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Transmitted Via Federal Express

October 3, 2003

Mr. Martin L. Doster, P.E.
Regional Hazardous Waste Remediation Engineer
Division of Environmental Remediation
New York State Department of Environmental Conservation
270 Michigan Avenue
Buffalo, New York 14203-2999

Re: Groundwater Monitoring Well/Piezometer Installation Report
Bern Metal/Universal Metal Site
Buffalo, New York
BBL Project #: 778.11.005

Dear Mr. Doster:

On behalf of the Cooperating Potentially Responsible Parties (CPRP) Group, Blasland, Bouck & Lee, Inc. (BBL) has prepared this letter to summarize the completion efforts associated with the installation of four new groundwater monitoring wells (i.e., RD-1, RD-2, RD-3, and RD-4) and one new piezometer (i.e., PZ-1) at the Bern Metal/Universal Metal Site (the site) located in Buffalo, New York. The installation of the new groundwater monitoring wells/piezometer was performed by Nothnagle Drilling, Inc., as a subcontractor to and under the supervision of BBL, in accordance with the New York State Department of Environmental Conservation- (NYSDEC-) approved *Operation, Maintenance, and Monitoring* (OMM) *Plan*, which was prepared by BBL (May 2003) and approved by the NYSDEC in a letter to BBL dated June 9, 2003.

The groundwater monitoring well/piezometer installation activities were performed between August 12 and 13, 2003, and the well development activities were performed by BBL on August 22, 2003. The groundwater monitoring well/piezometer installation and development activities are summarized below.

Summary of New Groundwater Monitoring Well/Piezometer Installation Activities

The new groundwater monitoring wells/piezometer were installed at the approximate offsite locations shown on Figure 1 of the OMM Plan. In accordance with the OMM Plan, each monitoring well/piezometer was constructed using the following procedure:

- A drill rig with 4¼-inch-inside-diameter (I.D.) hollow-stem augers was used initially to drill the bore hole. Soil sampling was performed at 2-foot intervals using a 2-inch-diameter stainless steel split-spoon sampler to identify the top of clay surface. The hollow-stem augers were advanced after each 2-foot split-spoon sample was retrieved and logged, until the top of clay was encountered. Completion specifications for each groundwater monitoring well/piezometer

(including well total depth, well screen and sandpack intervals, bentonite seal thickness and interval, and surface seal completion) were determined in the field by BBL based on the materials encountered during the sampling of soil from the boring.

- During the boring activities, the soil drill cuttings were placed in four steel 55-gallon drums, and were staged inside the main gate (located at the end of Bender Avenue) for subsequent waste characterization sampling/analysis and offsite transportation/disposal.

- Each groundwater monitoring well was constructed using 2-inch-diameter Schedule 40 polyvinyl chloride (PVC) flush thread riser pipe and 2-inch-diameter Schedule 40 PVC 0.010-inch slotted well screen (i.e., continuous wrap screen). Piezometer PZ-1 was completed using 1-inch-diameter Schedule 40 PVC riser pipe and well screen (0.010-inch slotted). The well screen length was approximately 5 feet for each groundwater monitoring well/piezometer, with the exception of groundwater monitoring well RD-3, which had a well screen length of approximately 2.5 feet due to the shallow depth of clay at this location.

- Following the installation of the PVC riser pipe and well screen, sandpack (00N Grade Morie) was placed from approximately 6 inches below the bottom of the well screen to a minimum of 1 foot above the well screen.

- Approximately 2 feet of hydrated bentonite chips were placed above the sandpack, with the exception of groundwater monitoring well RD-3, which had approximately 6 inches of hydrated bentonite chips. The hydrated bentonite chips were placed to approximately 1 foot below the ground surface, with the exception of groundwater monitoring well RD-4, which had hydrated bentonite chips between 6 and 8 feet below ground surface, and cement/bentonite grout between 1 and 6 feet below the ground surface.

- An approximately 1-foot-thick concrete surface seal (up to the ground surface) was placed directly over the hydrated bentonite chips in monitoring wells RD-1, RD-2, RD-3, and piezometer PZ-1. The 1-foot-thick concrete surface seal was placed directly over the cement/bentonite grout in monitoring well RD-4. The surface of the pad was tapered to promote drainage away from the groundwater monitoring well/piezometer. Within the concrete surface seal, a steel protective stick-up casing was installed over the groundwater monitoring well/piezometer and extended above the ground approximately 3 feet.

- The PVC riser pipe for each groundwater monitoring well/piezometer was fitted with an expandable plug, and the protective casing was secured with keyed-alike locks.

Upon the completion of the groundwater monitoring well and piezometer installations, BBL prepared a well log for each groundwater monitoring well/piezometer to document the installation dimensions and materials used in construction. A copy of the well log for each groundwater monitoring well and piezometer is included in Attachment 1.

Summary of Groundwater Monitoring Well/Piezometer Development Activities

Upon completion of the groundwater monitoring wells and piezometer installation, the groundwater monitoring wells and piezometer were developed to provide a hydraulic connection between the screened interval of the monitoring wells/piezometer and the shallow aquifer. The monitoring wells and

piezometer were surged by removing 10 to 15 well volumes, with the exception of groundwater monitoring well RW-3, where only seven well volumes were removed due to a low water volume and slow recharge rate in the well. The development activities proceeded until the field parameter testing for turbidity, pH, conductivity, and temperature stabilized and the groundwater monitoring well/piezometer yielded relatively sediment-free water. In addition, water-level and bottom depths inside each groundwater monitoring well/piezometer were measured and documented on each corresponding well log (Attachment 1).

Development water was removed from each groundwater monitoring well/piezometer and was placed in one 55-gallon drum, which was staged inside the facility main gate for subsequent waste characterization sampling/analysis and offsite transportation/disposal.

Summary

The installation and development of the groundwater monitoring wells and piezometer are now complete, and are ready for the City of Buffalo to survey the well/piezometer locations/elevations and to commence groundwater sampling activities. Waste characterization samples were collected by BBL from the five 55-gallon drums of soil drill cuttings and development water on October 3, 2003. Based on the analytical results of the waste characterization, BBL, on behalf of the CPRP Group, will coordinate the offsite transportation and disposal of the drums.

If you have any questions please call me at (585) 292-6740, ext. 12.

Sincerely,

BLASLAND, BOUCK & LEE, INC.

Joseph Molina III, P.E.
Associate

JM/mey
Enclosure

cc: Mr. Jaspal Walia, P.E., New York State Department of Environmental Conservation
R. Hugh Stephens, Esq., Stephens & Stephens, LLP
Robert Glanville, Esq., Phillips, Lytle, Hitchcock, Blaine & Huber
David Flynn, Esq., Phillips, Lytle, Hitchcock, Blaine & Huber
Seth Davis, Esq., Huber, Lawrence & Abell
Richard Stanton, Esq., City of Buffalo
Brenda Joyce, Esq., Jaeckle, Fleischman & Mugel, LLP
Ms. Maria Kaouris, Honeywell
Ms. Tanya Alexander, National Fuel Gas
Mr. Joseph M. Simone, P.E., New York State Electric and Gas Corporation
Mr. Edward E. Peterson, General Motors Corporation
Mr. Dennis Sutton, City of Buffalo
Mr. William B. Popham, Blasland, Bouck & Lee, Inc.

Date Start/Finish: 08/12/03
Drilling Company: Nothnagle Drilling Inc.
Driller's Name: Kevin Busch
Drilling Method: Hollow Stem Auger
Bit Size: NA
Auger Size: 4-1/4" ID
Rig Type: BK-81
Sampling Method: 2' x 2-inch Split Spoon

Northing:
Easting:
Casing Elevation:

Borehole Depth: 10.0 ft.
Surface Elevation:

Geologist: Shawn P. Skelly

Well/Boring ID: RD-1
Client: Bern Metals / Universal Metals

Location: Buffalo, New York

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blows / 6 Inches	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Piezometer Construction
0	0	S-1	0-2'	1.9'	2 6 12 12	18	0.0		Brown, SILT, some fine Sand, little Organics (roots and twigs). Brown, fine to medium SAND, dry.	Locking protective casing (3.20' - 0).
									Brown, SILT, little fine to medium Sand and little Gravel, dry.	Concrete surface seal (0 - 1.1' bgs).
		S-2	2'-4'	1.4'	6 8 9 9	17	0.0		Dark brown/black, FILL Material: Brick fragments, cinders, ash, Silt, Sand, and Gravel, dry.	Bentonite Seal (1.1' - 3.0' bgs).
5	-5	S-3	4'-6'	1.6'	3 5 5 6	10	0.0		Brown, Silty CLAY, some fine Gravel, trace Ash and Cinders, damp.	2-inch dia. Sch. 40 PVC flush thread riser (2.85' ags - 4.0' bgs).
		S-4	6'-8'	0.9'	4 4 3 2	7	0.0		Gray/brown, fine to coarse SAND and fine GRAVEL, wet.	ØØN Sand Pack (3.0' - 10.0' bgs).
									Gray/brown, CLAY, little Silt, wet.	2-inch dia. Sch. 40 PVC 0.010-inch continuous slot Well Screen (4.0' - 9.0' bgs).
		S-5	8'-10'	2.0'	1 1 3 6	4	0.0		Gray/brown, CLAY, wet.	
10	-10									

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Remarks:
NA: Not applicable.

Water Level Data

Date	Depth	Elev.
08/22/03	9.00'	

Depth measured from top of casing

Project: 77811
Data File: RD-1

Template:
Date: 08/27/03

Date Start/Finish: 08/12/03
Drilling Company: Nothnagle Drilling Inc.
Driller's Name: Kevin Busch
Drilling Method: Hollow Stem Auger
Bit Size: NA
Auger Size: 4-1/4" ID
Rig Type: BK-81
Sampling Method: 2' x 2-inch Split Spoon

Northing:
Easting:
Casing Elevation:

Borehole Depth: 10.0 ft.
Surface Elevation:

Geologist: Shawn P. Skelly

Well/Boring ID: RD-2

Client: Bern Metals / Universal Metals

Location: Buffalo, New York

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blows / 6 Inches	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Piezometer Construction
0	0	S-1	0-2'	1.6'	1 3 5 6	8	0.0		Brown, SILT and fine SAND, trace fine Gravel, trace Organics (roots), dry.	Locking protective casing (3.20' ags - 0). Concrete surface seal (0 - 1.0' bgs).
		S-2	2'-4'	1.6'	6 10 10 9	20	0.0		Same as above, except no Organics.	Bentonite Seal (1.0' - 3.0' bgs). 2-inch dia. Sch. 40 PVC flush thread riser (2.9' ags - 4.0' bgs).
5	-5	S-3	4'-6'	1.3'	1 1 WH 1	NA	0.0		Brown, SILT and fine SAND, trace fine Gravel, wet.	ØØN Sand Pack (3.0' - 10.0' bgs).
		S-4	6'-8'	1.8'	1 3 3 4	6	0.0		Dark brown/black, FILL Material: Silt, Sand, fine Gravel, Ash, Cinders; wet.	2-inch dia. Sch. 40 PVC 0.010-inch continuous slot Well Screen (4.0' - 9.0' bgs).
		S-5	8'-10'	1.5'	3 8 6 13	14	0.0		Brown, CLAY, trace fine Gravel, wet. Brown, CLAY, trace gray mottling, wet.	
10	-10									

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Remarks:
NA: Not applicable.
WH: Weight of Hammer

Water Level Data

Date	Depth	Elev.
08/22/03	8.91'	

Depth measured from top of casing

Project: 77811
Data File: RD-2
Template:
Date: 08/27/03

Date Start/Finish: 08/12/03
Drilling Company: Nothnagle Drilling Inc.
Driller's Name: Kevin Busch
Drilling Method: Hollow Stem Auger
Bit Size: NA
Auger Size: 4-1/4" ID
Rig Type: BK-81
Sampling Method: 2' x 2-inch Split Spoon

Northing:
Easting:
Casing Elevation:

Borehole Depth: 8.0 ft.
Surface Elevation:

Geologist: Shawn P. Skelly

Well/Boring ID: RD-3

Client: Bern Metals / Universal Metals

Location: Buffalo, New York

DEPTH / ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blows / 6 Inches	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Piezometer Construction
0									Locking protective casing (3.10' ags - 0).
0	S-1	0-2'	1.5'	1 2 10 4	11	0.0		Brown/tan, fine to medium SAND, trace Organics, dry.	Concrete surface seal (0 - 1.0' bgs).
								Brown, fine to medium SAND, some fine Gravel, little Silt, dry.	Bentonite Seal (1.0' - 1.5' bgs).
	S-2	2'-4'	1.7'	6 5 5 6	10	0.0		Brown Silty CLAY, some to little fine Gravel and coarse Sand, dry.	2-inch dia. Sch. 40 PVC flush thread riser (2.65' ags - 2.35' bgs).
5	S-3	4'-6'	1.8'	6 6 8 13	14	0.0		Brown, CLAY, little Silt, trace gray mottling.	2-inch dia. Sch. 40 PVC 0.010-inch continuous slot Well Screen (2.35' - 4.85' bgs).
	S-4	6'-8'	1.7'	12 20 20 18	14	0.0		Brown, CLAY, dry.	ØØN Sand Pack (1.5' - 8.0' bgs).

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Remarks:
NA: Not applicable.

Water Level Data

Date	Depth	Elev.
08/22/03	4.34'	

Depth measured from top of casing

Project: 77811
Data File: RD-3

Template:
Date: 08/27/03

Date Start/Finish: 08/13/03
Drilling Company: Nothnagle Drilling Inc.
Driller's Name: Kevin Busch
Drilling Method: Hollow Stem Auger
Bit Size: NA
Auger Size: 4-1/4" ID
Rig Type: BK-81
Sampling Method: 2' x 2-inch Split Spoon

Northing:
Easting:
Casing Elevation:

Borehole Depth: 16.0 ft.
Surface Elevation:

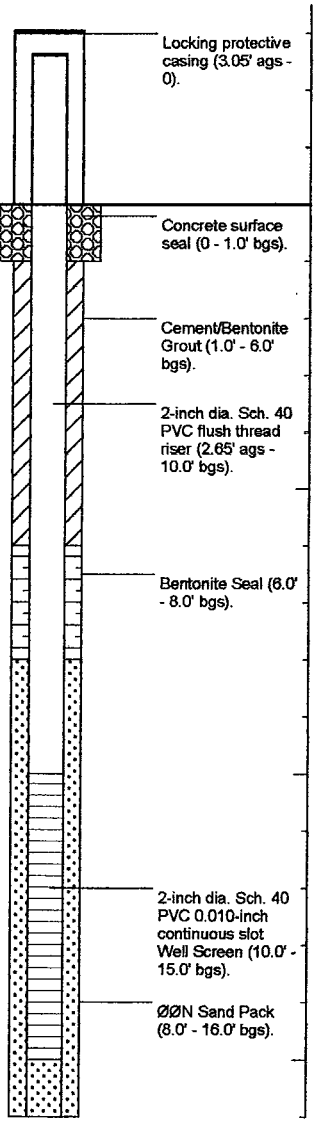
Geologist: Shawn P. Skelly

Well/Boring ID: RD-4

Client: Bern Metals / Universal Metals

Location: Buffalo, New York

DEPTH / ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blows / 6 Inches	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description
0 / 0	S-1	0-2'	1.9	1 3 6 8	9	0.0		Brown, SILT, some fine Sand, trace Gravel, trace Organics (roots).
	S-2	2'-4'	1.2	7 7 7 6	14	0.0		Brown, SILT and fine SAND, dry. Brown, SILT and fine SAND, little to some fine Gravel, damp.
5 / -5	S-3	4'-6'	0.5	4 3 4 4	7	0.0		Brown, SILT, some Clay, little fine Sand, trace fine Gravel, damp. Gravel lodged in tip of spoon.
	S-4	6'-8'	2.0	3 4 3 3	7	0.0		Brown, Sitly CLAY, little fine Gravel, wet.
	S-5	8'-10'	2.0	2 1 4 3	5	0.0		Brown, CLAY, little Silt, trace gray mottling, wet. Dark brown, FILL Material: Silt, Gravel, Glass fragments, Brick fragments, Clay; wet.
10 / -10	S-6	10'-12'	2.0	2 2 2 2	4	0.0		Dark gray/brown, Silty CLAY, trace fine Sand, wet. Dark gray/brown, Silty CLAY, wet.
	S-7	12'-14'	2.0	3 4 4 5	8	0.0		Dark gray, Silty CLAY, wet.
15 / -15	S-8	14'-16'	2.0	WH WH 3 4	NA	0.0		Gray, CLAY, wet.



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Remarks:
NA: Not applicable.
WH: Weight of Hammer

Water Level Data

Date	Depth	Elev.
08/22/03	8.60'	

Depth measured from top of casing

Date Start/Finish: 08/12/03
Drilling Company: Nothnagle Drilling Inc.
Driller's Name: Kevin Busch
Drilling Method: Hollow Stem Auger
Bit Size: NA
Auger Size: 4-1/4" ID
Rig Type: BK-81
Sampling Method: 2' x 2-inch Split Spoon

Northing:
Easting:
Casing Elevation:

Borehole Depth: 10.0 ft.
Surface Elevation:

Geologist: Shawn P. Skelly

Well/Boring ID: PZ-1

Client: Bern Metals / Universal Metals

Location: Buffalo, New York

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blows / 6 Inches	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Piezometer Construction
0	0	S-1	0-2'	1.5'	4 2 6 6	8	0.0		Gray, fine to medium GRAVEL, dry. Brown, fine to medium SAND, some fine Gravel, damp.	Locking protective casing (3.1' ags - 0). Concrete surface seal (0 - 1.0' bgs).
		S-2	2'-4'	1.6'	7 7 6 6	13	0.0		Brown, Silty CLAY, little fine Gravel and little fine to medium Sand, damp.	Bentonite Seal (1.0' - 2.9' bgs). 1-inch dia. Sch. 40 PVC flush thread riser (2.75' ags - 4.0' bgs).
-5	-5	S-3	4'-6'	1.4'	3 2 2 2	4	0.0		Dark brown, SILT, some fine Sand, some to little fine Gravel, little Clay and little Ash, damp to wet.	ØØN Sand Pack (2.9' - 10.0' bgs).
		S-4	6'-8'	1.4'	2 3 5 8	8	0.0		Brown, CLAY, some fine Gravel, little Silt, little gray mottling, wet.	1-inch dia. Sch. 40 PVC 0.010-inch continuous slot Well Screen (4.0' - 9.0' bgs).
		S-5	8'-10'	1.8'	5 8 14 14	22	0.0		Brown, CLAY, wet.	
-10	-10									

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Remarks:
NA: Not applicable.

Water Level Data

Date	Depth	Elev.
08/22/03	6.93'	

Depth measured from top of casing

Project: 77811
Data File: PZ-1

Template:
Date: 08/27/03