicates analyzed by Cold Vapor

Comments:_____

INORGANIC ANALYSIS DATA SHEET

Lab Name: Veritech
Data File Name: A3168A

Lab Code: 14622
Analysis Date: 01/30/2001

Matrix: Water
Lab Sample ID: AB22969
Client ID: PC-1 unfiltered

Level: low/med
Dilution: 0.5

Batch: 3168
% Solid: 0

Concentration Units: ug/L

Cas No.	Analyte	MDL	Concentration	M
7440439	Cadmium	1.3	U	P
7439921	Lead	2.0	5.9	P

U - Indicates compound not found above detection/reporting limit
* - Indicates compound above calibration range
P - Indicates analyzed by ICP(OPTIMA 3000DV)
CV - Indicates analyzed by Cold Vapor

Comments:_____

INORGANIC ANALYSIS DATA SHEET

Lab Name: Veritech
Data File Name: A3168Z

Lab Code: 14622
Analysis Date: 1/26/01

Matrix: Water
Lab Sample ID: AB22969
Client ID: PC-1 unfiltered

Level: low/med
Dilution: 0.5

Batch: 3168
% Solid: 0

Concentration Units: ug/L

Cas No.	Analyte	MDL	Concentration	M
7440235	Sodium	67	47000	P
7440097	Potassium	36	6800	P

U - Indicates compound not found above detection/reporting limit
* - Indicates compound above calibration range
P - Indicates analyzed by ICP(ARL 3560)
CV - Indicates analyzed by Cold Vapor

Comments:_____

INORGANIC ANALYSIS DATA SHEET

Lab Name: Veritech

Data File Name: H3168A

Lab Code: 14622

Analysis Date: 01/26/2001

Matrix: Water

Lab Sample ID: AB22969
Client ID: PC-1 unfiltered

Level: low/med
Batch: 3168

Dilution: 1
% Solid: 0

Concentration Units: Ug/L

Cas No.	Analyte	MDL	Concentration	M
7439976	Mercury	0.21	U	CV

U - Indicates compound not found above detection/reporting limit
* - Indicates compound above calibration range
P - Indicates analyzed by ICP(OPTIMA 3000DV)
CV - Indicates analyzed by Cold Vapor

Comments:_____

INORGANIC ANALYSIS DATA SHEET

Lab Name: Veritech
Data File Name: W3169B

Lab Code: 14622
Analysis Date: 02/02/2001

Matrix: Water
Lab Sample ID: AB22970
Client ID: PC-1 filtered

Level: low/med
Dilution: 0.5

Batch: 3168
% Solid: 0

Concentration Units: ug/L

Cas No.	Analyte	MDL	Concentration	M
7429905	Aluminum	28	U	P
7440360	Antimony	1.1	U	P
7440382	Arsenic	3.5	U	P
7440393	Barium	8.7	42	P
7440417	Beryllium	1.1	U	P
7440702	Calcium	350	51000	P
7440473	Chromium	5.7	U	P
7440484	Cobalt	1.7	U	P
7440508	Copper	5.9	U	P
7439896	Iron	33	U	P
7439954	Magnesium	40	8900	P
7439965	Manganese	2.6	7.6	P
7440020	Nickel	3.3	U	P
7782492	Selenium	4.3	U	P
7440224	Silver	2.8	U	P
7440280	Thallium	3.0	U	P
7440622	Vanadium	1.7	U	P
7440666	Zinc	6.9	U	P

U - Indicates compound not found above detection/reporting limit
* - Indicates compound above calibration range
P - Indicates analyzed by ICP(OPTIMA 3000DV)
CV - Indicates analyzed by Cold Vapor

Comments:_____

INORGANIC ANALYSIS DATA SHEET

Lab Name: Veritech
Data File Name: A3168A

Lab Code: 14622
Analysis Date: 01/30/2001

Matrix: Water
Lab Sample ID: AB22970
Client ID: PC-1 filtered

Level: low/med
Dilution: 0.5

Batch: 3168
% Solid: 0

Concentration Units: ug/L

Cas No.	Analyte	MDL	Concentration	M
7440439	Cadmium	1.3	U	P
7439921	Lead	2.0	U	P

U - Indicates compound not found above detection/reporting limit
* - Indicates compound above calibration range
P - Indicates analyzed by ICP(OPTIMA 3000DV)
CV - Indicates analyzed by Cold Vapor

Comments: _____

INORGANIC ANALYSIS DATA SHEET

Lab Name: Veritech
Data File Name: A3168Z

Lab Code: 14622
Analysis Date: 1/26/01

Matrix: Water
Lab Sample ID: AB22970
Client ID: PC-1 filtered

Level: low/med
Dilution: 0.5

Batch: 3168
% Solid: 0

Concentration Units: ug/L

Cas No.	Analyte	MDL	Concentration	M
7440235	Sodium	67	57000	P
7440097	Potassium	36	4300	P

U - Indicates compound not found above detection/reporting limit
* - Indicates compound above calibration range
P - Indicates analyzed by ICP(ARL 3560)
CV - Indicates analyzed by Cold Vapor

Comments:_____

INORGANIC ANALYSIS DATA SHEET

Lab Name: Veritech

Data File Name: H3168A

Lab Code: 14622

Analysis Date: 01/26/2001

Matrix: Water

Lab Sample ID: AB22970
Client ID: PC-1 filtered

Level: low/med
Batch: 3168

Dilution: 1
% Solid: 0

Concentration Units: Ug/L

Cas No.	Analyte	MDL	Concentration	M
7439976	Mercury	0.21	U	CV

U - Indicates compound not found above detection/reporting limit
* - Indicates compound above calibration range
P - Indicates analyzed by ICP(OPTIMA 3000DV)
CV - Indicates analyzed by Cold Vapor

Comments: _____

Veritech Wet Chem Form 1 Summary

Lab #: AB22967

Lab #: AB22967 | Sample Matrix: Aqueous

Sample ID: LMW-2 unfiltered | Date Received: 1/23/01

Test Group Name: Chloride EPA 325 | Date Prepared:

Analyte	Concentration	Units	MDL/PQL	DF	Date Analyzed
Chloride	32	mg/l	1.8	1	1/25/01

Lab #: AB22969

Lab #: AB22969 | Sample Matrix: Aqueous

Sample ID: PC-1 unfiltered | Date Received: 1/23/01

Test Group Name: Chloride EPA 325 | Date Prepared:

Analyte	Concentration	Units	MDL/PQL	DF	Date Analyzed
Chloride	30	mg/l	1.8	1	1/25/01

3
BLANKS

Lab Name: Veritech Data File Name: W3169B

Lab Code: 14622 Analysis Date: 02/01/2001

Batch: 3168

All Concentration Units in PPM except Mercury in PPB

Analyte	MB 3168(.5)	ICB M-01-BL	CCB	CCB	CCB	CCB	CCB	CCB	M
Aluminum	0.0580000 U	0.1160000 U	0.1160000 U	0.1160000 U	0.1160000 U	0.1160000 U	0.1160000 U	0.1160000 U	P
Antimony	0.0032550 U	0.0065100 U	0.0065100 U	0.0065100 U	0.0065100 U	0.0065100 U	0.0065100 U	0.0065100 U	P
Arsenic	0.0036150 U	0.0072300 U	0.0072300 U	0.0072300 U	0.0072300 U	0.0072300 U	0.0072300 U	0.0072300 U	P
Barium	0.0228000 U	0.0456000 U	0.0456000 U	0.0456000 U	0.0456000 U	0.0456000 U	0.0456000 U	0.0456000 U	P
Beryllium	0.0024600 U	0.0049200 U	0.0049200 U	0.0049200 U	0.0049200 U	0.0049200 U	0.0049200 U	0.0049200 U	P
Calcium	0.3790000 U	0.7580000 U	0.7580000 U	0.7580000 U	0.7580000 U	0.7580000 U	0.7580000 U	0.7580000 U	P
Chromium	0.0157500 U	0.0315000 U	0.0315000 U	0.0315000 U	0.0315000 U	0.0315000 U	0.0315000 U	0.0315000 U	P
Cobalt	0.0046050 U	0.0092100 U	0.0092100 U	0.0092100 U	0.0092100 U	0.0092100 U	0.0092100 U	0.0092100 U	P
Copper	0.0199000 U	0.0398000 U	0.0398000 U	0.0398000 U	0.0398000 U	0.0398000 U	0.0398000 U	0.0398000 U	P
Iron	0.0880000 U	0.1760000 U	0.1760000 U	0.1760000 U	0.1760000 U	0.1760000 U	0.1760000 U	0.1760000 U	P
Magnesium	0.2575000 U	0.5150000 U	0.5150000 U	0.5150000 U	0.5150000 U	0.5150000 U	0.5150000 U	0.5150000 U	P
Manganese	0.0117500 U	0.0235000 U	0.0235000 U	0.0235000 U	0.0235000 U	0.0235000 U	0.0235000 U	0.0235000 U	P
Nickel	0.0151000 U	0.0302000 U	0.0302000 U	0.0302000 U	0.0302000 U	0.0302000 U	0.0302000 U	0.0302000 U	P
Selenium	0.0196500 U	0.0393000 U	0.0393000 U	0.0393000 U	0.0393000 U	0.0393000 U	0.0393000 U	0.0393000 U	P
Silver	0.0051500 U	0.0103000 U	0.0103000 U	0.0103000 U	0.0103000 U	0.0103000 U	0.0103000 U	0.0103000 U	P
Thallium	0.0031200 U	0.0062400 U	0.0062400 U	0.0062400 U	0.0062400 U	0.0062400 U	0.0062400 U	0.0062400 U	P
Vanadium	0.0042700 U	0.0085400 U	0.0085400 U	0.0085400 U	0.0085400 U	0.0085400 U	0.0085400 U	0.0085400 U	P
Zinc	0.0200500 U	0.0401000 U	0.0401000 U	0.0401000 U	0.0401000 U	0.0401000 U	0.0401000 U	0.0401000 U	P

3
BLANKS

Name: Veritech Data File Name: A3168A

Code: 14622 Analysis Date: 01/30/2001

Batch: 3168

Concentration Units in PPM except Mercury in PPB

Analyte	MB 3168(.5)	ICB M-01-BL	CCB	CCB	CCB				M
admium	0.0014000 U	0.0028000 U	0.0028000 U	0.0028000 U	0.0028000 U				P
ead	0.0034350 U	0.0068700 U	0.0068700 U	0.0068700 U	0.0068700 U				P

3
BLANKS

b Name: Veritech Data File Name: A3168Z

b Code: 14622 Analysis Date: 1/26/01

Batch: 3168

l Concentration Units in PPM except Mercury in PPB

Analyte	MB 3168(.5)	ICB M-00-BL	CCB	CCB					M
Potassium	0.0530000 U	0.1060000 U	0.1060000 U	0.1060000 U					P
Sodium	0.1305000 U	0.2610000 U	0.2610000 U	0.2610000 U					P

3
BLANKS

Lab Name: Veritech Data File Name: M3168A

Lab Code: 14622 Analysis Date: 01/26/2001

Batch: 3168

All Concentration Units in PPM except Mercury in PPB

Analyte	MB 3168	ICB	CCB	CCB					M
Mercury	0.2100000 U	0.2100000 U	0.2100000 U	0.2100000 U					C

M

Spike Sample Recovery

Lab Name: Veritech Data File Name: W3169B

Lab Code: 14622 Analysis Date: 02/02/2001

ICP sample ID: 22967 Batch: 3168

All Concentration Units in PPM except Mercury in PPB

Analyte	Amt Added	QC Limits	22967 Non Spike	22967 MS 1 Matrix Spike 1	22967 MS 2 Matrix Spike 2	Rec1	Rec2	M
Aluminum	5.000	70 - 130	3.5627281	7.6050665	7.5519619	81	80	P
Antimony	0.5000	70 - 130	0.0065100 U	0.4335749	0.4404347	87	88	P
Arsenic	0.5000	70 - 130	0.0072300 U	0.4432456	0.4483825	89	90	P
Barium	0.5000	70 - 130	0.4002481	0.8265599	0.8109242	85	82	P
Beryllium	0.5000	70 - 130	0.0049200 U	0.4430757	0.4479084	89	90	P
Calcium	50.000	70 - 130	191.1574630	223.9604040	218.0430740	66*	54*	P
Chromium	0.5000	70 - 130	0.0315000 U	0.4473059	0.4516922	89	90	P
Cobalt	0.5000	70 - 130	0.0092100 U	0.4467946	0.4438759	89	89	P
Copper	0.5000	70 - 130	0.0398000 U	0.4212335	0.4262409	84	85	P
Iron	5.000	70 - 130	6.4200789	9.8965018	9.7494214	70*	67*	P
Magnesium	50.000	70 - 130	71.4235793	111.4139240	109.3934990	80	76	P
Manganese	0.5000	70 - 130	2.9524286	3.2213938	3.1183964	54*	33*	P
Nickel	0.5000	70 - 130	0.0302000 U	0.4563107	0.4588479	91	92	P
Selenium	0.5000	70 - 130	0.0393000 U	0.4368480	0.4412744	87	88	P
Silver	0.5000	70 - 130	0.0103000 U	0.4001646	0.4210338	80	84	P
Thallium	0.5000	70 - 130	0.0062400 U	0.4034277	0.4006229	81	80	P
Vanadium	0.5000	70 - 130	0.0165977	0.4382653	0.4420993	84	85	P
Zinc	0.5000	70 - 130	0.0401000 U	0.4556963	0.4479984	91	90	P

* - Indicates the analyte failed the control limit criteria

U - Indicates the analyte was not detected

Spike Sample Recovery

Lab Name: Veritech

Data File Name: A3168A

Lab Code: 14622

Analysis Date: 01/30/2001

ICP sample ID: 22967

Batch: 3168

All Concentration Units in PPM except Mercury in PPB

Analyte	Amt Added	QC Limits	22967 Non Spike	22967 MS 1 Matrix Spike 1	22967 MS 2 Matrix Spike 2	Rec1	Rec2		M
[illegible]admium	0.5000	70 - 130	0.0028000 U	0.4237865	0.4279827	85	86		P
[illegible]ead	0.5000	70 - 130	0.0068700 U	0.4325882	0.4371244	87	87		P

* - Indicates the analyte failed the control limit criteria
U - Indicates the analyte was not detected

Spike Sample Recovery

Lab Name: Veritech Data File Name: A3168Z

Lab Code: 14622 Analysis Date: 1/26/01

ICP sample ID: 22967 Batch: 3168

All Concentration Units in PPM except Mercury in PPB

Analyte	Amt Added	QC Limits	22967 Non Spike	22967 MS 1 Matrix Spike 1	22967 MS 2 Matrix Spike 2	Rec1	Rec2		M
[illegible]otassium	50.000	70 - 130	12.8140000	55.5940000	55.7520000	86	86		P
[illegible]odium	50.000	70 - 130	86.4670000	125.8790000	123.0110000	79	73		P

* - Indicates the analyte failed the control limit criteria
U - Indicates the analyte was not detected

Spike Sample Recovery

Lab Name: Veritech

Data File Name: H3168A

Lab Code: 14622

Analysis Date: 01/26/2001

ICP sample ID: 22967

Batch: 3168

All Concentration Units in PPM except Mercury in PPB

Analyte	Amt Added	QC Limits	22967 Non Spike	22967 MS 1 Matrix Spike 1	22967 MS 2 Matrix Spike 2	Rec1	Rec2		
Mercury	10.000	70 - 130	0.0308968	9.7771089	10.1498392	97	101	M	C

- Indicates the analyte failed the control limit criteria
- Indicates the analyte was not detected

Laboratory Control Sample

Lab Name: Veritech Data File Name: W3169B

Lab Code: 14622 Analysis Date: 02/02/2001

ICP sample ID: LCSW Batch: 3168

All Concentration Units in PPM except Mercury in PPB

Analyte	Spike Amount	QC Limits	Found	Rec		M
Aluminum	5.000	85-115	5.0027880	100		P
Antimony	0.5000	85-115	0.5043446	101		P
Arsenic	0.5000	85-115	0.4928017	99		P
Barium	0.5000	85-115	0.5103808	102		P
Beryllium	0.5000	85-115	0.4940350	99		P
Calcium	50.000	85-115	51.4421602	103		P
Chromium	0.5000	85-115	0.5033843	101		P
Cobalt	0.5000	85-115	0.5095008	102		P
Copper	0.5000	85-115	0.4892195	98		P
Iron	5.000	85-115	5.0437473	101		P
Magnesium	50.000	85-115	50.8392106	102		P
Manganese	0.5000	85-115	0.4986404	100		P
Nickel	0.5000	85-115	0.5076238	102		P
Selenium	0.5000	85-115	0.4929750	99		P
Silver	0.5000	85-115	0.4927776	99		P
Thallium	0.5000	85-115	0.5032767	101		P
Vanadium	0.5000	85-115	0.4854088	97		P
Zinc	0.5000	85-115	0.4942603	99		P

* - Indicates the analyte failed the control limit criteria
U - Indicates the analyte was not detected

Laboratory Control Sample

Lab Name: Veritech

Data File Name: A3168A

Lab Code: 14622

Analysis Date: 01/30/2001

ICP sample ID: LCSW

Batch: 3168

All Concentration Units in PPM except Mercury in PPB

Analyte	Spike Amount	QC Limits	Found	Rec		
Cadmium	0.5000	85-115	0.4897794	98		P
Lead	0.5000	85-115	0.4963005	99		P

* - Indicates the analyte failed the control limit criteria
U - Indicates the analyte was not detected

Laboratory Control Sample

Lab Name: Veritech Data File Name: A3168Z

Lab Code: 14622 Analysis Date: 1/26/01

ICP sample ID: LCSW Batch: 3168

All Concentration Units in PPM except Mercury in PPB

Analyte	Spike Amount	QC Limits	Found	Rec	M
Potassium	50.000	85-115	47.0610000	94	P
Sodium	50.000	85-115	48.1880000	96	P

* - Indicates the analyte failed the control limit criteria
U - Indicates the analyte was not detected

Laboratory Control Sample

Lab Name: Veritech

Data File Name: H3168A

Lab Code: 14622

Analysis Date: 01/26/2001

ICP sample ID: LCSW

Batch: 3168

All Concentration Units in PPM except Mercury in PPB

Analyte	Spike Amount	QC Limits	Found	Rec		
Mercury	10.000	85-115	10.0540243	101		C

* - Indicates the analyte failed the control limit criteria
U - Indicates the analyte was not detected

INORGANIC METHOD BLANK SUMMARY

Blank Matrix: Water
Units: mg/L

Analyte	Practical Quant Limit	Batch Number	Method Blank Result
Chloride	1.0	080w	ND

VERITECH **NJ STATE LAB ID: 14622**

INORGANIC SPIKE SAMPLE RECOVERY

Sample No.: AB22462 MS

Sample Matrix: Water
Units: mg/L

% Solids for Sample: NA

Analyte	Control Limit (%R)	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Added (SA)	%R	Q	M
Chloride	75-125	97.5		52.3	U	50	90		
TCN	75-125								
Phenols	75-125								
RCN	75-125								
RS	75-125								
Hex-Cr	75-125								

Comments: —

VERITECH **NJ STATE LAB ID: 14622**

INORGANIC SPIKE SAMPLE RECOVERY

Sample No.: AB22462 MSD

Sample Matrix: Water
Units: mg/L

% Solids for Sample: NA

Analyte	Control Limit (%R)	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Added (SA)	%R	Q	M
Chloride	75-125	98.4		52.3	U	50	92		
TCN	75-125								
Phenols	75-125								
RCN	75-125								
RS	75-125								
Hex-Cr	75-125								

Comments: __

Hampton-Clarke, Inc.
veritech laboratories

175 Route 46 West, Unit D
Fairfield, NJ 07004
(973) 244-9770
Federal ID: 222679402

Lawler, Metusky & Skelly Engineers

Format: NYDOH-CatA

Project: Harrison LF
PO Number:

Samples submitted on: 1/23/01

AB22949
AB22950
AB22951
AB22952

Environmental Chemistry Section

FEB 2 1 2001

Date: 2/9/01
HCl Project: 01231639

Amended 2/23/01

SDG Narrative

Project: NYSDOT Harrison LF
Job: 446-156

Hampton-Clarke, Inc. (HCI) received the following Lawler, Metusky & Skelly Engineers samples on January 23, 2001:

LMS #	HCI #	Type	Analysis
PC-3 unfiltered	AB22949	Aqueous	TAL-METALS (200.7), HG (245.1) CHLORIDE (EPA 325)
PC-3 filtered	AB22950	Aqueous	TAL-METALS (200.7), HG (245.1)
PC-4 unfiltered	AB22951	Aqueous	TAL-METALS (200.7), HG (245.1) CHLORIDE (EPA 325)
PC-4 filtered	AB22952	Aqueous	TAL-METALS (200.7), HG (245.1)

Following method 200.7, the ICP samples are concentrated during the digestion step from 100 ml to 50 ml. This concentration procedure is evident on the result page by the dilution factor of 0.5, which corrects the results for the concentration step.

Problems associated with these analyses are as follows:

Metals
For batch 3166 (Aqueous):

The serial dilution sample did not meet the QC criteria for Beryllium.

The MS fell outside the QC limit for Calcium and Iron with recoveries of 148 and 134%. The LCS and LCSD had recoveries that were within the QC limit indicating that the digestion was performed properly, and that the poor recovery for the two elements may be matrix related.

Wet Chemistry

There were no problems associated with this analysis.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or his designee, as verified by the following signature.

Stan Gilewicz, Laboratory Director

2/23/01
Date

Environmental Chemistry Section

FEB 26 2001

SDG Narrative

Project: Harrison LF
Job:

Hampton-Clarke, Inc. (HCI) received the following Lawler, Metusky & Skelly Engineers samples on January 23, 2001:

LMS #	HCI #	Type	Analysis
PC-3 unfiltered	AB22949	Aqueous	TAL-METALS (6010), CHLORIDE (EPA 325)
PC-3 filtered	AB22950	Aqueous	TAL-METALS (6010)
PC-4 unfiltered	AB22951	Aqueous	TAL-METALS (6010), CHLORIDE (EPA 325)
PC-4 filtered	AB22952	Aqueous	TAL-METALS (6010)

All metals sample results have been reported to the MDL, as requested by the client, to achieve the detection limits as listed in the ASP Standards. The Method blanks and continuing calibration blanks are based upon the PQL criteria.

Problems associated with these analyses are as follows:

Metals
For batch 3166 (Aqueous):

The serial dilution sample did not meet the QC criteria for Beryllium.

The MS fell outside the QC limit for Calcium and Iron with recoveries of 148 and 134%. The LCS and LCSD had recoveries that were within the QC limit indicating that the digestion was performed properly, and that the poor recovery for the two elements may be matrix related.

Wet Chemistry

There were no problems associated with this analysis.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or his designee, as verified by the following signature.

Stan Gilewicz, Laboratory Director

2/20/01
Date

Air Bill # 8196 2264 3507 01231631

Veritech, 175 Route 46 West, Fairfield, NJ 07004
A Division of HAMPTON-CLARKE, INC. NJDEPE # 14622

CHAIN OF CUSTODY RECORD

PHONE (800) 426-9992
FAX (973) 439-1458

CUSTOMER INFORMATION

CUSTOMER: LAWLER MATUSKY + Skelly
ADDRESS: ONE BLUE PLAZA
TELEPHONE: Poort River NY 10965
FAX: (845) 735-8300 845-783-7466
PROJECT: HARRISON LF 446-156
PROJECT MANAGER: T. SCHNEIDER
PROJECT LOCATION: Harrison landfill
STATE: New York
PO NUMBER:

REPORT INFORMATION

SEND REPORT TO: MARIA HEINCZ
SAME
SEND INVOICE TO: MARIA HEINCZ

PROJECT INFORMATION

TURNAROUND (CONFIRM RUSH TAT'S WITH LAB)
- ☑ STANDARD
- ☐ RUSH
  - ☐ 24 HOURS 100%
  - ☐ 48 HOURS 75%
  - ☐ 72 HOURS 50%
  - ☐ 1 WEEK 25%
  - ☐ 10 DAYS 10%

DELIVERABLES (PLEASE CHECK BOX)
- ☐ STANDARD
- ☐ FULL
- ☐ WASTE
- ☐ BUST
- ☐ NJ REDUCED
- ☐ EXCEL
- ☐ HAZSITE
- ☐ CUSTOM
- ☐ ELECTRONIC DELIVERABLE
- ☐ OTHER (SPECIFY)

ANALYTICAL REQUESTS

LAB SAMPLE NUMBER (LAB USE ONLY)	SAMPLE IDENTIFICATION	METHANOL BOTTLE #	DATE COLLECTED	TIME COLLECTED	SAMPLE TYPE: COMPOSITE (C)	SAMPLE TYPE: GRAB (G)	SAMPLE MATRIX	No. of Bottles: H_2SO_4	HNO_3	HCl	NaOH	Zinc + NaOH	Ascorbic	None	Methanol	Other	ANALYSIS
AB22949	PC-3		1/24/01	1420		✓	GW		1								TAL METALS - TOTAL
22950	↓		↓	↓		✓	↓							1			TAL METALS - Dissolved*
22949	↓		↓	↓		✓	↓							1			Chloride
22951	PC-4		1/24/01	1445		✓	GW		1								TAL METALS - TOTAL
22952	↓		↓	↓		✓	↓							1			TAL METALS - Dissolved*
22951	↓		↓	↓		✓	↓							1			Chloride
LAB	TEMP BLANK																—

SAMPLER CERTIFIES THAT EACH SAMPLE RECEIVED PROPER FIELD PRESERVATION (IF REQUIRED) (INITIALS)

SAMPLE HAZARDS : FLAMMABLE ☐ SKIN IRRITANT ☐ NON-HAZARD ☐ UNKNOWN ☑ NOXIOUS FUMES ☐

SPECIAL INSTRUCTIONS: * LAB to filter & preserve

TEMPERATURE UPON RECEIPT: 2.7 C

RELINQUISHED BY: T. Schneider	DATE / TIME 1/24/01	RECEIVED BY: FedEx	DATE / TIME
AGENT OF: Lawler Matusky +		AGENT OF:	
RELINQUISHED BY:	DATE / TIME	RECEIVED BY:	DATE / TIME 1/25/01 1000

CONDITION UPON RECEIPT FORM

Veritech

Date Received: 1/27/01 Filed By: FD

Client: Lawler Matusky + Skelly Project/Account: Harrison LF 446-1

Veritech Project #

YES	NO	INITIAL CONDITIONS	
☑	☐	[1]	Is there a corresponding Chain of Custody included with the samples?
☑	☐	[2]	Are the samples in a container such as a cooler or ice chest?
☐	☑	[3]	Are the custody seals intact? IF NO, please circle one of the following: missing broken (N.A.)
2.7 °C		[4]	Please specify the temperature inside the container.

YES	NO	SAMPLE INFORMATION	
☑	☐	[5]	Are the samples properly refrigerated (where required), have they arrived on ice?
☑	☐	[6]	Are the samples within holding times for the parameters listed on the COC? If NO, list parameters and associated samples:
☑	☐	[7]	Are all of the sample bottles intact? If NO, specify sample numbers below: broken: leaking:
☑	☐	[8]	Are all of the sample labels or numbers legible? If NO, specify:
☑	☐	[9]	Do the contents of the container match the COC? If NO, specify:
☑	☐	[10]	Is there enough sample sent for the analyses listed on the COC? If NO, specify:
☑	☐	[11]	Are the samples preserved correctly (see Preservation Form for actual pH readings)?
☐	☐	[12]	Are all soil VO(NJ) samples properly preserved in methanol with the correct soil weights (8g - 12g) and accompanied by dry soil?

OTHER

☐ ☐ [13] Specify:

CORRECTIVE ACTIONS

NO.	ACTION

CUR9.DOC

veritech laborato

PRESERVATION DOCUMENTATION

Date Received: 1/23/01

Client: JAwLer Matusky+Skelly

Veritech Project #:

Filed By: F.D

Project: Harrison IF 446

SAMPLE ID:	CONTAINER SIZE	CONTAINER TYPE (PG)	PARAMETER	PRESERVATIVE	p
PC3	1L	P	metals	HNO3	1
PC4	1L	P	metals	HNO3	1

INTERN[illegible]HAIN OF CUSTODY RECORD - REFRIGERATO[illegible]2 V[illegible]ech

Client ID: Lawler Matusky.

Location: EL

COMMENTS

		REMOVED:				RETURNED:			
TEST	SAMPLE No.	DATE	TIME	SIGNATURE	ALTERNATE	DATE	TIME	SIGNATURE	ALTERNATE
TO-[illegible]11-46	22949-52	1/24/01	1030	[signature]		1/24/01	1200	[signature]	
Cl	22949,51	1/25/01	1210	[signature]		1/25/01	1700	[signature]	

FOR LOGIN BATCH

AB22949-52

METHOD REFERENCES

***Test Methods for Evaluating Solid Waste*, SW-846, Third Edition**
Chloride: Method 9253.
Cyanide: Method 9010B/9014.
Dioxins/Furans: Method 8290.
Flashpoint: Method 1010.
Fingerprint (GC): Methods (3510C or 3550B)/8015 modified.
Hexavalent Chromium: Second and Third Editions, Methods 3060 and 7196A.
Ignitability: Method 1030.
Metals: Methods (3005A or 3050B)/6010B, (7470A or 7471A) (Hg).
PCB's: Methods (3510C or 3550B)/8082.
PCB's (Oils): Methods 3580A/8082.
Pesticides: Methods (3510C or 3550B)/8081A.
pH (Soils): Method 9045C.
Phenolics (Soils): Method 9065.
Reactive Cyanide/Sulfide: Chapter Seven, Section 7.3, Reactivity.
Semivolatile Organics: Methods (3510C or 3550B)/8270C.
Sulfide: Method 9030B/9034.
TCLP: Extraction: Method 1311.
TCLP Volatile Organics: Method 8260B.
TCLP Semivolatile Organics: Methods 3510C/8270C.
TCLP Pesticides: Methods 3510C/8081A.
TCLP Herbicides: Method 8151A.
TCLP Metals: Methods 3005A/6010B and 7470A.
TPH: Method 9071A (extraction only)/418.1.
TPH Extractables: Methods (3510C or 3550B)/8015 modified.
Volatile Organics: Method 8260B.
Total Organic Carbon: 9060

***Federal Register*, 40 CFR Part 136**
Volatile Organics: Method 624.
Semivolatile Organics: Method 625.
Pesticides/PCB's: Method 608.

***Methods for the Determination of Organic Compounds in Drinking Water*, EPA/600/4-88/039**

Volatile Organics: Method 524.2, Revision 4, 1995.

***Standard Methods for the Examination of Water and Wastewater*, 18th Edition, 1992**
Cyanide (Free):, Method 4500-CN-I.
Hexavalent Chromium: Method 3500-Cr D.
Salinity: Method 2520-B.
Solids, Total, Fixed, & Volatile: Method 2540-G.

***Methods for the Determination of Metals in Environmental Samples*, EPA/600/4-91/010, June 1991**
ICP Metals: Method 200.7, Revision 3.3.
GFAA Metals: Method 200.9.

***Methods for the Chemical Analysis of Water and Wastes*, EPA-600/4-79-020, March 1983**
Cyanide & Amenable Cyanide: Method 335.2/335.1.
Phenols: Method 420.1.
Mercury: Method 245.1.
pH Hydrogen Ion: Method 150.1/150.2.
Temperature, Deg. C: 170.1.
TPH (Soils & Waters): Method 418.1 (analysis 418.1 for Soils).
Specific Conductance: Method 120.1.
Residue, Filterable (TDS): Method 160.1.
Residue, Non-Filterable (TSS): Method 160.2.
Residue, Total: Method 160.3.
Residue, Volatile: Method 160.4.
Chloride: Method 325.3.
Sulfide (Waters): Method 376.1.
Oil & Grease (Total Recoverable): Method 413.1.
Oil & Grease: Method 1664.
Acidity (as CaCO3): Method 305.1.
Alkalinity (as CaCO3): Method 310.1.
Ammonia: Method 350.2
Total Organic Carbon: 415.1

***American Society for Testing & Materials (ASTM)*, June 1991**
TOX (Waters & Soils): Method D2361-91.

Hach Chemical Company Handbook
Chemical Oxygen Demand (Waters): Method 8000.

INORGANIC ANALYSIS DATA SHEET

Lab Name: Veritech

Data File Name: W3169B

Lab Code: 14622

Analysis Date: 02/02/2001

Matrix: Water

Lab Sample ID: AB22949
Client ID: PC-3 unfiltered

Level: low/med
Batch: 3166

Dilution: 0.5
% Solid: 0

Concentration Units: ug/L

Cas No.	Analyte	MDL	Concentration	M
7429905	Aluminum	28	31000	P
7440360	Antimony	1.1	U	P
7440382	Arsenic	3.5	U	P
7440393	Barium	8.7	400	P
7440417	Beryllium	1.1	U	P
7440702	Calcium	350	61000	P
7440473	Chromium	5.7	74	P
7440484	Cobalt	1.7	40	P
7440508	Copper	5.9	81	P
7439896	Iron	33	49000	P
7439954	Magnesium	40	29000	P
7439965	Manganese	2.6	1600	P
7440020	Nickel	3.3	86	P
7782492	Selenium	4.3	U	P
7440224	Silver	2.8	U	P
7440280	Thallium	3.0	U	P
7440622	Vanadium	1.7	110	P
7440666	Zinc	6.9	130	P

U - Indicates compound not found above detection/reporting limit
* - Indicates compound above calibration range
P - Indicates analyzed by ICP(OPTIMA 3000DV)
CV - Indicates analyzed by Cold Vapor

Comments: _____

INORGANIC ANALYSIS DATA SHEET

Lab Name: Veritech

Data File Name: A3166F

Lab Code: 14622

Analysis Date: 02/02/2001

Matrix: Water

Lab Sample ID: AB22949
Client ID: PC-3 unfiltered

Level: low/med
Batch: 3166

Dilution: 0.5
% Solid: 0

Concentration Units: ug/L

Cas No.	Analyte	MDL	Concentration	M
7440439	Cadmium	1.3	U	P
7439921	Lead	2.0	16	P

U - Indicates compound not found above detection/reporting limit
* - Indicates compound above calibration range
P - Indicates analyzed by ICP(OPTIMA 3000DV)
CV - Indicates analyzed by Cold Vapor

Comments:_____

INORGANIC ANALYSIS DATA SHEET

Lab Name: Veritech

Data File Name: A3166Z

Lab Code: 14622

Analysis Date: 1/29/01

Matrix: Water

Lab Sample ID: AB22949
Client ID: PC-3 unfiltered

Level: low/med
Batch: 3166

Dilution: 0.5
% Solid: 0

Concentration Units: ug/L

Cas No.	Analyte	MDL	Concentration	M
7440235	Sodium	67	95000	P

U - Indicates compound not found above detection/reporting limit
* - Indicates compound above calibration range
P - Indicates analyzed by ICP(ARL 3560)
CV - Indicates analyzed by Cold Vapor

Comments: _____

DLF 2/16/

INORGANIC ANALYSIS DATA SHEET

Lab Name: Veritech

Data File Name: A3166Y

Lab Code: 14622

Analysis Date: 1/30/01

Matrix: Water

Lab Sample ID: AB22949
Client ID: PC-3 unfiltered

Level: low/med

Dilution: 0.5

Batch: 3166

% Solid: 0

Concentration Units: ug/L

Cas No.	Analyte	MDL	Concentration	M
7440097	Potassium	36	9800	P

U - Indicates compound not found above detection/reporting limit
* - Indicates compound above calibration range
P - Indicates analyzed by ICP(ARL 3560)
CV - Indicates analyzed by Cold Vapor

Comments:_____

INORGANIC ANALYSIS DATA SHEET

Lab Name: Veritech

Lab Code: 14622

Matrix: Water

Level: low/med
Batch: 3166

Data File Name: H3166A

Analysis Date: 01/25/2001

Lab Sample ID: AB22949
Client ID: PC-3 unfiltered
Dilution: 1
% Solid: 0

Concentration Units: Ug/L

Cas No.	Analyte	MDL	Concentration	M
7439976	Mercury	0.21	U	CV

U - Indicates compound not found above detection/reporting limit
* - Indicates compound above calibration range
P - Indicates analyzed by ICP(OPTIMA 3000DV)
CV - Indicates analyzed by Cold Vapor

Comments: _____

INORGANIC ANALYSIS DATA SHEET

Lab Name: Veritech

Data File Name: A3166F

Lab Code: 14622

Analysis Date: 02/02/2001

Matrix: Water

Lab Sample ID: AB22950
Client ID: PC-3 filtered

Level: low/med
Batch: 3166

Dilution: 0.5
% Solid: 0

Concentration Units: ug/L

Cas No.	Analyte	MDL	Concentration	M
7440439	Cadmium	1.3	U	P
7439921	Lead	2.0	U	P

U - Indicates compound not found above detection/reporting limit
* - Indicates compound above calibration range
P - Indicates analyzed by ICP(OPTIMA 3000DV)
CV - Indicates analyzed by Cold Vapor

Comments: _____

INORGANIC ANALYSIS DATA SHEET

Lab Name: Veritech

Data File Name: A3166Z

Lab Code: 14622

Analysis Date: 1/29/01

Matrix: Water

Lab Sample ID: AB22950
Client ID: PC-3 filtered

Level: low/med
Batch: 3166

Dilution: 0.5
% Solid: 0

Concentration Units: ug/L

Cas No.	Analyte	MDL	Concentration	M
7440235	Sodium	67	99000	P

U - Indicates compound not found above detection/reporting limit
* - Indicates compound above calibration range
P - Indicates analyzed by ICP(ARL 3560)
CV - Indicates analyzed by Cold Vapor

Comments:_____

INORGANIC ANALYSIS DATA SHEET

Lab Name: Veritech

Data File Name: A3166Y

Lab Code: 14622

Analysis Date: 1/30/01

Matrix: Water

Lab Sample ID: AB22950
Client ID: PC-3 filtered

Level: low/med
Batch: 3166

Dilution: 0.5
% Solid: 0

Concentration Units: ug/L

Cas No.	Analyte	MDL	Concentration	M
7440097	Potassium	36	5600	P

U - Indicates compound not found above detection/reporting limit
* - Indicates compound above calibration range
P - Indicates analyzed by ICP(ARL 3560)
CV - Indicates analyzed by Cold Vapor

Comments:_____

INORGANIC ANALYSIS DATA SHEET

Lab Name: Veritech
Data File Name: H3166A

Lab Code: 14622
Analysis Date: 01/25/2001

Matrix: Water
Lab Sample ID: AB22950
Client ID: PC-3 filtered

Level: low/med
Dilution: 1

Batch: 3166
% Solid: 0

Concentration Units: Ug/L

Cas No.	Analyte	MDL	Concentration	M
7439976	Mercury	0.21	U	CV

U - Indicates compound not found above detection/reporting limit
* - Indicates compound above calibration range
P - Indicates analyzed by ICP(OPTIMA 3000DV)
CV - Indicates analyzed by Cold Vapor

Comments: _____

INORGANIC ANALYSIS DATA SHEET

Lab Name: Veritech

Data File Name: W3169B

Lab Code: 14622

Analysis Date: 02/02/2001

Matrix: Water

Lab Sample ID: AB22951
Client ID: PC-4 unfiltered

Level: low/med
Batch: 3166

Dilution: 0.5
% Solid: 0

Concentration Units: ug/L

Cas No.	Analyte	MDL	Concentration	M
7429905	Aluminum	28	19000	P
7440360	Antimony	1.1	U	P
7440382	Arsenic	3.5	U	P
7440393	Barium	8.7	260	P
7440417	Beryllium	1.1	U	P
7440702	Calcium	350	25000	P
7440473	Chromium	5.7	82	P
7440484	Cobalt	1.7	14	P
7440508	Copper	5.9	40	P
7439896	Iron	33	28000	P
7439954	Magnesium	40	17000	P
7439965	Manganese	2.6	280	P
7440020	Nickel	3.3	71	P
7782492	Selenium	4.3	U	P
7440224	Silver	2.8	U	P
7440280	Thallium	3.0	U	P
7440622	Vanadium	1.7	61	P
7440666	Zinc	6.9	94	P

U - Indicates compound not found above detection/reporting limit
* - Indicates compound above calibration range
P - Indicates analyzed by ICP(OPTIMA 3000DV)
CV - Indicates analyzed by Cold Vapor

Comments:_____

INORGANIC ANALYSIS DATA SHEET

Lab Name: Veritech

Data File Name: A3166F

Lab Code: 14622

Analysis Date: 02/02/2001

Matrix: Water

Lab Sample ID: AB22951
Client ID: PC-4 unfiltered

Level: low/med
Batch: 3166

Dilution: 0.5
% Solid: 0

Concentration Units: ug/L

Cas No.	Analyte	MDL	Concentration	M
7440439	Cadmium	1.3	U	P
7439921	Lead	2.0	20	P

U - Indicates compound not found above detection/reporting limit
* - Indicates compound above calibration range
P - Indicates analyzed by ICP(OPTIMA 3000DV)
CV - Indicates analyzed by Cold Vapor

Comments: _____

DLV 2/1

INORGANIC ANALYSIS DATA SHEET

Lab Name: Veritech

Lab Code: 14622

Matrix: Water

Level: low/med

Batch: 3166

Data File Name: A3166Z

Analysis Date: 1/29/01

Lab Sample ID: AB22951

Client ID: PC-4 unfiltered

Dilution: 0.5

% Solid: 0

Concentration Units: ug/L

Cas No.	Analyte	MDL	Concentration	M
7440235	Sodium	67	38000	P

U - Indicates compound not found above detection/reporting limit
* - Indicates compound above calibration range
P - Indicates analyzed by ICP(ARL 3560)
CV - Indicates analyzed by Cold Vapor

Comments: _____

INORGANIC ANALYSIS DATA SHEET

Lab Name: Veritech

Data File Name: A3166Y

Lab Code: 14622

Analysis Date: 1/30/01

Matrix: Water

Lab Sample ID: AB22951

Client ID: PC-4 unfiltered

Level: low/med

Dilution: 0.5

Batch: 3166

% Solid: 0

Concentration Units: ug/L

Cas No.	Analyte	MDL	Concentration	M
7440097	Potassium	36	7400	P

U - Indicates compound not found above detection/reporting limit
* - Indicates compound above calibration range
P - Indicates analyzed by ICP(ARL 3560)
CV - Indicates analyzed by Cold Vapor

Comments:_____

INORGANIC ANALYSIS DATA SHEET

Lab Name: Veritech
Data File Name: H3166A

Lab Code: 14622
Analysis Date: 01/25/2001

Matrix: Water
Lab Sample ID: AB22951
Client ID: PC-4 unfiltered

Level: low/med
Dilution: 1

Batch: 3166
% Solid: 0

Concentration Units: Ug/L

Cas No.	Analyte	MDL	Concentration	M
7439976	Mercury	0.21	0.50	CV

U - Indicates compound not found above detection/reporting limit
* - Indicates compound above calibration range
P - Indicates analyzed by ICP(OPTIMA 3000DV)
CV - Indicates analyzed by Cold Vapor

Comments: _____

INORGANIC ANALYSIS DATA SHEET

Lab Name: Veritech

Data File Name: W3169B

Lab Code: 14622

Analysis Date: 02/02/2001

Matrix: Water

Lab Sample ID: AB22952
Client ID: PC-4 filtered

Level: low/med
Batch: 3166

Dilution: 0.5
% Solid: 0

Concentration Units: ug/L

Cas No.	Analyte	MDL	Concentration	M
7429905	Aluminum	28	U	P
7440360	Antimony	1.1	U	P
7440382	Arsenic	3.5	U	P
7440393	Barium	8.7	71	P
7440417	Beryllium	1.1	U	P
7440702	Calcium	350	24000	P
7440473	Chromium	5.7	U	P
7440484	Cobalt	1.7	U	P
7440508	Copper	5.9	U	P
7439896	Iron	33	U	P
7439954	Magnesium	40	8500	P
7439965	Manganese	2.6	27	P
7440020	Nickel	3.3	6.6	P
7782492	Selenium	4.3	U	P
7440224	Silver	2.8	U	P
7440280	Thallium	3.0	U	P
7440622	Vanadium	1.7	U	P
7440666	Zinc	6.9	U	P

U - Indicates compound not found above detection/reporting limit
* - Indicates compound abcve calibration range
P - Indicates analyzed by ICP(OPTIMA 3000DV)
CV - Indicates analyzed by Cold Vapor

Comments:_____

INORGANIC ANALYSIS DATA SHEET

Lab Name: Veritech

Lab Code: 14622

Matrix: Water

Level: low/med

Batch: 3166

Data File Name: A3166F

Analysis Date: 02/02/2001

Lab Sample ID: AB22952

Client ID: PC-4 filtered

Dilution: 0.5

% Solid: 0

Concentration Units: ug/L

Cas No.	Analyte	MDL	Concentration	M
7440439	Cadmium	1.3	U	P
7439921	Lead	2.0	U	P

U - Indicates compound not found above detection/reporting limit
* - Indicates compound above calibration range
P - Indicates analyzed by ICP(OPTIMA 3000DV)
CV - Indicates analyzed by Cold Vapor

Comments: _____

2/16

INORGANIC ANALYSIS DATA SHEET

Lab Name: Veritech

Data File Name: A3166Z

Lab Code: 14622

Analysis Date: 1/29/01

Matrix: Water

Lab Sample ID: AB22952
Client ID: PC-4 filtered

Level: low/med
Batch: 3166

Dilution: 0.5
% Solid: 0

Concentration Units: ug/L

Cas No.	Analyte	MDL	Concentration	M
7440235	Sodium	67	41000	P

U - Indicates compound not found above detection/reporting limit
* - Indicates compound above calibration range
P - Indicates analyzed by ICP(ARL 3560)
CV - Indicates analyzed by Cold Vapor

Comments: _____

INORGANIC ANALYSIS DATA SHEET

Lab Name: Veritech

Lab Code: 14622

Matrix: Water

Level: low/med

Batch: 3166

Data File Name: A3166Y

Analysis Date: 1/30/01

Lab Sample ID: AB22952

Client ID: PC-4 filtered

Dilution: 0.5

% Solid: 0

Concentration Units: ug/L

Cas No.	Analyte	MDL	Concentration	M
7440097	Potassium	36	4000	P

U - Indicates compound not found above detection/reporting limit
* - Indicates compound above calibration range
P - Indicates analyzed by ICP(ARL 3560)
CV - Indicates analyzed by Cold Vapor

Comments: _____

INORGANIC ANALYSIS DATA SHEET

Lab Name: Veritech
Data File Name: H3166A

Lab Code: 14622
Analysis Date: 01/25/2001

Matrix: Water
Lab Sample ID: AB22952
Client ID: PC-4 filtered

Level: low/med
Dilution: 1

Batch: 3166
% Solid: 0

Concentration Units: Ug/L

Cas No.	Analyte	MDL	Concentration	M
7439976	Mercury	0.21	U	CV

U - Indicates compound not found above detection/reporting limit
* - Indicates compound above calibration range
P - Indicates analyzed by ICP(OPTIMA 3000DV)
CV - Indicates analyzed by Cold Vapor

Comments: _____

Veritech Wet Chem Form 1 Summary

Lab #: AB22949

Lab #: AB22949 | Sample Matrix: Aqueous

Sample ID: PC-3 unfiltered | Date Received: 1/23/01

Test Group Name: Chloride EPA 325 | Date Prepared:

Analyte	Concentration	Units	MDL/PQL	DF	Date Analyzed
Chloride	170	mg/l	1.8	1	1/25/01

Lab #: AB22951 | Sample Matrix: Aqueous

Sample ID: PC-4 unfiltered | Date Received: 1/23/01

Test Group Name: Chloride EPA 325 | Date Prepared:

Analyte	Concentration	Units	MDL/PQL	DF	Date Analyzed
Chloride	64	mg/l	1.8	1	1/25/01

BLANKS

Lab Name: Veritech Data File Name: W3169B

Lab Code: 14622 Analysis Date: 02/01/2001

Batch: 3166

All Concentration Units in PPM except Mercury in PPB

Analyte	ICB M-01-BL	CCB	CCB	CCB	CCB	CCB	CCB		M
Aluminum	0.1160000 U	0.1160000 U	0.1160000 U	0.1160000 U	0.1160000 U	0.1160000 U	0.1160000 U		P
Antimony	0.0065100 U	0.0065100 U	0.0065100 U	0.0065100 U	0.0065100 U	0.0065100 U	0.0065100 U		P
Arsenic	0.0072300 U	0.0072300 U	0.0072300 U	0.0072300 U	0.0072300 U	0.0072300 U	0.0072300 U		P
Barium	0.0456000 U	0.0456000 U	0.0456000 U	0.0456000 U	0.0456000 U	0.0456000 U	0.0456000 U		P
Beryllium	0.0049200 U	0.0049200 U	0.0049200 U	0.0049200 U	0.0049200 U	0.0049200 U	0.0049200 U		P
Calcium	0.7580000 U	0.7580000 U	0.7580000 U	0.7580000 U	0.7580000 U	0.7580000 U	0.7580000 U		P
Chromium	0.0315000 U	0.0315000 U	0.0315000 U	0.0315000 U	0.0315000 U	0.0315000 U	0.0315000 U		P
Cobalt	0.0092100 U	0.0092100 U	0.0092100 U	0.0092100 U	0.0092100 U	0.0092100 U	0.0092100 U		P
Copper	0.0398000 U	0.0398000 U	0.0398000 U	0.0398000 U	0.0398000 U	0.0398000 U	0.0398000 U		P
Iron	0.1760000 U	0.1760000 U	0.1760000 U	0.1760000 U	0.1760000 U	0.1760000 U	0.1760000 U		P
Magnesium	0.5150000 U	0.5150000 U	0.5150000 U	0.5150000 U	0.5150000 U	0.5150000 U	0.5150000 U		P
Manganese	0.0235000 U	0.0235000 U	0.0235000 U	0.0235000 U	0.0235000 U	0.0235000 U	0.0235000 U		P
Nickel	0.0302000 U	0.0302000 U	0.0302000 U	0.0302000 U	0.0302000 U	0.0302000 U	0.0302000 U		P
Selenium	0.0393000 U	0.0393000 U	0.0393000 U	0.0393000 U	0.0393000 U	0.0393000 U	0.0393000 U		P
Silver	0.0103000 U	0.0103000 U	0.0103000 U	0.0103000 U	0.0103000 U	0.0103000 U	0.0103000 U		P
Thallium	0.0062400 U	0.0062400 U	0.0062400 U	0.0062400 U	0.0062400 U	0.0062400 U	0.0062400 U		P
Vanadium	0.0085400 U	0.0085400 U	0.0085400 U	0.0085400 U	0.0085400 U	0.0085400 U	0.0085400 U		P
Zinc	0.0401000 U	0.0401000 U	0.0401000 U	0.0401000 U	0.0401000 U	0.0401000 U	0.0401000 U		P

BLANKS

Lab Name: Veritech Data File Name: A3166E

Lab Code: 14622 Analysis Date: 02/01/2001

Batch: 3166

All Concentration Units in PPM except Mercury in PPB

Analyte	MB 3166(.5)	ICB M-01-BL	CCB	CCB	CCB				M
Aluminum	0.0580000 U	0.1160000 U	0.1160000 U	0.1160000 U	0.1160000 U				P
Antimony	0.0032550 U	0.0065100 U	0.0065100 U	0.0065100 U	0.0065100 U				P
Arsenic	0.0036150 U	0.0072300 U	0.0072300 U	0.0072300 U	0.0072300 U				P
Barium	0.0228000 U	0.0456000 U	0.0456000 U	0.0456000 U	0.0456000 U				P
Beryllium	0.0024600 U	0.0049200 U	0.0049200 U	0.0049200 U	0.0049200 U				P
Cadmium	0.0014000 U	0.0028000 U	0.0028000 U	0.0028000 U	0.0028000 U				P
Calcium	0.3790000 U	0.7580000 U	0.7580000 U	0.7580000 U	0.7580000 U				P
Chromium	0.0157500 U	0.0315000 U	0.0315000 U	0.0315000 U	0.0315000 U				P
Cobalt	0.0046050 U	0.0092100 U	0.0092100 U	0.0092100 U	0.0092100 U				P
Copper	0.0199000 U	0.0398000 U	0.0398000 U	0.0398000 U	0.0398000 U				P
Iron	0.0880000 U	0.1760000 U	0.1760000 U	0.1760000 U	0.1760000 U				P
Lead	0.0034350 U	0.0068700 U	0.0068700 U	0.0068700 U	0.0068700 U				P
Magnesium	0.2575000 U	0.5150000 U	0.5150000 U	0.5150000 U	0.5150000 U				P
Manganese	0.0117500 U	0.0235000 U	0.0235000 U	0.0235000 U	0.0235000 U				P
Nickel	0.0151000 U	0.0302000 U	0.0302000 U	0.0302000 U	0.0302000 U				P
Selenium	0.0196500 U	0.0393000 U	0.0393000 U	0.0393000 U	0.0393000 U				P
Silver	0.0051500 U	0.0103000 U	0.0103000 U	0.0103000 U	0.0103000 U				P
Thallium	0.0031200 U	0.0062400 U	0.0062400 U	0.0062400 U	0.0062400 U				P
Vanadium	0.0042700 U	0.0085400 U	0.0085400 U	0.0085400 U	0.0085400 U				P
Zinc	0.0200500 U	0.0401000 U	0.0401000 U	0.0401000 U	0.0401000 U				P

BLANKS

Lab Name: Veritech Data File Name: A3166F

Lab Code: 14622 Analysis Date: 02/02/2001

Batch: 3166

All Concentration Units in PPM except Mercury in PPB

Analyte	ICB M-01-BL	CCB						M
Cadmium	0.0028000 U	0.0028000 U						P
Lead	0.0068700 U	0.0068700 U						P

BLANKS

Lab Name: Veritech Data File Name: A3166Z

Lab Code: 14622 Analysis Date: 1/29/01

Batch: 3166

All Concentration Units in PPM except Mercury in PPB

Analyte	MB 3166(.5)	ICB M-00-BL	CCB	CCB					M
Sodium	0.1305000 U	0.2610000 U	0.2610000 U	0.2610000 U					P

BLANKS

Lab Name: Veritech Data File Name: A3166Y

Lab Code: 14622 Analysis Date: 1/30/01

Batch: 3166

All Concentration Units in PPM except Mercury in PPB

Analyte	MB 3166(.5)	ICB M-00-RL	CCB	CCB					M
Potassium	0.0530000 U	0.1060000 U	0.1060000 U	0.1060000 U					P

BLANKS

Lab Name: Veritech

Data File Name: A3166X

Lab Code: 14622

Analysis Date: 2/ 1/01

Batch: 3166

All Concentration Units in PPM except Mercury in PPB

Analyte	ICB M-00-BL	CCB							M
Potassium	0.1060000 U	0.1060000 U							P

BLANKS

Lab Name: Veritech

Data File Name: H3166A

Lab Code: 14622

Analysis Date: 01/25/2001

Batch: 3166

All Concentration Units in PPM except Mercury in PPB

Analyte	MB 3166	ICB	CCB	CCB					M
Mercury	0.2100000 U	0.2100000 U	0.2100000 U	0.2100000 U					C

Spike Sample Recovery

Lab Name: Veritech

Data File Name: A3166E

Lab Code: 14622

Analysis Date: 02/01/2001

ICP sample ID: 22810

Batch: 3166

All Concentration Units in PPM except Mercury in PPB

Analyte	Amt Added	QC Limits	22810 Non Spike	22810 MS 1 Matrix Spike 1	22810 MS 2 Matrix Spike 2	Rec1	Rec2	M
Aluminum	5.000	70 - 130	0.1160000 U	4.5397883	4.4821658	91	90	P
Antimony	0.5000	70 - 130	0.0065100 U	0.4444847	0.4463216	89	89	P
Arsenic	0.5000	70 - 130	0.0214173	0.4643908	0.4617650	89	88	P
Barium	0.5000	70 - 130	0.2697346	0.7628041	0.7204399	99	90	P
Beryllium	0.5000	70 - 130	0.0049200 U	0.4562013	0.4541739	91	91	P
Cadmium	0.5000	70 - 130	0.0028000 U	0.4279864	0.4286254	86	86	P
Calcium	50.000	70 - 130	150.3888240	224.2681440	202.5761900	148*	104	P
Chromium	0.5000	70 - 130	0.0315000 U	0.4341152	0.4317454	87	86	P
Cobalt	0.5000	70 - 130	0.0092100 U	0.4499644	0.4497074	90	90	P
Copper	0.5000	70 - 130	0.0398000 U	0.4328487	0.4309005	87	86	P
Iron	5.000	70 - 130	11.4144206	18.0958204	16.3276626	134*	98	P
Lead	0.5000	70 - 130	0.0068700 U	0.4392594	0.4397142	88	88	P
Magnesium	50.000	70 - 130	54.4910719	108.8400700	100.5317900	109	92	P
Manganese	0.5000	70 - 130	0.9809656	1.6040865	1.4588759	125	96	P
Nickel	0.5000	70 - 130	0.0302000 U	0.4346247	0.4358640	87	87	P
Selenium	0.5000	70 - 130	0.0393000 U	0.4417303	0.4443503	88	89	P
Silver	0.5000	70 - 130	0.0103000 U	0.4277063	0.4314390	86	86	P
Thallium	0.5000	70 - 130	0.0062400 U	0.4201763	0.4202284	84	84	P
Vanadium	0.5000	70 - 130	0.0105400	0.4444979	0.4417593	87	86	P
Zinc	0.5000	70 - 130	0.0401000 U	0.4448151	0.4496414	89	90	P

* - Indicates the analyte failed the control limit criteria
U - Indicates the analyte was not detected

Spike Sample Recovery

Lab Name: Veritech Data File Name: A3166Z

Lab Code: 14622 Analysis Date: 1/29/01

ICP sample ID: 22810 Batch: 3166

All Concentration Units in PPM except Mercury in PPB

Analyte	Amt Added	QC Limits	22810 Non Spike	22810 MS 1 Matrix Spike 1	22810 MS 2 Matrix Spike 2	Rec1	Rec2		M
Sodium	50.000	70 - 130	55.0550000	113.4080000	104.6750000	117	99		P

* - Indicates the analyte failed the control limit criteria
U - Indicates the analyte was not detected

Spike Sample Recovery

Lab Name: Veritech Data File Name: A3166Y-X

Lab Code: 14622 Analysis Date: 1/30/01-2/1/01

ICP sample ID: 22810 Batch: 3166

All Concentration Units in PPM except Mercury in PPB

Analyte	Amt Added	QC Limits	22810 Non Spike	22810 MS 1 Matrix Spike 1	22810 MS 2 Matrix Spike 2	Rec1	Rec2		M
Potassium	50.000	70 - 130	8.8380000	55.7320000	54.0790000	94	90		P

* - Indicates the analyte failed the control limit criteria
U - Indicates the analyte was not detected

Spike Sample Recovery

Lab Name: Veritech

Data File Name: H3166A

Lab Code: 14622

Analysis Date: 01/25/2001

ICP sample ID: 22731

Batch: 3166

All Concentration Units in PPM except Mercury in PPB

Analyte	Amt Added	QC Limits	22731 Non Spike	22731 MS 1 Matrix Spike 1	22731 MS 2 Matrix Spike 2	Rec1	Rec2		M
Mercury	10.000	70 - 130	0.0239517	10.0918984	10.0866322	101	101		C

* - Indicates the analyte failed the control limit criteria

U - Indicates the analyte was not detected

Laboratory Control Sample

Lab Name: Veritech

Data File Name: A3166E

Lab Code: 14622

Analysis Date: 02/01/2001

ICP sample ID: LCSW

Batch: 3166

All Concentration Units in PPM except Mercury in PPB

Analyte	Spike Amount	QC Limits	Found	Rec	M
Aluminum	5.000	85-115	5.6070841	112	P
Antimony	0.5000	85-115	0.5033097	101	P
Arsenic	0.5000	85-115	0.4860014	97	P
Barium	0.5000	85-115	0.5014502	100	P
Beryllium	0.5000	85-115	0.4962095	99	P
Cadmium	0.5000	85-115	0.4974444	99	P
Calcium	50.000	85-115	51.4809752	103	P
Chromium	0.5000	85-115	0.4980209	100	P
Cobalt	0.5000	85-115	0.5105767	102	P
Copper	0.5000	85-115	0.5031681	101	P
Iron	5.000	85-115	5.0799377	102	P
Lead	0.5000	85-115	0.5075555	102	P
Magnesium	50.000	85-115	50.3707192	101	P
Manganese	0.5000	85-115	0.5439928	109	P
Nickel	0.5000	85-115	0.4997384	100	P
Selenium	0.5000	85-115	0.4944752	99	P
Silver	0.5000	85-115	0.4961085	99	P
Thallium	0.5000	85-115	0.5014861	100	P
Vanadium	0.5000	85-115	0.4883856	98	P
Zinc	0.5000	85-115	0.5038060	101	P

* - Indicates the analyte failed the control limit criteria
U - Indicates the analyte was not detected

Laboratory Control Sample

Lab Name: Veritech

Data File Name: A3166Z

Lab Code: 14622

Analysis Date: 1/29/01

ICP sample ID: LCSW

Batch: 3166

All Concentration Units in PPM except Mercury in PPB

Analyte	Spike Amount	QC Limits	Found	Rec		
Sodium	50.000	85-115	49.8670000	100		P

* - Indicates the analyte failed the control limit criteria
U - Indicates the analyte was not detected

Laboratory Control Sample

Lab Name: Veritech Data File Name: A3166Y

Lab Code: 14622 Analysis Date: 1/30/01

ICP sample ID: LCSW Batch: 3166

All Concentration Units in PPM except Mercury in PPB

Analyte	Spike Amount	QC Limits	Found	Rec		
Potassium	50.000	85-115	48.9300000	98		P

* - Indicates the analyte failed the control limit criteria
U - Indicates the analyte was not detected

Laboratory Control Sample

Lab Name: Veritech

Data File Name: H3166A

Lab Code: 14622

Analysis Date: 01/25/2001

ICP sample ID: LCSW

Batch: 3166

All Concentration Units in PPM except Mercury in PPB

Analyte	Spike Amount	QC Limits	Found	Rec	M
Mercury	10.000	85-115	10.0488402	100	C

* - Indicates the analyte failed the control limit criteria
U - Indicates the analyte was not detected

INORGANIC METHOD BLANK SUMMARY

Blank Matrix: Water
Units: mg/L

Analyte	Practical Quant Limit	Batch Number	Method Blank Result
Chloride	1.0	080w	ND

VERITECH

NJ STATE LAB ID: 14622

INORGANIC SPIKE SAMPLE RECOVERY

Sample No.: AB22462 MS

Sample Matrix: Water
Units: mg/L

% Solids for Sample: NA

Analyte	Control Limit (%R)	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Added (SA)	%R	Q	M
Chloride	75-125	97.5		52.3		50	90		
TCN	75-125								
Phenols	75-125								
RCN	75-125								
RS	75-125								
Hex-Cr	75-125								

Comments: __

FORM V (Part 1) - IN

VERITECH NJ STATE LAB ID: 14622

INORGANIC SPIKE SAMPLE RECOVERY

Sample No.: AB22462 MSD

Sample Matrix: Water
Units: mg/L

% Solids for Sample: NA

Analyte	Control Limit (%R)	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Added (SA)	%R	Q	M
Chloride	75-125	98.4		52.3		50	92		
TCN	75-125								
Phenols	75-125								
RCN	75-125								
RS	75-125								
Hex-Cr	75-125								

Comments: __

Hampton-Clarke, Inc.
veritech laboratories

175 Route 46 West, Unit D
Fairfield, NJ 07004
(973) 244-9770
Federal ID: 222679402

Lawler, Metusky & Skelly Engineers

Format: NYDOH-CatA

Project: Harrison LF
PO Number:

Samples submitted on: 1/24/01

AB23032
AB23033
AB23034
AB23035
AB23036
AB23037
AB23038
AB23039
AB23040
AB23041
AB23042
AB23043

Environmental Chemistry Section

FEB 2 6 2001

Date: 2/15/01
HCI Project: 01251613

SDG Narrative

Project: NYSDOT Harrison LF
Job: 446-156

Hampton-Clarke, Inc. (HCI) received the following Lawler, Metusky & Skelly Engineers samples on January 24, 2001:

LMS #	HCI #	Type	Analysis
PC-2 unfiltered	AB23032	Aqueous	TAL-METALS (6010B), HG (7470A), CHLORIDE (EPA 325)
PC-2 filtered	AB23033	Aqueous	TAL-METALS (6010B), HG (7470A)
MW-4 unfiltered	AB23034	Aqueous	TAL-METALS (6010B), HG (7470A), CHLORIDE (EPA 325)
MW-4 filtered	AB23035	Aqueous	TAL-METALS (6010B), HG (7470A)
SW-2 unfiltered	AB23036	Aqueous	TAL-METALS (6010B), HG (7470A), CHLORIDE (EPA 325)
SW-2 filtered	AB23037	Aqueous	TAL-METALS (6010B), HG (7470A)
SD-2	AB23038	Soil	TAL-METALS (6010B), HG (7471A), CHLORIDE (EPA 325)
SW-4 unfiltered	AB23039	Aqueous	TAL-METALS (6010B), HG (7470A), CHLORIDE (EPA 325)
SW-4 filtered	AB23040	Aqueous	TAL-METALS (6010B), HG (7470A)
SD-4	AB23041	Soil	TAL-METALS (6010B), HG (7471A), CHLORIDE (EPA 325)
SW-5 unfiltered	AB23042	Aqueous	TAL-METALS (6010B), HG (7470A), CHLORIDE (EPA 325)
SW-5 filtered	AB23043	Aqueous	TAL-METALS (6010B), HG (7470A)

All metals sample results have been reported to the MDL, as requested by the client, to achieve the detection limits as listed in the ASP Standards. The Method blanks and continuing calibration blanks are based upon the PQL criteria.

Problems associated with these analyses are as follows:

Metals
For batch 3171 (Soil):

The MS and MSD fell outside the QC limit for the following elements:

Antimony	MS-60%	MSD-56%
Barium	MS-62%	MSD-131%
Lead	MS-42%	MSD-180%
Manganese	MS-24%	---
Zinc	MS-190%	MSD-245%
Aluminum**	MS-214%	MSD-216%
Calcium	---	MSD-255%
Iron**	MS-13%	MSD-0%
Magnesium	MS-72%	MSD-127%

** The sample concentration exceeded the spike amount added by a factor of four, therefore the spike recovery criteria does not apply.

The poor spike recovery for the other elements may be related to matrix interference, since the LCS and LCSD recoveries for those elements were within the QC limits.

The RPD between the sample and its duplicate within the batch exceeded the QC limit for Calcium 57%, Copper 63%, and Magnesium 22%. The RPD between the LCS and the LCSD for these elements was within the QC limits, suggesting that the sample chosen for QC may not be homogenous.

[redacted] # 8[redacted] 2[redacted]4 [redacted]

Veritech, 175 Route 46 West, Fairfield, NJ 07004
A Division of HAMPTON-CLARKE, INC. NJDEPE # 14622

CHAIN OF CUSTODY RECORD

PHONE (800) 426-9992
FAX (973) 439-1458

01251613

CUSTOMER INFORMATION

CUSTOMER: LAWLER MATUSKY & SKELLY
ADDRESS: ONE BLUE HILL PLAZA, PEARL RIVER NY
TELEPHONE: (845) 735-8300
FAX: (845) 735-7466
PROJECT: NYSDOT
PROJECT MANAGER: T. SCHNEIDER
PROJECT LOCATION: HARRISON LANDFILL
STATE: NEW YORK
PO NUMBER: —

REPORT INFORMATION

SEND REPORT TO: MARIA HEINCZ
SAME

SEND INVOICE TO: MARIA HEINCZ
SAME

PROJECT INFORMATION

TURNAROUND (CONFIRM RUSH TAT'S WITH LAB)

- [x] STANDARD
- [ ] RUSH
- [ ] 24 HOURS 100%
- [ ] 48 HOURS 75%
- [ ] 72 HOURS 50%
- [ ] 1 WEEK 25%
- [ ] 10 DAYS 10%

DELIVERABLES (PLEASE CHECK BOX)

- [ ] STANDARD
- [ ] FULL
- [ ] WASTE
- [ ] BUST
- [ ] NJ REDUCED
- [ ] EXCEL
- [ ] HAZSITE
- [ ] CUSTOM
- [ ] ELECTRONIC DELIVERABLE
- [ ] OTHER (SPECIFY)

ANALYTICAL REQUESTS

LAB SAMPLE NUMBER (LAB USE ONLY)	SAMPLE IDENTIFICATION	METHANOL BOTTLE #	DATE COLLECTED	TIME COLLECTED	COMPOSITE (C)	GRAB (G)	SAMPLE MATRIX	H2SO4	HNO3	HCL	NaOH	ZnAc + NaOH	Ascorbic	NONE	Methanol	Other	ANALYSIS
AB23032	PC-2	—	1/24/01	1345		✓	GW		1								TAL METALS - TOTAL
23033	↓	—	↓	↓		✓	↓							1			TAL METALS - Dissolved*
23032	↓	—	↓	↓		✓	↓							1			Chloride
23034	MW-4	—	1/24/01	1400		✓	↓		1								TAL METALS - TOTAL
23035	↓	—	↓	↓		✓	↓							1			TAL METALS - Dissolved*
23034	↓	—	↓	↓		✓	↓							1			Chloride
23036	SW-2	—	1/24/01	1415		✓	SW		1								TAL METALS - TOTAL
23037	↓		↓	↓		✓	↓							1			TAL METALS - Dissolved*
23036	↓		↓	↓		✓	↓							1			Chloride
23038	SD-2		1/24/01	1415		✓	SD							1			TAL METALS / Cl-

SAMPLER CERTIFIES THAT EACH SAMPLE RECEIVED PROPER FIELD PRESERVATION (IF REQUIRED) (INITIALS)

SAMPLE HAZARDS: FLAMMABLE [ ] SKIN IRRITANT [ ] NON-HAZARD [ ] UNKNOWN [x] NOXIOUS FUMES [ ]

SPECIAL INSTRUCTIONS: LAB to filter + Preserve

TEMPERATURE UPON RECEIPT:

RELINQUISHED BY: T. Schneider AGENT OF:	DATE / TIME 1/24/01	RECEIVED BY: Frank D[illegible] AGENT OF: HCI	DATE / TIME 1/24/01
RELINQUISHED BY: AGENT OF:	DATE / TIME	RECEIVED BY: AGENT OF:	DATE / TIME

[redacted] Air Bill # [redacted] 8466 2264 4782 [redacted]

Veritech, 175 Route 46 West, Fairfield, NJ 07004
A Division of HAMPTON-CLARKE, INC. NJDEPE # 14622

CHAIN OF CUSTODY RECORD

PHONE (800) 426-9992
FAX (973) 439-1458

CUSTOMER INFORMATION

CUSTOMER: Lawler MATUSKY & SKelly
ADDRESS: One Blue Hill Plaza, Pearl River
TELEPHONE: (845) 735-8300
FAX: (845) 735-7466
PROJECT: NYSDOT
PROJECT MANAGER: T. SCHNEIDER
PROJECT LOCATION: HARRISON LANDFILL
STATE: NEW YORK
PO NUMBER:

REPORT INFORMATION

SEND REPORT TO: MARIA HEINCZ
SAME
SEND INVOICE TO: MARIA HEINCZ
SAME

PROJECT INFORMATION

TURNAROUND (CONFIRM RUSH TAT'S WITH LAB)

- [x] STANDARD
- [ ] RUSH
  - [ ] 24 HOURS 100%
  - [ ] 48 HOURS 75%
  - [ ] 72 HOURS 50%
  - [ ] 1 WEEK 25%
  - [ ] 10 DAYS 10%

DELIVERABLES (PLEASE CHECK BOX)

- [ ] STANDARD
- [ ] FULL
- [ ] WASTE
- [ ] BUST
- [ ] NJ REDUCED
- [ ] EXCEL
- [ ] HAZSITE
- [ ] CUSTOM
- [ ] ELECTRONIC DELIVERABLE
- [ ] OTHER (SPECIFY)

ANALYTICAL REQUESTS

LAB SAMPLE NUMBER (LAB USE ONLY)	SAMPLE IDENTIFICATION	METHANOL BOTTLE #	DATE COLLECTED	TIME COLLECTED	SAMPLE TYPE COMPOSITE (C)	SAMPLE TYPE GRAB (G)	SAMPLE MATRIX	No. of Bottles H2SO4	HNO3	HCL	NaOH	ZnAc + NaOH	Ascorbic	NONE	Methanol	Other	ANALYSIS
AB23039	SW-4		1/24/01	1430		✓	SW		1								TAL Metals - Total
23040	↓		↓	↓		✓	↓							1			TAL Metals - Dissolved*
23039	↓		↓	↓		✓	↓							1			Chloride
23041	SD-4		1/24/01	1430		✓	SW							1			TAL Metals / Chloride
23042	SW-5		1/24/01	1500		✓	SW		1								TAL Metals - Total
23043	↓		↓	↓		✓	↓							1			TAL Metals - Dissolved
23042	↓		↓	↓		✓	↓							1			Cl-
	Temp Blank		—	—			—				—				—		—

SAMPLER CERTIFIES THAT EACH SAMPLE RECEIVED PROPER FIELD PRESERVATION (IF REQUIRED) (INITIALS)

SAMPLE HAZARDS : FLAMMABLE [ ] SKIN IRRITANT [ ] NON-HAZARD [ ] UNKNOWN [x] NOXIOUS FUMES [ ]

SPECIAL INSTRUCTIONS: * Lab to filter & Preserve

TEMPERATURE UPON RECEIPT:

RELINQUISHED BY: T. Schneider AGENT OF:	DATE / TIME 1/24/01	RECEIVED BY: Fed Ex AGENT OF: ITC I	DATE / TIME 1/24/01 1/24/01
RELINQUISHED BY: AGENT OF:	DATE / TIME	RECEIVED BY: AGENT OF:	DATE / TIME

For Batch 3169 (Aqueous):

Sample AB23034 (MW-4 unfiltered), was run at a ten times dilution.

The MS and MSD fell outside the QC limit for the following elements:

Iron**	MS-66%	MSD-36%
Manganese**	MS-42%	MSD-0%

** The sample concentration exceeded the spike amount added by a factor of four, therefore the spike recovery criteria does not apply.

Wet Chemistry

There were no problems associated with this analysis.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or his designee, as verified by the following signature.

Stan Gilewicz, Laboratory Director

2/23/01
Date

FedEx. USA Airbill FedEx Tracking Number **8196 2264 4783**

RECIPIENT: PEEL HERE

1 From This portion can be removed for Recipient's records.

Date 1/24/01 FedEx Tracking Number 819622644783

Sender's Name T. SCHNEIDER Phone 845735-8300

Company LAWLER MATUSKY & SKELLY ENGINE

Address 1 BLUE HILL PLZ

Dept/Floor/Suite/Room

City PEARL RIVER State NY ZIP 10965

2 Your Internal Billing Reference 446-156

3 To

Recipient's Name SAMPLE RECEIVING Phone 800 426-9992

Company VERITECH LABS/HAMPTON CLARK

Address 175 ROUTE 46 WEST

To "HOLD" at FedEx location, print FedEx address. We cannot deliver to P.O. boxes or P.O. ZIP codes.

Dept/Floor/Suite/Room

City Fairfield State NJ ZIP 07004

8196 2264 4783

0128423295

0215 **Recipient's Copy**

4a Express Package Service — Packages up to 150 lbs. Delivery commitment may be later in some areas.

- [x] FedEx Priority Overnight — Next business morning
- [ ] FedEx Standard Overnight — Next business afternoon
- [ ] FedEx First Overnight — Earliest next business morning delivery to select locations
- [ ] FedEx 2Day* — Second business day
- [ ] FedEx Express Saver* — Third business day

* FedEx Envelope/Letter Rate not available. Minimum charge: One-pound rate

4b Express Freight Service — Packages over 150 lbs. Delivery commitment may be later in some areas.

- [ ] FedEx 1Day Freight* — Next business day
- [ ] FedEx 2Day Freight — Second business day
- [ ] FedEx 3Day Freight — Third business day

* Call for Confirmation: _____

5 Packaging — * Declared value limit $500

- [ ] FedEx Envelope/Letter*
- [ ] FedEx Pak*
- [x] Other Pkg. — Includes FedEx Box, FedEx Tube, and customer pkg.

6 Special Handling — Include FedEx address in Section 3.

- [ ] SATURDAY Delivery — Available for FedEx Priority Overnight and FedEx 2Day to select ZIP codes
- [ ] SUNDAY Delivery — Available for FedEx Priority Overnight to select ZIP codes
- [ ] HOLD Weekday at FedEx Location — Not available with FedEx First Overnight
- [ ] HOLD Saturday at FedEx Location — Available for FedEx Priority Overnight and FedEx 2Day to select locations

Does this shipment contain dangerous goods? One box must be checked.

- [x] No
- [ ] Yes — As per attached Shipper's Declaration
- [ ] Yes — Shipper's Declaration not required
- [ ] Dry Ice — Dry Ice, 9, UN 1845 _____ x _____ kg
- [ ] Cargo Aircraft Only

Dangerous goods cannot be shipped in FedEx packaging.

7 Payment Bill to: — Enter FedEx Acct. No. or Credit Card No. below. — [ ] Obtain Recip. Acct. No.

- [x] Sender — Acct. No. in Section 1 will be billed.
- [ ] Recipient
- [ ] Third Party
- [ ] Credit Card
- [ ] Cash/Check

Total Packages	Total Weight	Total Charges
1	53	

Credit Card Auth.

†Our liability is limited to $100 unless you declare a higher value. See the *FedEx Service Guide* for details.

8 Release Signature — Sign to authorize delivery without obtaining signature.

T. Schneider

By signing you authorize us to deliver this shipment without obtaining a signature and agree to indemnify and hold us harmless from any resulting claims.

Questions? Call 1-800-Go-FedEx® (800-463-3339)
Visit our Web site at www.fedex.com

359

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CONDITION UPON RECEIPT FORM

Veritech

Date Received: 1/25/01 Filed By: F.J.
Client: LAWLER Project/Account: NYSDOT
Veritech Project # _____

INITIAL CONDITIONS

YES	NO		
✓		[1]	Is there a corresponding Chain of Custody included with the samples?
✓		[2]	Are the samples in a container such as a cooler or ice chest?
	✓	[3]	Are the custody seals intact? IF NO, please circle one of the following: missing broken (N.A.)
____ °C		[4]	Please specify the temperature inside the container.

SAMPLE INFORMATION

YES	NO		
✓		[5]	Are the samples properly refrigerated (where required), have they arrived on ice?
✓		[6]	Are the samples within holding times for the parameters listed on the COC? If NO, list parameters and associated samples: _____
✓		[7]	Are all of the sample bottles intact? If NO, specify sample numbers below: broken: _____ leaking: _____
✓		[8]	Are all of the sample labels or numbers legible? If NO, specify: _____
✓		[9]	Do the contents of the container match the COC? If NO, specify: _____
✓		[10]	Is there enough sample sent for the analyses listed on the COC? If NO, specify: _____
✓		[11]	Are the samples preserved correctly (see Preservation Form for actual pH readings)?
		[12]	Are all soil VO(NJ) samples properly preserved in methanol with the correct soil weights (8g - 12g) and accompanied by dry soil? _____

OTHER

		[13]	Specify: _____

CORRECTIVE ACTIONS

NO.	ACTION
____	_____
____	_____

PRESERVATION DOCUMENTATION

Date Received 1/25/01
Client LAWLER
Veritech Project #

Filed By F.D
Project NYSDOT

SAMPLE ID:	CONTAINER SIZE	CONTAINER TYPE (PG)	PARAMETER	PRESERVATIVE	pH
SW5	1L	P	metals	HNO_3	1
SW-2	1L	P	metals	HNO_3	1
SW-4	1L	↓	↓	↓	↓
PC-2	1L	↓	↓	↓	↓
MW4	↓	↓	↓	↓	↓

INTERN[illegible]HAIN OF CUSTODY RECORD - REFRIGERAT[illegible]2 [illegible]ech

Client ID: LAWLER

Location: ~~E-6-F~~ F-4

COMMENTS

		REMOVED:				RETURNED:			
TEST	SAMPLE No.	DATE	TIME	SIGNATURE	ALTERNATE	DATE	TIME	SIGNATURE	ALTERNATE
TD-W	23032-37, 39, 40, 42-43	1/26/01	1010	RY		1/26/01	1600	RY	
Metals-Filtration	33, 35, 37, 40, 43	1/26/01	1010	RY		1/26/01	1100	RY	
TD-S1/SHg	23038, 41	1/29/01	1200			1/29/01	1230		
Cl⁻	23032, 34, 36, 39, 42	1/31/01	1520			1/31/01	1540		
%S	23038, 41	02.01.01	10:00	MG		02.01.01	10:30	MG	
Cl	23036, 41	2/1/01	1135			2/1/01	1540		
TD-S1	23038, 41	2/2/01	0900			2/2/01	1000		

FOR LOGIN BATCH

AB23032-43

INORGANIC ANALYSIS DATA SHEET

Lab Name: Veritech
Data File Name: W3169B

Lab Code: 14622
Analysis Date: 02/01/2001

Matrix: Water
Lab Sample ID: AB23032
Client ID: PC-2 unfiltered

Level: low/med
Dilution: 1

Batch: 3169
% Solid: 0

Concentration Units: ug/L

Cas No.	Analyte	MDL	Concentration	M
7429905	Aluminum	56	110	P
7440360	Antimony	2.1	U	P
7440382	Arsenic	7.0	U	P
7440393	Barium	17	180	P
7440417	Beryllium	2.2	U	P
7440702	Calcium	700	75000	P
7440473	Chromium	12	U	P
7440484	Cobalt	3.4	U	P
7440508	Copper	12	U	P
7439896	Iron	65	80000	P
7439921	Lead	4.0	U	P
7439954	Magnesium	81	25000	P
7439965	Manganese	5.3	17000	P
7440020	Nickel	6.6	U	P
7782492	Selenium	8.6	17	P
7440224	Silver	5.7	U	P
7440280	Thallium	6.0	6.9	P
7440622	Vanadium	3.3	8.0	P
7440666	Zinc	14	U	P

U - Indicates compound not found above detection/reporting limit
* - Indicates compound above calibration range
P - Indicates analyzed by ICP(OPTIMA 3000DV)
CV - Indicates analyzed by Cold Vapor

Comments:_____

DVR 2/15/01

INORGANIC ANALYSIS DATA SHEET

Lab Name: Veritech
Data File Name: A3168A

Lab Code: 14622
Analysis Date: 01/30/2001

Matrix: Water
Lab Sample ID: AB23032
Client ID: PC-2 unfiltered

Level: low/med
Dilution: 1

Batch: 3169
% Solid: 0

Concentration Units: ug/L

Cas No.	Analyte	MDL	Concentration	M
7440439	Cadmium	2.6	U	P

U - Indicates compound not found above detection/reporting limit
* - Indicates compound above calibration range
P - Indicates analyzed by ICP(OPTIMA 3000DV)
CV - Indicates analyzed by Cold Vapor

Comments:_____

DLC 2/15/01

INORGANIC ANALYSIS DATA SHEET

Lab Name: Veritech
Data File Name: W3169Z

Lab Code: 14622
Analysis Date: 2/ 1/01

Matrix: Water
Lab Sample ID: AB23032
Client ID: PC-2 unfiltered

Level: low/med
Dilution: 1

Batch: 3169
% Solid: 0

Concentration Units: ug/L

Cas No.	Analyte	MDL	Concentration	M
7440097	Potassium	72	3200	P
7440235	Sodium	130	63000	P

U - Indicates compound not found above detection/reporting limit
* - Indicates compound above calibration range
P - Indicates analyzed by ICP(ARL 3560)
CV - Indicates analyzed by Cold Vapor

Comments:_____

DLV 2/15/

INORGANIC ANALYSIS DATA SHEET

Lab Name: Veritech

Data File Name: H3169sw

Lab Code: 14622

Analysis Date: 01/31/2001

Matrix: Water

Lab Sample ID: AB23032
Client ID: PC-2 unfiltered

Level: low/med
Batch: 3169

Dilution: 1
% Solid: 0

Concentration Units: Ug/L

Cas No.	Analyte	MDL	Concentration	M
7439976	Mercury	0.14	U	CV

U - Indicates compound not found above detection/reporting limit
* - Indicates compound above calibration range
P - Indicates analyzed by ICP(OPTIMA 3000DV)
CV - Indicates analyzed by Cold Vapor

Comments: _____

INORGANIC ANALYSIS DATA SHEET

Lab Name: Veritech
Data File Name: W3169B

Lab Code: 14622
Analysis Date: 02/01/2001

Matrix: Water
Lab Sample ID: AB23033
Client ID: PC-2 filtered

Level: low/med
Dilution: 1

Batch: 3169
% Solid: 0

Concentration Units: ug/L

Cas No.	Analyte	MDL	Concentration	M
7429905	Aluminum	56	U	P
7440360	Antimony	2.1	U	P
7440382	Arsenic	7.0	U	P
7440393	Barium	17	86	P
7440417	Beryllium	2.2	U	P
7440702	Calcium	700	74000	P
7440473	Chromium	12	U	P
7440484	Cobalt	3.4	U	P
7440508	Copper	12	U	P
7439896	Iron	65	40000	P
7439921	Lead	4.0	U	P
7439954	Magnesium	81	25000	P
7439965	Manganese	5.3	17000	P
7440020	Nickel	6.6	U	P
7782492	Selenium	8.6	10	P
7440224	Silver	5.7	U	P
7440280	Thallium	6.0	8.9	P
7440622	Vanadium	3.3	U	P
7440666	Zinc	14	U	P

U - Indicates compound not found above detection/reporting limit
* - Indicates compound above calibration range
P - Indicates analyzed by ICP(OPTIMA 3000DV)
CV - Indicates analyzed by Cold Vapor

Comments:_____

DLV 2/15/01

INORGANIC ANALYSIS DATA SHEET

Lab Name: Veritech

Lab Code: 14622

Matrix: Water

Level: low/med
Batch: 3169

Data File Name: A3168A

Analysis Date: 01/31/2001

Lab Sample ID: AB23033
Client ID: PC-2 filtered
Dilution: 1
% Solid: 0

Concentration Units: ug/L

Cas No.	Analyte	MDL	Concentration	M
7440439	Cadmium	2.6	U	P

U - Indicates compound not found above detection/reporting limit
* - Indicates compound above calibration range
P - Indicates analyzed by ICP(OPTIMA 3000DV)
CV - Indicates analyzed by Cold Vapor

Comments: _____

INORGANIC ANALYSIS DATA SHEET

Lab Name: Veritech
Data File Name: W3169Z

Lab Code: 14622
Analysis Date: 2/ 1/01

Matrix: Water
Lab Sample ID: AB23033
Client ID: PC-2 filtered

Level: low/med
Dilution: 1

Batch: 3169
% Solid: 0

Concentration Units: ug/L

Cas No.	Analyte	MDL	Concentration	M
7440097	Potassium	72	3600	P
7440235	Sodium	130	60000	P

U - Indicates compound not found above detection/reporting limit
* - Indicates compound above calibration range
P - Indicates analyzed by ICP(ARL 3560)
CV - Indicates analyzed by Cold Vapor

Comments: _____

INORGANIC ANALYSIS DATA SHEET

Lab Name: Veritech

Lab Code: 14622

Matrix: Water

Level: low/med
Batch: 3169

Data File Name: H3169sw

Analysis Date: 01/31/2001

Lab Sample ID: AB23033
Client ID: PC-2 filtered
Dilution: 1
% Solid: 0

Concentration Units: Ug/L

Cas No.	Analyte	MDL	Concentration	M
7439976	Mercury	0.14	U	CV

U - Indicates compound not found above detection/reporting limit
* - Indicates compound above calibration range
P - Indicates analyzed by ICP(OPTIMA 3000DV)
CV - Indicates analyzed by Cold Vapor

Comments: _____

INORGANIC ANALYSIS DATA SHEET

Lab Name: Veritech

Data File Name: W3169B

Lab Code: 14622

Analysis Date: 02/01/2001

Matrix: Water

Lab Sample ID: AB23034
Client ID: MW-4 unfiltered

Level: low/med
Batch: 3169

Dilution: 1
% Solid: 0

Concentration Units: ug/L

Cas No.	Analyte	MDL	Concentration	M
7429905	Aluminum	56	U	P
7440360	Antimony	2.1	U	P
7440382	Arsenic	7.0	U	P
7440393	Barium	17	U	P
7440417	Beryllium	2.2	U	P
7440702	Calcium	700	6500	P
7440473	Chromium	12	U	P
7440484	Cobalt	3.4	U	P
7440508	Copper	12	U	P
7439896	Iron	65	12000	P
7439921	Lead	4.0	U	P
7439954	Magnesium	81	2100	P
7440020	Nickel	6.6	U	P
7782492	Selenium	8.6	U	P
7440224	Silver	5.7	U	P
7440280	Thallium	6.0	U	P
7440622	Vanadium	3.3	U	P
7440666	Zinc	14	U	P

U - Indicates compound not found above detection/reporting limit
* - Indicates compound above calibration range
P - Indicates analyzed by ICP(OPTIMA 3000DV)
CV - Indicates analyzed by Cold Vapor

Comments:_____

DCV 2/23/01

INORGANIC ANALYSIS DATA SHEET

Lab Name: Veritech

Data File Name: A3168A

Lab Code: 14622

Analysis Date: 01/31/2001

Matrix: Water

Lab Sample ID: AB23034
Client ID: MW-4 unfiltered

Level: low/med
Batch: 3169

Dilution: 1
% Solid: 0

Concentration Units: ug/L

Cas No.	Analyte	MDL	Concentration	M
7440439	Cadmium	2.6	U	P

U - Indicates compound not found above detection/reporting limit
* - Indicates compound above calibration range
P - Indicates analyzed by ICP(OPTIMA 3000DV)
CV - Indicates analyzed by Cold Vapor

Comments:_____

2/15/01

INORGANIC ANALYSIS DATA SHEET

Lab Name: Veritech
Data File Name: W3169B

Lab Code: 14622
Analysis Date: 02/01/2001

Matrix: Water
Lab Sample ID: AB23034
Client ID: MW-4 unfiltered

Level: low/med
Dilution: 10

Batch: 3169
% Solid: 0

Concentration Units: ug/L

Cas No.	Analyte	MDL	Concentration	M
7439965	Manganese	53	42000	P

U - Indicates compound not found above detection/reporting limit
* - Indicates compound above calibration range
P - Indicates analyzed by ICP(OPTIMA 3000DV)
CV - Indicates analyzed by Cold Vapor

Comments:_____

DLV 2/15/01

INORGANIC ANALYSIS DATA SHEET

Lab Name: Veritech

Lab Code: 14622

Matrix: Water

Level: low/med
Batch: 3169

Data File Name: W3169Z

Analysis Date: 2/ 1/01

Lab Sample ID: AB23034
Client ID: MW-4 unfiltered
Dilution: 1
% Solid: 0

Concentration Units: ug/L

Cas No.	Analyte	MDL	Concentration	M
7440097	Potassium	72	3100	P
7440235	Sodium	130	30000	P

U - Indicates compound not found above detection/reporting limit
* - Indicates compound above calibration range
P - Indicates analyzed by ICP(ARL 3560)
CV - Indicates analyzed by Cold Vapor

Comments: _____

INORGANIC ANALYSIS DATA SHEET

Lab Name: Veritech

Data File Name: H3169sw

Lab Code: 14622

Analysis Date: 01/31/2001

Matrix: Water

Lab Sample ID: AB23034
Client ID: MW-4 unfiltered

Level: low/med
Batch: 3169

Dilution: 1
% Solid: 0

Concentration Units: Ug/L

Cas No.	Analyte	MDL	Concentration	M
7439976	Mercury	0.14	U	CV

U - Indicates compound not found above detection/reporting limit
* - Indicates compound above calibration range
P - Indicates analyzed by ICP(OPTIMA 3000DV)
CV - Indicates analyzed by Cold Vapor

Comments: _____

INORGANIC ANALYSIS DATA SHEET

Lab Name: Veritech
Data File Name: W3169B

Lab Code: 14622
Analysis Date: 02/01/2001

Matrix: Water
Lab Sample ID: AB23035
Client ID: MW-4 filtered

Level: low/med
Dilution: 1

Batch: 3169
% Solid: 0

Concentration Units: ug/L

Cas No.	Analyte	MDL	Concentration	M
7429905	Aluminum	56	U	P
7440360	Antimony	2.1	U	P
7440382	Arsenic	7.0	U	P
7440393	Barium	17	U	P
7440417	Beryllium	2.2	U	P
7440702	Calcium	700	5700	P
7440473	Chromium	12	U	P
7440484	Cobalt	3.4	U	P
7440508	Copper	12	U	P
7439896	Iron	65	4800	P
7439921	Lead	4.0	U	P
7439954	Magnesium	81	1800	P
7439965	Manganese	5.3	3800	P
7440020	Nickel	6.6	U	P
7782492	Selenium	8.6	U	P
7440224	Silver	5.7	U	P
7440280	Thallium	6.0	U	P
7440622	Vanadium	3.3	U	P
7440666	Zinc	14	U	P

U - Indicates compound not found above detection/reporting limit
* - Indicates compound above calibration range
P - Indicates analyzed by ICP(OPTIMA 3000DV)
CV - Indicates analyzed by Cold Vapor

Comments:_____

INORGANIC ANALYSIS DATA SHEET

Lab Name: Veritech
Data File Name: A3168A

Lab Code: 14622
Analysis Date: 01/31/2001

Matrix: Water
Lab Sample ID: AB23035
Client ID: MW-4 filtered

Level: low/med
Dilution: 1

Batch: 3169
% Solid: 0

Concentration Units: ug/L

Cas No.	Analyte	MDL	Concentration	M
7440439	Cadmium	2.6	U	P_

U - Indicates compound not found above detection/reporting limit
* - Indicates compound above calibration range
P - Indicates analyzed by ICP(OPTIMA 3000DV)
CV - Indicates analyzed by Cold Vapor

Comments:_____

DVR 2/15/

INORGANIC ANALYSIS DATA SHEET

Lab Name: Veritech
Data File Name: W3169B

Lab Code: 14622
Analysis Date: 02/01/2001

Matrix: Water
Lab Sample ID: AB23035
Client ID: MW-4 filtered

Level: low/med
Dilution: 1

Batch: 3169
% Solid: 0

Concentration Units: ug/L

Cas No.	Analyte	MDL	Concentration	M
7439965	Manganese	5.3	3800	P

U - Indicates compound not found above detection/reporting limit
* - Indicates compound above calibration range
P - Indicates analyzed by ICP(OPTIMA 3000DV)
CV - Indicates analyzed by Cold Vapor

Comments:_____

2/15/01

INORGANIC ANALYSIS DATA SHEET

Lab Name: Veritech

Lab Code: 14622

Matrix: Water

Level: low/med
Batch: 3169

Data File Name: W3169Z

Analysis Date: 2/ 1/01

Lab Sample ID: AB23035
Client ID: MW-4 filtered
Dilution: 1
% Solid: 0

Concentration Units: ug/L

Cas No.	Analyte	MDL	Concentration	M
7440097	Potassium	72	2800	P
7440235	Sodium	130	28000	P

U - Indicates compound not found above detection/reporting limit
* - Indicates compound above calibration range
P - Indicates analyzed by ICP(ARL 3560)
CV - Indicates analyzed by Cold Vapor

Comments: _____

INORGANIC ANALYSIS DATA SHEET

Lab Name: Veritech

Lab Code: 14622

Matrix: Water

Level: low/med

Batch: 3169

Data File Name: H3169sw

Analysis Date: 01/31/2001

Lab Sample ID: AB23035

Client ID: MW-4 filtered

Dilution: 1

% Solid: 0

Concentration Units: Ug/L

Cas No.	Analyte	MDL	Concentration	M
7439976	Mercury	0.14	U	CV

U - Indicates compound not found above detection/reporting limit
* - Indicates compound above calibration range
P - Indicates analyzed by ICP(OPTIMA 3000DV)
CV - Indicates analyzed by Cold Vapor

Comments: _____

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INORGANIC ANALYSIS DATA SHEET

Lab Name: Veritech

Data File Name: W3169B

Lab Code: 14622

Analysis Date: 02/01/2001

Matrix: Water

Lab Sample ID: AB23036
Client ID: SW-2 unfiltered

Level: low/med
Batch: 3169

Dilution: 1
% Solid: 0

Concentration Units: ug/L

Cas No.	Analyte	MDL	Concentration	M
7429905	Aluminum	56	1400	P
7440360	Antimony	2.1	U	P
7440382	Arsenic	7.0	U	P
7440393	Barium	17	23	P
7440417	Beryllium	2.2	U	P
7440702	Calcium	700	29000	P
7440473	Chromium	12	U	P
7440484	Cobalt	3.4	U	P
7440508	Copper	12	U	P
7439896	Iron	65	140	P
7439921	Lead	4.0	U	P
7439954	Magnesium	81	9000	P
7439965	Manganese	5.3	350	P
7440020	Nickel	6.6	U	P
7782492	Selenium	8.6	U	P
7440224	Silver	5.7	U	P
7440280	Thallium	6.0	U	P
7440622	Vanadium	3.3	U	P
7440666	Zinc	14	U	P

U - Indicates compound not found above detection/reporting limit
* - Indicates compound above calibration range
P - Indicates analyzed by ICP(OPTIMA 3000DV)
CV - Indicates analyzed by Cold Vapor

Comments:_____

INORGANIC ANALYSIS DATA SHEET

Lab Name: Veritech

Data File Name: A3168A

Lab Code: 14622

Analysis Date: 01/31/2001

Matrix: Water

Lab Sample ID: AB23036
Client ID: SW-2 unfiltered

Level: low/med

Dilution: 1

Batch: 3169

% Solid: 0

Concentration Units: ug/L

Cas No.	Analyte	MDL	Concentration	M
7440439	Cadmium	2.6	U	P

U - Indicates compound not found above detection/reporting limit
* - Indicates compound above calibration range
P - Indicates analyzed by ICP(OPTIMA 3000DV)
CV - Indicates analyzed by Cold Vapor

Comments:_____

INORGANIC ANALYSIS DATA SHEET

Lab Name: Veritech
Data File Name: W3169Z

Lab Code: 14622
Analysis Date: 2/ 1/01

Matrix: Water
Lab Sample ID: AB23036
Client ID: SW-2 unfiltered

Level: low/med
Dilution: 1

Batch: 3169
% Solid: 0

Concentration Units: ug/L

Cas No.	Analyte	MDL	Concentration	M
7440097	Potassium	72	2300	P
7440235	Sodium	130	22000	P

U - Indicates compound not found above detection/reporting limit
* - Indicates compound above calibration range
P - Indicates analyzed by ICP(ARL 3560)
CV - Indicates analyzed by Cold Vapor

Comments: _____

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INORGANIC ANALYSIS DATA SHEET

Lab Name: Veritech

Data File Name: H3169sw

Lab Code: 14622

Analysis Date: 01/31/2001

Matrix: Water

Lab Sample ID: AB23036
Client ID: SW-2 unfiltered

Level: low/med

Dilution: 1

Batch: 3169

% Solid: 0

Concentration Units: Ug/L

Cas No.	Analyte	MDL	Concentration	M
7439976	Mercury	0.14	U	CV

U - Indicates compound not found above detection/reporting limit
* - Indicates compound above calibration range
P - Indicates analyzed by ICP(OPTIMA 3000DV)
CV - Indicates analyzed by Cold Vapor

Comments: _____

INORGANIC ANALYSIS DATA SHEET

Lab Name: Veritech
Data File Name: W3169B

Lab Code: 14622
Analysis Date: 02/01/2001

Matrix: Water
Lab Sample ID: AB23037
Client ID: SW-2 filtered

Level: low/med
Dilution: 1

Batch: 3169
% Solid: 0

Concentration Units: ug/L

Cas No.	Analyte	MDL	Concentration	M
7429905	Aluminum	56	U	P
7440360	Antimony	2.1	U	P
7440382	Arsenic	7.0	U	P
7440393	Barium	17	25	P
7440417	Beryllium	2.2	U	P
7440702	Calcium	700	33000	P
7440473	Chromium	12	U	P
7440484	Cobalt	3.4	U	P
7440508	Copper	12	U	P
7439896	Iron	65	69	P
7439921	Lead	4.0	U	P
7439954	Magnesium	81	10000	P
7439965	Manganese	5.3	99	P
7440020	Nickel	6.6	U	P
7782492	Selenium	8.6	U	P
7440224	Silver	5.7	U	P
7440280	Thallium	6.0	U	P
7440622	Vanadium	3.3	U	P
7440666	Zinc	14	U	P

U - Indicates compound not found above detection/reporting limit
* - Indicates compound above calibration range
P - Indicates analyzed by ICP(OPTIMA 3000DV)
CV - Indicates analyzed by Cold Vapor

Comments:_____

INORGANIC ANALYSIS DATA SHEET

Lab Name: Veritech
Data File Name: A3168A

Lab Code: 14622
Analysis Date: 01/31/2001

Matrix: Water
Lab Sample ID: AB23037
Client ID: SW-2 filtered

Level: low/med
Dilution: 1

Batch: 3169
% Solid: 0

Concentration Units: ug/L

Cas No.	Analyte	MDL	Concentration	M
7440439	Cadmium	2.6	U	P_

U - Indicates compound not found above detection/reporting limit
* - Indicates compound above calibration range
P - Indicates analyzed by ICP(OPTIMA 3000DV)
CV - Indicates analyzed by Cold Vapor

Comments: _____

INORGANIC ANALYSIS DATA SHEET

Lab Name: Veritech
Data File Name: W3169Z

Lab Code: 14622
Analysis Date: 2/ 1/01

Matrix: Water
Lab Sample ID: AB23037
Client ID: SW-2 filtered

Level: low/med
Dilution: 1

Batch: 3169
% Solid: 0

Concentration Units: ug/L

Cas No.	Analyte	MDL	Concentration	M
7440097	Potassium	72	3900	P
7440235	Sodium	130	28000	P

U - Indicates compound not found above detection/reporting limit
* - Indicates compound above calibration range
P - Indicates analyzed by ICP(ARL 3560)
CV - Indicates analyzed by Cold Vapor

Comments:_____

INORGANIC ANALYSIS DATA SHEET

Lab Name: Veritech

Data File Name: H3169sw

Lab Code: 14622

Analysis Date: 01/31/2001

Matrix: Water

Lab Sample ID: AB23037
Client ID: SW-2 filtered

Level: low/med
Batch: 3169

Dilution: 1
% Solid: 0

Concentration Units: Ug/L

Cas No.	Analyte	MDL	Concentration	M
7439976	Mercury	0.14	U	CV

U - Indicates compound not found above detection/reporting limit
* - Indicates compound above calibration range
P - Indicates analyzed by ICP(OPTIMA 3000DV)
CV - Indicates analyzed by Cold Vapor

Comments:_____

INORGANIC ANALYSIS DATA SHEET

Lab Name: Veritech
Data File Name: S3171b

Lab Code: 14622
Analysis Date: 02/02/2001

Matrix: Soil
Lab Sample ID: AB23038
Client ID: SD-2

Level: low/med
Dilution: 100

Batch: 3171
% Solid: 77

Concentration Units: Mg/Kg

Cas No.	Analyte	MDL	Concentration	M
7440360	Antimony	0.39	0.64	P
7440382	Arsenic	0.94	2.6	P
7440393	Barium	3.9	33	P
7440417	Beryllium	0.10	U	P
7440439	Cadmium	0.078	0.16	P
7440473	Chromium	2.1	8.0	P
7440484	Cobalt	0.43	4.6	P
7440508	Copper	0.99	13	P
7439921	Lead	2.7	31	P
7439965	Manganese	21	290	P
7440020	Nickel	0.65	12	P
7782492	Selenium	0.65	0.92	P
7440224	Silver	0.12	0.14	P
7440280	Thallium	0.70	U	P
7440622	Vanadium	6.1	14	P
7440666	Zinc	11	53	P

U - Indicates compound not found above detection/reporting limit
* - Indicates compound above calibration range
P - Indicates analyzed by ICP(OPTIMA 3000DV)
CV - Indicates analyzed by Cold Vapor

Comments: _____

DLV 2/15/01

INORGANIC ANALYSIS DATA SHEET

Lab Name: Veritech

Lab Code: 14622

Matrix: Soil

Level: low/med
Batch: 3171

Data File Name: S3171Z

Analysis Date: 2/ 2/01

Lab Sample ID: AB23038
Client ID: SD-2
Dilution: 100
% Solid: 77

Concentration Units: Mg/Kg

Cas No.	Analyte	MDL	Concentration	M
7429905	Aluminum	100	4600	P
7440702	Calcium	330	54000	P
7439896	Iron	70	13000	P
7439954	Magnesium	94	28000	P
7440097	Potassium	28	1200	P
7440235	Sodium	520	U	P

U - Indicates compound not found above detection/reporting limit
* - Indicates compound above calibration range
P - Indicates analyzed by ICP(ARL 3560)
CV - Indicates analyzed by Cold Vapor

Comments: _____

INORGANIC ANALYSIS DATA SHEET

Lab Name: Veritech

Lab Code: 14622

Matrix: Soil

Level: low/med
Batch: 3171

Data File Name: H3171sa

Analysis Date: 02/02/2001

Lab Sample ID: AB23038
Client ID: SD-2
Dilution: 167
% Solid: 77

Concentration Units: mg/Kg

Cas No.	Analyte	MDL	Concentration	M
7439976	Mercury	0.048	U	CV

U - Indicates compound not found above detection/reporting limit
* - Indicates compound above calibration range
P - Indicates analyzed by ICP(OPTIMA 3000DV)
CV - Indicates analyzed by Cold Vapor

Comments: _____

INORGANIC ANALYSIS DATA SHEET

Lab Name: Veritech

Data File Name: W3169B

Lab Code: 14622

Analysis Date: 02/01/2001

Matrix: Water

Lab Sample ID: AB23039
Client ID: SW-4 unfiltered

Level: low/med
Batch: 3169

Dilution: 1
% Solid: 0

Concentration Units: ug/L

Cas No.	Analyte	MDL	Concentration	M
7429905	Aluminum	56	400	P
7440360	Antimony	2.1	U	P
7440382	Arsenic	7.0	U	P
7440393	Barium	17	34	P
7440417	Beryllium	2.2	U	P
7440702	Calcium	700	35000	P
7440473	Chromium	12	U	P
7440484	Cobalt	3.4	U	P
7440508	Copper	12	U	P
7439896	Iron	65	1400	P
7439921	Lead	4.0	U	P
7439954	Magnesium	81	11000	P
7439965	Manganese	5.3	230	P
7440020	Nickel	6.6	U	P
7782492	Selenium	8.6	U	P
7440224	Silver	5.7	U	P
7440280	Thallium	6.0	U	P
7440622	Vanadium	3.3	U	P
7440666	Zinc	14	U	P

U - Indicates compound not found above detection/reporting limit
* - Indicates compound above calibration range
P - Indicates analyzed by ICP(OPTIMA 3000DV)
CV - Indicates analyzed by Cold Vapor

Comments: _____

INORGANIC ANALYSIS DATA SHEET

Lab Name: Veritech

Data File Name: A3168A

Lab Code: 14622

Analysis Date: 01/31/2001

Matrix: Water

Lab Sample ID: AB23039
Client ID: SW-4 unfiltered

Level: low/med
Batch: 3169

Dilution: 1
% Solid: 0

Concentration Units: ug/L

Cas No.	Analyte	MDL	Concentration	M
7440439	Cadmium	2.6	U	P_

U - Indicates compound not found above detection/reporting limit
* - Indicates compound above calibration range
P - Indicates analyzed by ICP(OPTIMA 3000DV)
CV - Indicates analyzed by Cold Vapor

Comments:_____

DW 2/15/01

INORGANIC ANALYSIS DATA SHEET

Lab Name: Veritech

Data File Name: W3169Z

Lab Code: 14622

Analysis Date: 2/ 1/01

Matrix: Water

Lab Sample ID: AB23039
Client ID: SW-4 unfiltered

Level: low/med
Batch: 3169

Dilution: 1
% Solid: 0

Concentration Units: ug/L

Cas No.	Analyte	MDL	Concentration	M
7440097	Potassium	72	2600	P
7440235	Sodium	130	29000	P

U - Indicates compound not found above detection/reporting limit
* - Indicates compound above calibration range
P - Indicates analyzed by ICP(ARL 3560)
CV - Indicates analyzed by Cold Vapor

Comments: _____

INORGANIC ANALYSIS DATA SHEET

Lab Name: Veritech
Data File Name: H3169sw

Lab Code: 14622
Analysis Date: 01/31/2001

Matrix: Water
Lab Sample ID: AB23039
Client ID: SW-4 unfiltered

Level: low/med
Dilution: 1

Batch: 3169
% Solid: 0

Concentration Units: Ug/L

Cas No.	Analyte	MDL	Concentration	M
7439976	Mercury	0.14	U	CV

U - Indicates compound not found above detection/reporting limit
* - Indicates compound above calibration range
P - Indicates analyzed by ICP(OPTIMA 3000DV)
CV - Indicates analyzed by Cold Vapor

Comments: _____

INORGANIC ANALYSIS DATA SHEET

Lab Name: Veritech

Data File Name: W3169B

Lab Code: 14622

Analysis Date: 02/01/2001

Matrix: Water

Lab Sample ID: AB23040
Client ID: SW-4 filtered

Level: low/med
Batch: 3169

Dilution: 1
% Solid: 0

Concentration Units: ug/L

Cas No.	Analyte	MDL	Concentration	M
7429905	Aluminum	56	U	P
7440360	Antimony	2.1	U	P
7440382	Arsenic	7.0	U	P
7440393	Barium	17	26	P
7440417	Beryllium	2.2	U	P
7440702	Calcium	700	34000	P
7440473	Chromium	12	U	P
7440484	Cobalt	3.4	U	P
7440508	Copper	12	U	P
7439896	Iron	65	U	P
7439921	Lead	4.0	U	P
7439954	Magnesium	81	10000	P
7439965	Manganese	5.3	59	P
7440020	Nickel	6.6	U	P
7782492	Selenium	8.6	U	P
7440224	Silver	5.7	U	P
7440280	Thallium	6.0	U	P
7440622	Vanadium	3.3	U	P
7440666	Zinc	14	U	P

U - Indicates compound not found above detection/reporting limit
* - Indicates compound above calibration range
P - Indicates analyzed by ICP(OPTIMA 3000DV)
CV - Indicates analyzed by Cold Vapor

Comments: _____

INORGANIC ANALYSIS DATA SHEET

Lab Name: Veritech

Data File Name: A3168A

Lab Code: 14622

Analysis Date: 01/31/2001

Matrix: Water

Lab Sample ID: AB23040
Client ID: SW-4 filtered

Level: low/med
Batch: 3169

Dilution: 1
% Solid: 0

Concentration Units: ug/L

Cas No.	Analyte	MDL	Concentration	M
7440439	Cadmium	2.6	U	P

U - Indicates compound not found above detection/reporting limit
* - Indicates compound above calibration range
P - Indicates analyzed by ICP(OPTIMA 3000DV)
CV - Indicates analyzed by Cold Vapor

Comments:_____

INORGANIC ANALYSIS DATA SHEET

Lab Name: Veritech
Data File Name: W3169Z

Lab Code: 14622
Analysis Date: 2/ 1/01

Matrix: Water
Lab Sample ID: AB23040
Client ID: SW-4 filtered

Level: low/med
Dilution: 1

Batch: 3169
% Solid: 0

Concentration Units: ug/L

Cas No.	Analyte	MDL	Concentration	M
7440097	Potassium	72	2500	P
7440235	Sodium	130	30000	P

U - Indicates compound not found above detection/reporting limit
* - Indicates compound above calibration range
P - Indicates analyzed by ICP(ARL 3560)
CV - Indicates analyzed by Cold Vapor

Comments:_____

INORGANIC ANALYSIS DATA SHEET

Lab Name: Veritech
Data File Name: H3169sw

Lab Code: 14622
Analysis Date: 01/31/2001

Matrix: Water
Lab Sample ID: AB23040
Client ID: SW-4 filtered

Level: low/med
Dilution: 1

Batch: 3169
% Solid: 0

Concentration Units: Ug/L

Cas No.	Analyte	MDL	Concentration	M
7439976	Mercury	0.14	U	CV

U - Indicates compound not found above detection/reporting limit
* - Indicates compound above calibration range
P - Indicates analyzed by ICP(OPTIMA 3000DV)
CV - Indicates analyzed by Cold Vapor

Comments:_____

INORGANIC ANALYSIS DATA SHEET

Lab Name: Veritech

Data File Name: S3171b

Lab Code: 14622

Analysis Date: 02/02/2001

Matrix: Soil

Lab Sample ID: AB23041

Client ID: SD-4

Level: low/med

Dilution: 100

Batch: 3171

% Solid: 75

Concentration Units: Mg/Kg

Cas No.	Analyte	MDL	Concentration	M
7440360	Antimony	0.40	U	P
7440382	Arsenic	0.96	2.6	P
7440393	Barium	4.0	37	P
7440417	Beryllium	0.11	U	P
7440439	Cadmium	0.080	U	P
7440473	Chromium	2.1	7.7	P
7440484	Cobalt	0.44	3.7	P
7440508	Copper	1.0	10	P
7439921	Lead	2.8	23	P
7439965	Manganese	22	600	P
7440020	Nickel	0.67	9.2	P
7782492	Selenium	0.67	1.0	P
7440224	Silver	0.13	U	P
7440280	Thallium	0.72	U	P
7440622	Vanadium	6.3	14	P
7440666	Zinc	11	48	P

U - Indicates compound not found above detection/reporting limit
* - Indicates compound above calibration range
P - Indicates analyzed by ICP(OPTIMA 3000DV)
CV - Indicates analyzed by Cold Vapor

Comments: _____

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INORGANIC ANALYSIS DATA SHEET

Lab Name: Veritech
Data File Name: S3171Z

Lab Code: 14622
Analysis Date: 2/ 2/01

Matrix: Soil
Lab Sample ID: AB23041
Client ID: SD-4

Level: low/med
Dilution: 100

Batch: 3171
% Solid: 75

Concentration Units: Mg/Kg

Cas No.	Analyte	MDL	Concentration	M
7429905	Aluminum	100	4800	P
7440702	Calcium	340	56000	P
7439896	Iron	72	13000	P
7439954	Magnesium	97	28000	P
7440097	Potassium	29	1300	P
7440235	Sodium	530	U	P

U - Indicates compound not found above detection/reporting limit
* - Indicates compound above calibration range
P - Indicates analyzed by ICP(ARL 3560)
CV - Indicates analyzed by Cold Vapor

Comments: _____

2/15/01

INORGANIC ANALYSIS DATA SHEET

Lab Name: Veritech

Lab Code: 14622

Matrix: Soil

Level: low/med

Batch: 3171

Data File Name: H3171sa

Analysis Date: 02/02/2001

Lab Sample ID: AB23041

Client ID: SD-4

Dilution: 167

% Solid: 75

Concentration Units: mg/Kg

Cas No.	Analyte	MDL	Concentration	M
7439976	Mercury	0.049	U	CV

U - Indicates compound not found above detection/reporting limit
* - Indicates compound above calibration range
P - Indicates analyzed by ICP(OPTIMA 3000DV)
CV - Indicates analyzed by Cold Vapor

Comments: _____

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DCV 2/20/01

INORGANIC ANALYSIS DATA SHEET

Lab Name: Veritech

Data File Name: W3169B

Lab Code: 14622

Analysis Date: 02/02/2001

Matrix: Water

Lab Sample ID: AB23042
Client ID: SW-5 unfiltered

Level: low/med
Batch: 3169

Dilution: 1
% Solid: 0

Concentration Units: ug/L

Cas No.	Analyte	MDL	Concentration	M
7429905	Aluminum	56	U	P
7440360	Antimony	2.1	U	P
7440382	Arsenic	7.0	U	P
7440393	Barium	17	30	P
7440417	Beryllium	2.2	U	P
7440702	Calcium	700	37000	P
7440473	Chromium	12	U	P
7440484	Cobalt	3.4	U	P
7440508	Copper	12	U	P
7439896	Iron	65	180	P
7439921	Lead	4.0	U	P
7439954	Magnesium	81	11000	P
7439965	Manganese	5.3	140	P
7440020	Nickel	6.6	U	P
7782492	Selenium	8.6	U	P
7440224	Silver	5.7	U	P
7440280	Thallium	6.0	U	P
7440622	Vanadium	3.3	U	P
7440666	Zinc	14	U	P

U - Indicates compound not found above detection/reporting limit
* - Indicates compound above calibration range
P - Indicates analyzed by ICP(OPTIMA 3000DV)
CV - Indicates analyzed by Cold Vapor

Comments:_____

INORGANIC ANALYSIS DATA SHEET

Lab Name: Veritech

Data File Name: A3168A

Lab Code: 14622

Analysis Date: 01/31/2001

Matrix: Water

Lab Sample ID: AB23042
Client ID: SW-5 unfiltered

Level: low/med
Batch: 3169

Dilution: 1
% Solid: 0

Concentration Units: ug/L

Cas No.	Analyte	MDL	Concentration	M
7440439	Cadmium	2.6	U	P

U - Indicates compound not found above detection/reporting limit
* - Indicates compound above calibration range
P - Indicates analyzed by ICP(OPTIMA 3000DV)
CV - Indicates analyzed by Cold Vapor

Comments:_____

INORGANIC ANALYSIS DATA SHEET

Lab Name: Veritech
Data File Name: W3169Z

Lab Code: 14622
Analysis Date: 2/ 1/01

Matrix: Water
Lab Sample ID: AB23042
Client ID: SW-5 unfiltered

Level: low/med
Dilution: 1

Batch: 3169
% Solid: 0

Concentration Units: ug/L

Cas No.	Analyte	MDL	Concentration	M
7440097	Potassium	72	2600	P
7440235	Sodium	130	28000	P

U - Indicates compound not found above detection/reporting limit
* - Indicates compound above calibration range
P - Indicates analyzed by ICP(ARL 3560)
CV - Indicates analyzed by Cold Vapor

Comments:_____

INORGANIC ANALYSIS DATA SHEET

Lab Name: Veritech

Lab Code: 14622

Matrix: Water

Level: low/med

Batch: 3169

Data File Name: H3169sw

Analysis Date: 01/31/2001

Lab Sample ID: AB23042

Client ID: SW-5 unfiltered

Dilution: 1

% Solid: 0

Concentration Units: Ug/L

Cas No.	Analyte	MDL	Concentration	M
7439976	Mercury	0.14	U	CV

U - Indicates compound not found above detection/reporting limit
* - Indicates compound above calibration range
P - Indicates analyzed by ICP(OPTIMA 3000DV)
CV - Indicates analyzed by Cold Vapor

Comments: _____

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INORGANIC ANALYSIS DATA SHEET

Lab Name: Veritech
Data File Name: W3169B

Lab Code: 14622
Analysis Date: 02/02/2001

Matrix: Water
Lab Sample ID: AB23043
Client ID: SW-5 filtered

Level: low/med
Dilution: 1

Batch: 3169
% Solid: 0

Concentration Units: ug/L

Cas No.	Analyte	MDL	Concentration	M
7429905	Aluminum	56	U	P
7440360	Antimony	2.1	U	P
7440382	Arsenic	7.0	U	P
7440393	Barium	17	28	P
7440417	Beryllium	2.2	U	P
7440702	Calcium	700	36000	P
7440473	Chromium	12	U	P
7440484	Cobalt	3.4	U	P
7440508	Copper	12	U	P
7439896	Iron	65	U	P
7439921	Lead	4.0	U	P
7439954	Magnesium	81	11000	P
7439965	Manganese	5.3	96	P
7440020	Nickel	6.6	U	P
7782492	Selenium	8.6	U	P
7440224	Silver	5.7	U	P
7440280	Thallium	6.0	U	P
7440622	Vanadium	3.3	U	P
7440666	Zinc	14	U	P

U - Indicates compound not found above detection/reporting limit
* - Indicates compound above calibration range
P - Indicates analyzed by ICP(OPTIMA 3000DV)
CV - Indicates analyzed by Cold Vapor

Comments:_____

INORGANIC ANALYSIS DATA SHEET

Lab Name: Veritech

Data File Name: A3168A

Lab Code: 14622

Analysis Date: 01/31/2001

Matrix: Water

Lab Sample ID: AB23043

Client ID: SW-5 filtered

Level: low/med

Dilution: 1

Batch: 3169

% Solid: 0

Concentration Units: ug/L

Cas No.	Analyte	MDL	Concentration	M
7440439	Cadmium	2.6	U	P

U - Indicates compound not found above detection/reporting limit
* - Indicates compound above calibration range
P - Indicates analyzed by ICP(OPTIMA 3000DV)
CV - Indicates analyzed by Cold Vapor

Comments:_____

INORGANIC ANALYSIS DATA SHEET

Lab Name: Veritech
Data File Name: W3169Z

Lab Code: 14622
Analysis Date: 2/ 1/01

Matrix: Water
Lab Sample ID: AB23043
Client ID: SW-5 filtered

Level: low/med
Dilution: 1

Batch: 3169
% Solid: 0

Concentration Units: ug/L

Cas No.	Analyte	MDL	Concentration	M
7440097	Potassium	72	2700	P
7440235	Sodium	130	27000	P

U - Indicates compound not found above detection/reporting limit
* - Indicates compound above calibration range
P - Indicates analyzed by ICP(ARL 3560)
CV - Indicates analyzed by Cold Vapor

Comments:_____

INORGANIC ANALYSIS DATA SHEET

Lab Name: Veritech

Data File Name: H3169sw

Lab Code: 14622

Analysis Date: 01/31/2001

Matrix: Water

Lab Sample ID: AB23043
Client ID: SW-5 filtered

Level: low/med

Dilution: 1

Batch: 3169

% Solid: 0

Concentration Units: Ug/L

Cas No.	Analyte	MDL	Concentration	M
7439976	Mercury	0.14	0.56	CV

U - Indicates compound not found above detection/reporting limit
* - Indicates compound above calibration range
P - Indicates analyzed by ICP(OPTIMA 3000DV)
CV - Indicates analyzed by Cold Vapor

Comments: _____

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Veritech Wet Chem Form 1 Summary

Lab #: AB23032

Lab #: AB23032 | Sample Matrix: Aqueous
Sample ID: PC-2 unfiltered | Date Received: 01/24/2001

Test Group Name: Chloride EPA 325 | Date Prepared:

Analyte	Concentration	Units	MDL/PQL	DF	Date Analyzed
Chloride	90	mg/l	1.8	1	01/31/2001

Lab #: AB23034 | Sample Matrix: Aqueous
Sample ID: MW 4 unfiltered | Date Received: 01/24/2001

Test Group Name: Chloride EPA 325 | Date Prepared:

Analyte	Concentration	Units	MDL/PQL	DF	Date Analyzed
Chloride	58	mg/l	1.8	1	01/31/2001

Lab #: AB23036 | Sample Matrix: Aqueous
Sample ID: SW 2 unfiltered | Date Received: 01/24/2001

Test Group Name: Chloride EPA 325 | Date Prepared:

Analyte	Concentration	Units	MDL/PQL	DF	Date Analyzed
Chloride	54	mg/l	1.8	1	01/31/2001

Lab #: AB23038 | Sample Matrix: Sediment
Sample ID: SD 2 | Date Received: 01/24/2001

Test Group Name: % Solids SM2540G | Date Prepared:

Analyte	Concentration	Units	MDL/PQL	DF	Date Analyzed
% Solids	77	Percent		1	02/01/2001

Test Group Name: Chloride 9250 | Date Prepared: 02/01/200

Analyte	Concentration	Units	MDL/PQL	DF	Date Analyzed
Chloride	ND	mg/kg	65	1	02/06/2001

Lab #: AB23039 | Sample Matrix: Aqueous
Sample ID: SW-4 unfiltered | Date Received: 01/24/2001

Test Group Name: Chloride EPA 325 | Date Prepared:

Analyte	Concentration	Units	MDL/PQL	DF	Date Analyzed
Chloride	50	mg/l	1.8	1	01/31/2001

Lab #: AB23041 | Sample Matrix: Sediment
Sample ID: SD-4 | Date Received: 01/24/2001

Test Group Name: % Solids SM2540G | Date Prepared:

Analyte	Concentration	Units	MDL/PQL	DF	Date Analyzed
% Solids	75	Percent		1	02/01/2001

Test Group Name: Chloride 9250 | Date Prepared: 02/01/200

Analyte	Concentration	Units	MDL/PQL	DF	Date Analyzed
Chloride	ND	mg/kg	67	1	02/06/2001

Veritech Wet Chem Form 1 Summary

Lab #: AB23042

Lab #: AB23042

Sample Matrix: Aqueous

Sample ID: SW-5 unfiltered

Date Received: 01/24/2001

Test Group Name: Chloride EPA 325

Date Prepared:

Analyte	Concentration	Units	MDL/PQL	DF	Date Analyzed
Chloride	40	mg/l	1.8	1	01/31/2001

BLANKS

Lab Name: Veritech Data File Name: W3169B

Lab Code: 14622 Analysis Date: 02/01/2001

Batch: 3169

All Concentration Units in PPM except Mercury in PPB

Analyte	MB 3169 (1)	ICB M-01-BL	CCB	CCB	CCB				M
Aluminum	0.1500000 U	0.1500000 U	0.1500000 U	0.1500000 U	0.1500000 U				P
Antimony	0.0107000 U	0.0107000 U	0.0107000 U	0.0107000 U	0.0107000 U				P
Arsenic	0.0070200 U	0.0070200 U	0.0070200 U	0.0070200 U	0.0070200 U				P
Barium	0.0500000 U	0.0500000 U	0.0500000 U	0.0500000 U	0.0500000 U				P
Beryllium	0.0060000 U	0.0060000 U	0.0060000 U	0.0060000 U	0.0060000 U				P
Calcium	1.0000000 U	1.0000000 U	1.0000000 U	1.0000000 U	1.0000000 U				P
Chromium	0.0500000 U	0.0500000 U	0.0500000 U	0.0500000 U	0.0500000 U				P
Cobalt	0.0150000 U	0.0150000 U	0.0150000 U	0.0150000 U	0.0150000 U				P
Copper	0.0400000 U	0.0400000 U	0.0400000 U	0.0400000 U	0.0400000 U				P
Iron	0.2500000 U	0.2500000 U	0.2500000 U	0.2500000 U	0.2500000 U				P
Lead	0.0080000 U	0.0080000 U	0.0080000 U	0.0080000 U	0.0080000 U				P
Magnesium	0.4000000 U	0.4000000 U	0.4000000 U	0.4000000 U	0.4000000 U				P
Manganese	0.0250000 U	0.0250000 U	0.0250000 U	0.0250000 U	0.0250000 U				P
Nickel	0.0300000 U	0.0300000 U	0.0300000 U	0.0300000 U	0.0300000 U				P
Selenium	0.0300000 U	0.0300000 U	0.0300000 U	0.0300000 U	0.0300000 U				P
Silver	0.0200000 U	0.0200000 U	0.0200000 U	0.0200000 U	0.0200000 U				P
Thallium	0.0080000 U	0.0080000 U	0.0080000 U	0.0080000 U	0.0080000 U				P
Vanadium	0.0150000 U	0.0150000 U	0.0150000 U	0.0150000 U	0.0150000 U				P
Zinc	0.0500000 U	0.0500000 U	0.0500000 U	0.0500000 U	0.0500000 U				P

3
BLANKS

Lab Name: Veritech Data File Name: A3168A

b Code: 14622 Analysis Date: 01/30/2001

Batch: 3169

l Concentration Units in PPM except Mercury in PPB

Analyte	MB 3169 (1)	ICB M-01-EL	CCB	CCB	CCB	CCB	CCB		M
admium	0.0030000 U	0.0030000 U	0.0030000 U	0.0030000 U	0.0030000 U	0.0030000 U	0.0030000 U		P

BLANKS

Lab Name: Veritech Data File Name: W3169Z

Lab Code: 14622 Analysis Date: 2/ 1/01

Batch: 3169

All Concentration Units in PPM except Mercury in PPB

Analyte	MB 3169 (1)	ICB M-00-BL	CCB	CCB	CCB				M
Potassium	2.0000000 U	2.0000000 U	2.0000000 U	2.0000000 U	2.0000000 U				P
Sodium	2.0000000 U	2.0000000 U	2.0000000 U	2.0000000 U	2.0000000 U				P

BLANKS

Lab Name: Veritech Data File Name: H3169sw

[redacted] Code: 14622 Analysis Date: 01/31/2001

Batch: 3169

[redacted] Concentration Units in PPM except Mercury in PPB

Analyte	MB 3169	ICB	CCB	CCB					M
Mercury	0.7000000 U	0.7000000 U	0.7000000 U	0.7000000 U					C

Spike Sample Recovery

Lab Name: Veritech

Data File Name: W3169B

Lab Code: 14622

Analysis Date: 02/01/2001

ICP sample ID: 23032

Batch: 3169

All Concentration Units in PPM except Mercury in PPB

Analyte	Amt Added	QC Limits	23032 Non Spike	23032 MS 1 Matrix Spike 1	23032 MS 2 Matrix Spike 2	Rec1	Rec2		M
Aluminum	5.000	75 - 125	0.1500000 U	4.9590380	4.9677773	99	99		P
Antimony	0.5000	75 - 125	0.0107000 U	0.4772022	0.4755460	95	95		P
Arsenic	0.5000	75 - 125	0.0070200 U	0.4676713	0.4668836	94	93		P
Barium	0.5000	75 - 125	0.1811003	0.6660647	0.6599977	97	96		P
Beryllium	0.5000	75 - 125	0.0060000 U	0.4796751	0.4770121	96	95		P
Calcium	50.000	75 - 125	74.5150507	123.2110470	122.1971980	97	95		P
Chromium	0.5000	75 - 125	0.0500000 U	0.4796984	0.4765702	96	95		P
Cobalt	0.5000	75 - 125	0.0150000 U	0.4900084	0.4869624	98	97		P
Copper	0.5000	75 - 125	0.0400000 U	0.4802117	0.4775073	96	96		P
Iron	5.000	75 - 125	80.0221947	83.3447473	81.8155536	66*	36*		P
Lead	0.5000	75 - 125	0.0080000 U	0.4869334	0.4841694	97	97		P
Magnesium	50.000	75 - 125	24.7978225	72.2669944	71.4582432	95	93		P
Manganese	0.5000	75 - 125	17.2045761	17.4158790	17.2022507	42*	< 0*		P
Nickel	0.5000	75 - 125	0.0300000 U	0.4761011	0.4748552	95	95		P
Selenium	0.5000	75 - 125	0.0300000 U	0.4828129	0.4834053	97	97		P
Silver	0.5000	75 - 125	0.0200000 U	0.4750180	0.4732244	95	95		P
Thallium	0.5000	75 - 125	0.0080000 U	0.4880909	0.4876273	98	98		P
Vanadium	0.5000	75 - 125	0.0150000 U	0.4785645	0.4753837	96	95		P
Zinc	0.5000	75 - 125	0.0500000 U	0.4969162	0.4842523	99	97		P

- Indicates the analyte failed the control limit criteria
- Indicates the analyte was not detected

Spike Sample Recovery

Lab Name: Veritech

Data File Name: A3168A

Lab Code: 14622

Analysis Date: 01/30/2001

ICP sample ID: 23032

Batch: 3169

All Concentration Units in PPM except Mercury in PPB

Analyte	Amt Added	QC Limits	23032 Non Spike	23032 MS 1 Matrix Spike 1	23032 MS 2 Matrix Spike 2	Rec1	Rec2		
Cadmium	0.5000	75 - 125	0.0030000 U	0.4643480	0.4637081	93	93		P

- Indicates the analyte failed the control limit criteria
U - Indicates the analyte was not detected

Spike Sample Recovery

Lab Name: Veritech Data File Name: W3169Z

Lab Code: 14622 Analysis Date: 2/ 1/01

ICP sample ID: 23032 Batch: 3169

All Concentration Units in PPM except Mercury in PPB

Analyte	Amt Added	QC Limits	23032 Non Spike	23032 MS 1 Matrix Spike 1	23032 MS 2 Matrix Spike 2	Rec1	Rec2		
Potassium	50.000	75 - 125	3.2200000	49.7120000	49.6240000	93	93		P
Sodium	50.000	75 - 125	62.5550000	108.6390000	107.8430000	92	91		P

* - Indicates the analyte failed the control limit criteria
U - Indicates the analyte was not detected

Spike Sample Recovery

Lab Name: Veritech

Data File Name: H3169sw

Lab Code: 14622

Analysis Date: 01/31/2001

ICP sample ID: 23032

Batch: 3169

All Concentration Units in PPM except Mercury in PPB

Analyte	Amt Added	QC Limits	23032 Non Spike	23032 MS 1 Matrix Spike 1	23032 MS 2 Matrix Spike 2	Rec1	Rec2	M C
Mercury	10.000	75 - 125	0.0000000 U	8.0974178	8.0809740	81	81	

* - Indicates the analyte failed the control limit criteria
U - Indicates the analyte was not detected

Laboratory Control Sample

Lab Name: Veritech

Data File Name: W3169B

Lab Code: 14622

Analysis Date: 02/01/2001

ICP sample ID: LCSW

Batch: 3169

All Concentration Units in PPM except Mercury in PPB

Analyte	Spike Amount	QC Limits	Found	Rec		M
Aluminum	5.000	75-125	5.0333438	101		P
Antimony	0.5000	75-125	0.4953506	99		P
Arsenic	0.5000	75-125	0.4834715	97		P
Barium	0.5000	75-125	0.5012646	100		P
Beryllium	0.5000	75-125	0.4916258	98		P
Calcium	50.000	75-125	51.0167112	102		P
Chromium	0.5000	75-125	0.4959293	99		P
Cobalt	0.5000	75-125	0.5058701	101		P
Copper	0.5000	75-125	0.4961435	99		P
Iron	5.000	75-125	5.0215064	100		P
Lead	0.5000	75-125	0.5014449	100		P
Magnesium	50.000	75-125	50.2051609	100		P
Manganese	0.5000	75-125	0.4965430	99		P
Nickel	0.5000	75-125	0.4935362	99		P
Selenium	0.5000	75-125	0.4919127	98		P
Silver	0.5000	75-125	0.4888850	98		P
Thallium	0.5000	75-125	0.5057952	101		P
Vanadium	0.5000	75-125	0.4832159	97		P
Zinc	0.5000	75-125	0.4962066	99		P

* - Indicates the analyte failed the control limit criteria
U - Indicates the analyte was not detected

Laboratory Control Sample

Lab Name: Veritech

Data File Name: A3168A

Lab Code: 14622

Analysis Date: 01/30/2001

ICP sample ID: LCSW

Batch: 3169

All Concentration Units in PPM except Mercury in PPB

Analyte	Spike Amount	QC Limits	Found	Rec	M
Cadmium	0.5000	75-125	0.4895839	98	P

* - Indicates the analyte failed the control limit criteria
U - Indicates the analyte was not detected

Laboratory Control Sample

Lab Name: Veritech Data File Name: W3169Z

Lab Code: 14622 Analysis Date: 2/ 1/01

ICP sample ID: LCSW Batch: 3169

All Concentration Units in PPM except Mercury in PPB

Analyte	Spike Amount	QC Limits	Found	Rec		
Potassium	50.000	75-125	48.7590000	98		P
Sodium	50.000	75-125	49.7170000	99		P

* - Indicates the analyte failed the control limit criteria
U - Indicates the analyte was not detected

Laboratory Control Sample

Lab Name: Veritech

Data File Name: H3169sw

Lab Code: 14622

Analysis Date: 01/31/2001

ICP sample ID: LCSW

Batch: 3169

All Concentration Units in PPM except Mercury in PPB

Analyte	Spike Amount	QC Limits	Found	Rec		
Mercury	10.000	75-125	10.5263045	105		M C

* - Indicates the analyte failed the control limit criteria
U - Indicates the analyte was not detected

3
BLANKS

Lab Name: Veritech Data File Name: S3171B

Lab Code: 14622 Analysis Date: 02/02/2001

Batch: 3171

All Concentration Units in PPM except Mercury in PPB

Analyte	MB3171mg/kg	ICB M-01-EL	CCB	CCB	CCB	CCB			M
Antimony	1.4500000 U	0.0145000 U	0.0145000 U	0.0145000 U	0.0145000 U	0.0145000 U			P
Arsenic	2.0000000 U	0.0200000 U	0.0200000 U	0.0200000 U	0.0200000 U	0.0200000 U			P
Barium	10.000000 U	0.1000000 U	0.1000000 U	0.1000000 U	0.1000000 U	0.1000000 U			P
Beryllium	0.4000000 U	0.0040000 U	0.0040000 U	0.0040000 U	0.0040000 U	0.0040000 U			P
Cadmium	0.3000000 U	0.0030000 U	0.0030000 U	0.0030000 U	0.0030000 U	0.0030000 U			P
Chromium	4.0000000 U	0.0400000 U	0.0400000 U	0.0400000 U	0.0400000 U	0.0400000 U			P
Cobalt	1.6500000 U	0.0165000 U	0.0165000 U	0.0165000 U	0.0165000 U	0.0165000 U			P
Copper	3.8000000 U	0.0380000 U	0.0380000 U	0.0380000 U	0.0380000 U	0.0380000 U			P
Lead	5.0000000 U	0.0500000 U	0.0500000 U	0.0500000 U	0.0500000 U	0.0500000 U			P
Manganese	16.200000 U	0.1620000 U	0.1620000 U	0.1620000 U	0.1620000 U	0.1620000 U			P
Nickel	2.4400000 U	0.0244000 U	0.0244000 U	0.0244000 U	0.0244000 U	0.0244000 U			P
Selenium	2.5000000 U	0.0250000 U	0.0250000 U	0.0250000 U	0.0250000 U	0.0250000 U			P
Silver	0.5000000 U	0.0050000 U	0.0050000 U	0.0050000 U	0.0050000 U	0.0050000 U			P
Thallium	1.2000000 U	0.0120000 U	0.0120000 U	0.0120000 U	0.0120000 U	0.0120000 U			P
Vanadium	10.000000 U	0.1000000 U	0.1000000 U	0.1000000 U	0.1000000 U	0.1000000 U			P
Zinc	10.000000 U	0.1000000 U	0.1000000 U	0.1000000 U	0.1000000 U	0.1000000 U			P

3
BLANKS

Lab Name: Veritech Data File Name: S3171Z

Job Code: 14622 Analysis Date: 2/ 2/01

Batch: 3171

All Concentration Units in PPM except Mercury in PPB

Analyte	MB3171mg/kg	ICB M-00-EL	CCB	CCB	CCB	CCB			M
Aluminum	300.00000 U	3.0000000 U	3.0000000 U	3.0000000 U	3.0000000 U	3.0000000 U			P
Calcium	500.00000 U	5.0000000 U	5.0000000 U	5.0000000 U	5.0000000 U	5.0000000 U			P
Iron	300.00000 U	3.0000000 U	3.0000000 U	3.0000000 U	3.0000000 U	3.0000000 U			P
Magnesium	500.00000 U	5.0000000 U	5.0000000 U	5.0000000 U	5.0000000 U	5.0000000 U			P
Potassium	250.00000 U	2.5000000 U	2.5000000 U	2.5000000 U	2.5000000 U	2.5000000 U			P
Sodium	500.00000 U	5.0000000 U	5.0000000 U	5.0000000 U	5.0000000 U	5.0000000 U			P

BLANKS

Lab Name: Veritech Data File Name: M3171S

[redacted] Code: 14622 Analysis Date: 02/02/2001

Batch: 3171

All Concentration Units in PPM except Mercury in PPB

Analyte	MB 3171 Mg/Kg	ICB	CCB						M
Mercury	0.1619500 U	0.0500000 U	0.0500000 U						C

3
BLANKS

Lab Name: Veritech Data File Name: M3171SA

Code: 14622 Analysis Date: 02/02/2001

Batch: 3171

All Concentration Units in PPM except Mercury in PPB

Analyte	ICB	CCB	CCB						M
Mercury	0.0500000 U	0.0500000 U	0.0500000 U						C

Spike Sample Recovery

Lab Name: Veritech

Data File Name: S3171B

Lab Code: 14622

Analysis Date: 02/02/2001

ICP sample ID: 23086

Batch: 3171

All Concentration Units in PPM except Mercury in PPB

Analyte	Amt Added	QC Limits	23086 Non Spike	23087 MS 1 Matrix Spike 1	23088 MS 2 Matrix Spike 2	Rec1	Rec2		M
Antimony	0.5000	75 - 125	0.0200000 U	0.2975658	0.2805416	60*	56*		P
Arsenic	0.5000	75 - 125	0.0362506	0.5013592	0.5037997	93	94		P
Barium	0.5000	75 - 125	0.6852825	0.9971653	1.3422183	62*	131*		P
Beryllium	0.5000	75 - 125	0.0060000 U	0.4807816	0.4739488	96	95		P
Cadmium	0.5000	75 - 125	0.0060000 U	0.4782133	0.4672716	96	93		P
Chromium	0.5000	75 - 125	0.1123623	0.6597129	0.5937410	109	96		P
Cobalt	0.5000	75 - 125	0.0462346	0.5380245	0.5262979	98	96		P
Copper	0.5000	75 - 125	0.3146010	0.7113705	0.8841505	79	114		P
Lead	0.5000	75 - 125	1.2221916	1.4330825	2.1225919	42*	180*		P
Manganese	0.5000	75 - 125	1.6803475	1.8011111	2.1894410	24*	102		P
Nickel	0.5000	75 - 125	0.1007626	0.5797839	0.5691151	96	94		P
Selenium	0.5000	75 - 125	0.0250000 U	0.4733647	0.4650895	95	93		P
Silver	0.5000	75 - 125	0.0250000 U	0.4716580	0.4662730	94	93		P
Thallium	0.5000	75 - 125	0.0120000 U	0.4632317	0.4384940	93	88		P
Vanadium	0.5000	75 - 125	0.1873668	0.6502045	0.6668131	93	96		P
Zinc	0.5000	75 - 125	0.9687978	1.9180168	2.1918663	190*	245*		P

* - Indicates the analyte failed the control limit criteria
U - Indicates the analyte was not detected

Spike Sample Recovery

Lab Name: Veritech

Data File Name: S3171Z

Lab Code: 14622

Analysis Date: 2/ 2/01

ICP sample ID: 23086

Batch: 3171

All Concentration Units in PPM except Mercury in PPB

Analyte	Amt Added	QC Limits	23086 Non Spike	23087 MS 1 Matrix Spike 1	23088 MS 2 Matrix Spike 2	Rec1	Rec2		M
Aluminum	5.000	75 - 125	47.0010000	57.6870000	57.8190000	214*	216*		P
Calcium	50.000	75 - 125	69.6540000	122.4020000	196.9530000	105	255*		P
Iron	5.000	75 - 125	144.1230000	144.7790000	139.8160000	13*	< 0*		P
Magnesium	50.000	75 - 125	33.6930000	69.7100000	97.3490000	72*	127*		P
Potassium	50.000	75 - 125	13.3060000	57.4440000	60.0880000	88	94		P
Sodium	50.000	75 - 125	5.0000000 U	51.9030000	52.3730000	104	105		P

* - Indicates the analyte failed the control limit criteria
U - Indicates the analyte was not detected

Spike Sample Recovery

Lab Name: Veritech

Data File Name: H3171S

Lab Code: 14622

Analysis Date: 02/02/2001

ICP sample ID: 23086

Batch: 3171/3171a

All Concentration Units in PPM except Mercury in PPB

Analyte	Amt Added	QC Limits	23086 Non Spike	23087 MS 1 Matrix Spike 1	23088 MS 2 Matrix Spike 2	Rec1	Rec2		
Mercury	10.000	75 - 125	2.4317794	12.6375213	11.7817092	102	93	M	C

- Indicates the analyte failed the control limit criteria
U - Indicates the analyte was not detected

Laboratory Control Sample

Lab Name: Veritech

Data File Name: S3171B

Lab Code: 14622

Analysis Date: 02/02/2001

ICP sample ID: LCS 100

Batch: 3171

All Concentration Units in PPM except Mercury in PPB

Analyte	Spike Amount	QC Limits		Found	Rec		M
Antimony	32.6	0-	68.1	38.7669920	119		P
Arsenic	185	138-	233	185.9039060	100		P
Barium	177	137-	218	161.6905550	91		P
Beryllium	45.0	35.3-	54.8	46.0756410	102		P
Cadmium	64.0	49.2-	78.7	66.8861670	105		P
Chromium	143	114-	171	143.1028160	100		P
Cobalt	212	168-	255	222.2931740	105		P
Copper	92.7	75.9-	109	91.9265920	99		P
Lead	119	90.9-	148	126.1251700	106		P
Manganese	388	311-	465	383.3298350	99		P
Nickel	74.5	58.3-	90.7	78.3319120	105		P
Selenium	150	111-	188	156.2151590	104		P
Silver	90.0	67.0-	113	90.2842810	100		P
Thallium	80.3	46.0-	115	89.1352890	111		P
Vanadium	173	118-	228	159.3544890	92		P
Zinc	273	211-	335	261.9810170	96		P

* - Indicates the analyte failed the control limit criteria
U - Indicates the analyte was not detected

Laboratory Control Sample

Lab Name: Veritech Data File Name: S3171Z

Lab Code: 14622 Analysis Date: 2/ 2/01

ICP sample ID: LCS 100 Batch: 3171

All Concentration Units in PPM except Mercury in PPB

Analyte	Spike Amount	QC Limits	Found	Rec		M
Aluminum	8270	4200- 12300	4617.7000000	56		P
Calcium	10500	7840- 13200	10735.5000000	102		P
Iron	12700	7470- 17900	9724.6000000	77		P
Magnesium	2750	2070- 3430	2336.4000000	85		P
Potassium	3580	2620- 4540	3008.6000000	84		P
Sodium	1020	692- 1350	1017.6000000	100		P

* - Indicates the analyte failed the control limit criteria
U - Indicates the analyte was not detected

Laboratory Control Sample

Lab Name: Veritech

Data File Name: H3171S

Lab Code: 14622

Analysis Date: 02/02/2001

ICP sample ID: LCS

Batch: 3171

All Concentration Units in PPM except Mercury in PPB

Analyte	Spike Amount	QC Limits	Found	Rec		
Mercury	1490	852- 2120	1236.6105095	83		M C

* - Indicates the analyte failed the control limit criteria
U - Indicates the analyte was not detected

INORGANIC METHOD BLANK SUMMARY

Blank Matrix: Soil
Units: mg/Kg

Analyte	Practical Quant Limit	Batch Number	Method Blank Result
Chloride	50	031s	ND

INORGANIC METHOD BLANK SUMMARY

Blank Matrix: Water
Units: mg/L

Analyte	Practical Quant Limit	Batch Number	Method Blank Result
Chloride	1.8	081w	ND

VERITECH **NJ STATE LAB ID: 14622**

INORGANIC SPIKE SAMPLE RECOVERY

Sample No.: AB23038 MS

Sample Matrix: Soil
Units: mg/Kg

% Solids for Sample: 77

Analyte	Control Limit (%R)	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Added (SA)	%R	Q	M
Chloride	75-125	692		65	U	649	107		
TCN	75-125								
Phenols	75-125								
RCN	75-125								
RS	75-125								
Hex-Cr	75-125								

Comments: __

VERITECH **NJ STATE LAB ID: 14622**

INORGANIC SPIKE SAMPLE RECOVERY

Sample No.: AB23038 MSD

Sample Matrix: Soil
Units: mg/Kg

% Solids for Sample: 77

Analyte	Control Limit (%R)	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Added (SA)	%R	Q	M
Chloride	75-125	692		65	U	649	107		
TCN	75-125								
Phenols	75-125								
RCN	75-125								
RS	75-125								
Hex-Cr	75-125								

Comments: __

VERITECH

NJ STATE LAB ID: 14622

INORGANIC SPIKE SAMPLE RECOVERY

Sample No.: AB23042 MS

Sample Matrix: Water
Units: mg/L

% Solids for Sample: NA

Analyte	Control Limit (%R)	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Added (SA)	%R	Q	M
Chloride	75-125	89.5		39.9		50.0	99		
TCN	75-125								
Phenols	75-125								
RCN	75-125								
RS	75-125								
Hex-Cr	75-125								

Comments: __

INORGANIC SPIKE SAMPLE RECOVERY

Sample No.: AB23042 MSD

Sample Matrix: Water
Units: mg/L

% Solids for Sample: NA

Analyte	Control Limit (%R)	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Added (SA)	%R	Q	M
Chloride	75-125	91.3		39.9		50.0	103		
TCN	75-125								
Phenols	75-125								
RCN	75-125								
RS	75-125								
Hex-Cr	75-125								

Comments: __