MALCOLM PIRNIE

pH Monitoring Log and ECDEP Correspondence

APPENDIX

D

P.H. Monitoring

Date	Time	Location	Result	Comments
3.4.04	9:00 AM	I-16	No water	
	9:30	I-15	"	
	9:45	I-14	"	
	10:00	I-13	"	
	2:00pm	I-12	"	
		I-11	"	
		I-10	"	
		I-9	"	
		I-8	"	
		I-7	"	
		I-6	"	
		I-5	"	
		I-4	"	
		I-3	7.8	
3.5.04	9:00 Am	G-19	11.5	
	9:15	G-19	11.5	
	9:30	G.5-19	11.6	
	9:45	H-19	11.5	
	10:00	H.5-19	11.4	
	10:15	I-19	11.5	
	10:30	I.5-19	11.6	
	10:45	J-19	11.4	
	11:00	J-18.5	11.5	
	11:15	J-18	11.3	
	11:30	J-17.5	11.3	
	11:45	J-17	11.4	
	12:00	J-16	11.5	
	11:30	H-18	No water	
	"	H-17	"	
	"	H-16	"	
	"	H-15	"	

P.H. Monitoring

Date	Time	Location	Result	Comments
	11:30	H-14	"	
	"	H-13	"	
	"	H-12	"	
	"	H-11	"	
	"	H-10	"	
	"	H-9	"	
	"	H-8	"	
	"	H-7	"	
	"	H-6	"	
	"	H-5	"	
	"	H-4	"	
	11:30	H-3	7.9	
3-12-04	10:15	silo pad Hole #2 EAST side of Bldg.	8.4	
	10:30	J-0.0	8.8	
	1:00	silo pad Hole #4 EAST side	7.3	
3:12:04	1:00 Work	STOPED DUE	TO WEATHER	
3-15-04	9:00	NO NEW	open holes w/	water
	9:45	C.7/1.3	8.1	water pumped TO surface
	10:00	"	8.0	"
	10:15	"	7.4	"
	10:30	"	7.9	"
	10:45	"	7.9	"
	11:00	"	7.7	"
	11:15	"	7.8	"
	11:30	"	7.8	"
	9:45-11:30	C.7/1.0 → C/0.0	NO WATER	—
	9:45-11:30	C.7/0.0 → E/0.0	" "	
	12:30	E/0.0 - E.5/0.0	9.0	
	1:30	" "	9.3	
	1:30	H3	7.8	water pumped to surface
	2:15	E/0.0 - E.5/0.0	9.0	

1cc

P.H. Monitoring

Date	Time	Location	Result	Comments
3.15.04	2:30	E/0.0 - E.5/0.0	8.0	Excavation Completed for The Day
3.16.04	9:00	G/0.0	11.3	Water on Top of Footings
3.16.04	9:00	F.5/0.0	12.0	"
"	9:15	E.5/0.0	12.5	"
"	9:15	D/0.0	12.1	"
"	9:30	C.7/1.3	10.8	Water Next To End of Footings
"	9:30	G3	NO water	
"	9:45	G4	"	
"	10:00	G5	"	
"	10:15	G6	"	
"	10:30	G7	"	END of Dig. For Today
3.17.04	10:45	G8→G18	NO water	Slalom Piers
"	2:00	F18→F13	NO water	End of Dig
3.17.04	11:00	C.7/1.3	10.8	Water over new Footings
	11:15	C.7/0.0	11.5	"
	11:30	E/0.0	8.6	"
	11:45	E.5/0.0	10.5	"
	11:45	F/0.0	9.1	"
3.17.04	12:00	J/19	11.6	"
	12:15	J/17	11.2	"
3.18.04	8:45	F/0.0	11.6	"
		E.5/0.0	11.9	"
	9:00	E/0.0	12.0	"
		C.7/0.0	11.1	"
		C.7/1.3	9.4	"
	9:30	F12, F11, F10, F9	NO water	Int. Piers
		F7→F3	" "	"
		F8	11.2	"
3.18.04		F11	9.6	"

KC

P.H. Monitoring

Date	Time	Location	Result	Comments
3.19.04	8:30	G/0.0	10.9	Pumped TO Tank
	9:45	E/0.0	11.4	Pumped TO Tank
	9:50	C.7/1.3	9.1	Pumped TO Tank
3.19.04	11:00	E8 → E18	NO WATER	—
"	2:00	D18 & D16	NO WATER	—
"	10:00	tank	10.1	Stored in Tank-NOT released
"	2:15	D15	11.0	trench Pour
"	2:20	D17	11.1	trench Pour
"	225	D14, 13	NO WATER	
3.22.04	8:30	C.7/0.0	7.6	WATER on Footer
		E/0.0	8.3	"
		G/0.0	7.3	"
	10:00	H/0.0	11.3	Footer Pour - WATER pumped TO Tank
		I/0.0	10.6	Footer pour - WATER pumped TO Tank
	10:30	2000gal Tank	11.5	WATER DISCHARGED TO SEWER DIST. #6 From 2:45-4:30pm AS PER written agreement
	—	—		
	10:30	P13 → P3	NO WATER	Piers
3.23.04	8:15	I/0.0	10	WATER on Footer Pumped TO Tank
		H/0.0	12.1	" " " "
	9:00	2K gal tank	11.7	Discharged TO SEWER DIST #6 From 9:04 → 9:34 1800 gal
	9:30	2K gal tank	11.7	Discharged TO SEWER DIST 6 From 9:37 TO 4:15
	10:00	C9 → C3	NO Water	Pier's
	2:00	B15 → B8	" "	" "
	1:00	2K gal Tank	10.2	Discharged SEWER DIST #6 1:16 TO 2:29
3.30.04	10:00	J17	10.3	Discharged TO SEWER AUTH
	10:00	H19	10.4	"
	2:00	J17	10.3	"
	2:00	H19	11.2	"
3.31.04	9:00	C/1.3	NO WATER	—
	10:15	C/2	NO WATER	—
	10:30	B/2	6.8	Discharged TO ground

P.H. Monitoring

Date	Time	Location	Result	Comments
3·3·04	11:00	J19	7.3	to Tank
3·3·04	11:15	J17	10.7	To Tank
	1:00	B2	6.3	To ground
	1:30	B2	6.2	To ground
4·1·04	9:15	B2	7.7	
	9:45	I5	11.1	To Tank
4·5·04	10:00	C1.3	8.4	To ground
	10:15	J14	11.5	To Tank
4·6·04	10:15	J14	11.6	To Tanks
	11:00	I.5/0.0	9.2	
4.2.04				
4.8.04				
4.9.04				
4.12.04				
4.13.04				
4.14.04				
4.15.04				
4.16.04				
4.19.04				
4.20.04				
4.21.04	2:30	A3/5	10.3	
4.21.04	2:40	A3/5	10.6	
4.22.04				
4.23.04				
4.24.04	Site excavation done on Sat. by RE. Lorenz No SSO, or monitor present			
As	of 4.23.04 We are no longer allowed to			
	discharge water to the sewer authority			
	All waters being discharged directly to ground			
4.26.04				
4.27.04				
4.29.04				

P.H. Monitoring

Date	Time	Location	Result	Comments
4.29.04	945	A.3/7	11.9	Pumped To ground
4.30.04		NO Monitoring done		
5.3.04	10:15	A/12	11.7	Pumped To ground
5.3.04	12:45	A/15	11.8	pumped TO ground
5.4.04	11:15	A/15	12.1	pumped TO ground
5.5.04		None Taken		
5.6.04	9:00	B/16	12.4	pumped TO ground
5.7.04	8:10	A/15	11.9	
5/7	2:00 pm			
5.8.04				
5.10.04	7:30	B/16	11.7	pumped TO ground
5.11.04	7:30	E/16	11.9	pumped TO ground
5.12.04	7:40	G/16	11.3	pumped TO ground
5-13 04	9:00	G/19	11.9	Pumped to ground
5.14.04	8:10	H/19	11.9	Pumped to truck
5.17.04	8:20	G.5/19	11.5	Pumped to ground
5.18.04	7:40	F/19	11.6	water treated and pump to the ground Pumped to tanks
5.19.04	8:15	D/19	11.9	water treated and pump to ground Pumped to tanks
5.20.04	9:40	G/19	12.1	Water pumped to tanks and treated water pumped to ground
5.21.04	8:40	Retaining Wall	8.7	TREATED WATER IN TANKS, pumped to ground
5.24.04	9:30	Retaining Wall	8.6	
5.25.04	10:05	F/19	10.9	
5.26.04	8:30	Silo Pad east side of build.	11.3	
5.27.04	10:15	Silo Pad east	11.0	Pump water to tanks WEST.
5.28.04	7:15	Retaining Wall east	8.9	
6.1.04	8:30	Silo Pad East	9.4	
6.2.04	9:10	Silo Pad (East)	10.7	Pump water to ground
6.3.04	7:50AM	Silo Pad	11.4	
6.4.04	8:30 AM	Silo Pad	11.3	
6.7.04	8:40AM	Silo Pad	10.8	
6.8.04	8:20 AM	Load Dock (west)	9.6	No water being pumped

P.H. Monitoring

Date	Time	Location	Result	Comments
6·9·04	9:30 AM	Northwest Corn.	12.1	Pump water to tanks
6·10·04	8:10 AM	J/9	10.9	Pump to regrind pit
6·11·04	7:05AM	H/7	10.5	Pump to tanks
6·14·04	7:25AM	H/9	10.6	
6·15·04	8:10AM	I/0.0	8.6	Pump to ground
6·16·04	8:15AM	H.5/00	8.7	Pump to ground
6·17·04	8:20AM	H/1	10.5	Pump to ground
6·18·04	7:55AM	I/0.0	10.1	Pump to load Dock
6·21·04	8:10AM	D/7	9.8	" "
6·22·04	10:00AM	C/5	9.5	Pump to load dock
6·23·04	8·10AM	C/5	9.3	NO water being pumped
6·24·04	8:15 AM	Loading Dock east	8.5	No water being pumped
6·25·04	8:10 AM	" "	7.9	no water being pumped
6·28·04	8:15AM	Loading Dock - East	7.6	No water being pumped
6·29·04	8:30AM	E/0.0	8.0	Pumped to load dock
6·30·04	7:55 AM	Loading Dock (N east)	8.1	no water being pumped
7·1·04	7:15AM	" "	8.2	no water being pumped
7·6·04	8:30 AM	Loading Dock	8.4	" " "
7·7·04	8:15AM	Loading Dock	8.6	No water being pumped
7·8·04	8:10 AM	East Load dock	7.9	No water being Pumped
7·9·04	8:10 AM	C/18 (Northwest Corner)	11.6	Pump water to west load dock
7/12/04	8:15 AM	East Load Dock	7.8	No water being pumped
7/13/04	9:30AM	" "	8.4	" " "
7/14/04	10:05AM	Load Dock east	8.5	NO water being Pumped
7/15/04	8:20AM	Load Dock East	8.5	No water being pumped
7/19/04	8:15AM	WEST LOAD DOCKS	9.1	No water being pumped
7/20/04	9:40 AM	Regrind pit	9.4	no water being pumped
7/21/04	8:10AM	East load Dock	8.0	" "
7/22/04	8:10AM	" "	7.8	water being pumped to truck to water Down Site
7/23/04	9:00AM	East load Dock	7.7	" "
7/26/04	9:10 AM	" "	7.9	no water being pumped

as of 11:00 water being pumped to trucks to dust down Job site

P.H. Monitoring

As of 7/30/04 Permission to pump water into retention Ponds

Date	Time	Location	Result	Comments
7/27/04	8:45AM	West load Docks	9.3	no water being pumped
7/28/04	9:25AM	East load Dock	7.7	Pumping out load Dock, water legs to pump & gradual
7/29/04	9:15 AM	East load Dock	8.3	no water pumped to
7/30/04	8:15AM	" "	8.1	
8/2/04	9:20 AM	West load Docks	8.6	no water being pumped at this time
8/2/04	11:50 AM	East load Dock	8.2	water pumped to water truck to dust
8/3/04	9:25AM	West load Docks	9.1	Pumping water to retention Pond down Job.
8/4/04	8:20AM	E. Load Dock	7.9	no water pumped
8/5/04	9:20AM	West load Docks	9.3	pumping water to retention pond
8/6/04	8:10 AM	West load Dock	10.8	pumping water to retention Pond
8/9/04	8:25AM	regrind pit	9.8	pumping water to retention pond
8/10/04	9:15 AM	L. Dock East	8.5	no water pumped to truck
8/11/04	9:00AM	" "	8.7	" "
8/12/04	8:00AM	L. Dock East	7.5	
8/13/04	8:00AM	L. Dock East	8.4	
8/16/04	8:15AM	L. Dock West	10.0	Water being pumped to retention pond
8/16/04	1:00PM	L. Dock East	8.5	Watering down Job site, watertruc
8/17/04	11:30AM	North west corner of Jobsite	11.7	Pumping water to retention pond
8/18/04	8:00AM	" "	11.5	" "
8/19/04	8:55AM	" "	11.6	" "
8/20/04	8:10 AM	" "	11.6	" "
8/23/04	8:15 AM	" "	11.7	" "
8/24/04	9:10am	" "	11.5	" "
8/25/04	8:20AM	C/18	11.5	" "
8/26/04	9:10AM	A/16 (EXT.)	11.5	" "
8/27/04	11:40AM	A/12 (Ext.)	11.6	" "
8/31/04	8:10AM	A/10	11.6	" "
9/1/04	8:55AM	A/14	11.5	" "
9/2/04	9:25AM	Load Dock West	11.4	No water being pumped at this time
9/3/04	8:05AM	Southeast Corner	11.8	Water being pumped to Retent. pond
9/7/04	9:15 AM	D:5/0.0	7.5	Water being pumped to load Dock

(Legal to pump on ground pumping water to truck to dust down Job site

P.H. Monitoring

Date	Time	Location	Result	Comments
9/8/04	9:05 AM	Northeast corner	7.9	Pumping water to rentention pond
9/9/04	no	ph reading taken, flooding + pouring rain.		
9/10/04	9:20 AM	Load Dock east	7.6	no water being pumped no intrusive work
9/13/04	9:00AM	north driveway	7.6	water being pumped to retention pond
9/14/04	9:20AM	" "	8.1	" " "
9/16/04	9:15 AM	A/16	11.3	" " "
9/17/04	9:40AM	Northwest corner	11.5	" " "
9/20/04	9:50AM	West driveway	11.3	Pumping to load Dock
9/21/04	8:15 AM	South west driveway	11.3	" "
9/22/04	9:30 AM	" "	11.2	" "
9/23/04	8:45AM	West driveway	11.5	" " "
9/24/04	9:10AM	Northwest corner	11.2	Pumping water to rentention
9/27/04	9:20AM	North west retention Pond	11.5	No intrusive work being done
9/28/04	10:20AM	" "	11.5	" "
9/29/04		no water being pumped no reading taken, no intrusive work.		
9/29/04	11:00AM	East Birm/ rear rail road)	10.7	Water being pumped to retention pond
10/1/04	9:30AM	" "	7.3	using Water to dust down, Drive ways
10/4/04	10:00AM	West loading Docks	11.4	Pumping water to retention pond
10/5/04	10:45AM	" "	11.4	" "
10/6/04	9:00AM	" "	11.5	" "
10/7/04		no water being pumped, no intrusive work, no PH reading taken		
10/8/04	9.05AM	North west corner of Jobsite	11.5	Pumping water to retention Pond
10/11/04	9.45AM	" "	11.5	" "
10/14/04	8:10AM	" "	11.7	" "
10/15/04	10:30AM	no water being pumped at this time		
10/18/04	10:00AM	North driveway	10.8	very minimal water, no water being pumped
10/19/04	no water in trench no reading taken.			
10/20/04	"		"	
10/21/04	9:10 AM	North west corner	11.4	Water being Pumped to Retention Pond
10/22/04	10:10AM	South west corner	11.4	" "
10/25/04	9:50AM	" "	11.3	" "

P.H. Monitoring

Date	Time	Location	Result	Comments
10/26/04	10:00AM	Southwest corner (diagonal east)	11.2	minimal water, no water being pumped
10/27/04	11:00AM	middle of South Parking lot	8.4	no water being pumped
10/28/04	10:25AM	Northeast corner	8.3	water being pumped to load dock
10/29/04	9:40AM	No water in trench, no reading		taken
11/1/04	9:45AM	Pump house	12.2	MINIMAL WATER. NO WATER BEING PUMPED
11/2/04	11:50AM	Near Pumphouse	—	no reading taken, Zero Water in trench
11/3/04	9:40AM	" "	—	" "
11/4/04	9:00AM	midde of South Parking lot	—	no reading taken, no water in trench
11/5/04	9:40 Am	" "	—	" "
11/8/04	1:45 PM	West driveway	11.5	no water pumped -
11/9/04		no water in trench, no reading taken.		
11/10/04		no water in trench no reading taken		
11/11/04		"		"
11/12/04		"		"
		Intrusive work complete, No longer testing PH		

County of Erie
JOEL A. GIAMBRA
COUNTY EXECUTIVE

DEPARTMENT OF ENVIRONMENT & PLANNING

LAURENCE K. RUBIN
COMMISSIONER

March 19, 2004

Mr. Peter Krog, P.E.
The Krog Corporation
4 Centre Drive
Orchard Park, New York 14127

RE: Erie County Sewer District No. 6
Certainteed Facility – Groundwater Discharge

Dear Mr. Krog:

The Division of Sewerage Management has reviewed your letter regarding the Certainteed project at Lakeside Commerce Park. Your letter addresses the groundwater encountered during excavation and the potential discharge of this water to the Erie County Sewer District No. 6 sanitary sewer. As reported, the groundwater has a pH of approximately 10.

As we discussed earlier today, the groundwater is being collected in a 4000-gallon tank. The tank will be moved to the designated discharge point where it will be discharged to sanitary sewer. The pH of the water in the tank will be tested prior to discharging. The excavation is estimated for a period of approximately six weeks.

Approval for this discharge is subject to the following conditions:

1) Notification to the Lackawanna Treatment Plant shall be made at least twenty-four hours prior to discharge (tel. 823-5800).

2) The initial discharge rate shall not exceed 25 gallons per minute for the first eight hours of discharge. If there are no detrimental effects to the collection system, a higher flow rate may be requested.

3) A Sewer District representative shall be present upon initiation of discharge.

4) The approved discharge point for the project is manhole #1211, located adjacent to the Commerce Park Pump Station.

5) Discharge shall take place between the hours of 8 A.M. and 4 P.M. Monday through Friday.

6) Provisions for preventing any mud and/or grit from being pumped into the sewer must be in place.

7) The pH of the discharge water shall not exceed 12.

8) Any groundwater that displays a sheen requires treatment prior to discharge.

9) Should a problem arise in the collection system during the discharge, the District may require that operations cease. Andy Metzger was reported as the project's site contact for Krog (tel. 583-2801).

10) The discharge to the sanitary sewer shall be metered and recorded by the contractor for review by this office. The fee for discharging to the sanitary sewer is $1.92/ 1000 gallons discharged. As per our conversation, the cost of the discharge is billable to the Krog Corporation.

11) Discharge will be allowed only during the construction period, not to exceed three months. Long term discharge of groundwater is not acceptable.

Please call me at 858-8756 if you have additional questions or concerns.

Very truly yours,

Nicole J. Elliott
Industrial Wastewater Specialist

NJE:dd
Cc: G. Devlin/N. Elliott/6.2.4.3
G. Absolom
J. Balcarczyk/J. Kaszubowski

ne/3110

Copy: Kent McManus, PE

County of Erie

JOEL A. GIAMBRA
COUNTY EXECUTIVE

DEPARTMENT OF ENVIRONMENT & PLANNING

LAURENCE K. RUBIN
COMMISSIONER

CHARLES J. ALESSI, P.E.
DEPUTY COMMISSIONER
Sewerage Management

FACSIMILE COVER SHEET

DATE: 3/19/04

TIME: 2:00PM

NUMBER OF PAGES TO FOLLOW 2

TO:

NAME: PETER KROG

LOCATION: THE KROG CORP

FAX PHONE NUMBER: 667-1234

FROM:

NAME: Nicole J. Elliott, Industrial Wastewater Specialist
Erie County Department of Environment & Planning/

LOCATION: Division of Sewerage Management

PHONE NUMBER: 716 858-8756 FAX NUMBER: 716 858-6257

SPECIAL INSTRUCTIONS: The treatment plant will not accept the discharge until Monday. I suggest a call to the plant today to confirm. Tim Kaszuboski @ 823-5800.

Nicole

Kaszuboj c erie.gov

New York State Department of Environmental Conservation
Division of Environmental Remediation, Region 9
270 Michigan Avenue, Buffalo, New York, 14203-2999
Phone: (716) 851-7220 • **FAX:** (716) 851-7226
Website: www.dec.state.ny.us

Erin M. Crotty
Commissioner

June 14, 2004

Kent McManus, P.E.
Malcolm Pirnie, Inc.
P.O. Box 1938
Buffalo, New York 14219-0138

Dear Mr. McManus:

Buffalo Lakeside Commerce Park,
Site #C915185 (Krog/Certain Teed Project)
Buffalo , Erie County

I spoke with the Erie County Department of Environment and Planning regarding your June 8 request for a waiver from the requirement to treat groundwater with elevated pH on the subject site. It is my understanding that ECDEP is willing to work with your client to resolve the capacity issues and allow discharge of the groundwater to Erie County Sewer District Number 6.

It is the Department's intent to have groundwater exhibiting impacts from elevated pH to be treated where feasible. Please keep me informed regarding resolution of this matter with Erie County.

Sincerely,

David P. Locey
Environmental Engineer I

DPL/tml

cc: Mr. Gerald Mikol, NYSDEC
Mr. Martin Doster, NYSDEC
Mr. Peter Krog, Krog Corp
Mr. Thomas Whetham, ECDEP
Mr. Nicole Elliot, ECDEP
Mr. Peter Cammarata, ECIDA

New York State Department of Environmental Conservation
Division of Environmental Remediation, Region 9
270 Michigan Avenue, Buffalo, New York, 14203-2999
Phone: (716) 851-7220 • **FAX:** (716) 851-7226
Website: www.dec.state.ny.us

Erin M. Crotty
Commissioner

August 2, 2004

Mr. Peter Cammarata
Erie County Industrial Development Agency
275 Oak Street
Buffalo, New York 14203

Dear Mr. Cammarata:

Buffalo Lakeside Commerce Park
Hanna Furnace-Subparcels 1 and 2
Sites #V-00319-9 and V-00435-9
City of Buffalo, Erie County

NYSDEC reviewed the July 23, 2004 proposal by Malcolm Pirnie for handling elevated pH groundwater and finds it generally acceptable with the following comments:

- Each infiltration trench used shall be upgradient and no more than 500 feet from the particular work area where the groundwater is being removed. This is to minimize groundwater mounding in the vicinity of the infiltration trench and encourage the water to eventually return to the same work area from which it came.

- It is assumed that groundwater in the area generally flows to the Union Ship Canal. The drawing attached to the proposal locates one of the proposed infiltration trenches between the Phase II roadway and the canal, or downgradient of the anticipated work area. This location would be unacceptable.

- Again, the proposal is acceptable only for the Phase II roadway and Krog/Certain Teed construction projects and the NYSDEC approval extends only until April 1, 2005.

Sincerely,

David P. Locey
Environmental Engineer I

DPL/tml

cc: John Heffron, DDI
Mark Smith, ECIDA
Matt Forcucci, NYSDOH
Martin Doster, NYSDEC
Gerald Mikol, NYSDEC
Kent McManus, Malcolm Pirnie
Peter Krog, Krog Corp.

MALCOLM PIRNIE

MALCOLM PIRNIE, INC.
INDEPENDENT ENVIRONMENTAL ENGINEERS, SCIENTISTS & CONSULTANTS

July 8, 2004

Mr. David P. Locey
Environmental Engineer
NY State Dept. of Environmental Conservation
270 Michigan Avenue
Buffalo, New York 14203-2999

Re: Buffalo Lakeside Commerce Park (BLCP)
Remedial Action Work Plan (RAWPs) – Parcels 1 and 2
Proposal for Alternative Groundwater Handling Approach

Dear Mr. Locey:

We have prepared this letter on behalf of ECIDA/DDI to provide you with additional information regarding the magnitude of the groundwater handling issue on the above-referenced site and to gain approval of a proposal for an alternative groundwater handling approach. As you are aware, the Phase I Road/Utility Corridor Project is under construction and the Phase II Road/Utility Corridor Project has been bid. Also, site experience has shown that the occurrence/presence of elevated pH groundwater is more widespread than the site investigations had indicated.

The contractor for the Phase I Project has handled approximately 4.7 million gallons of elevated pH groundwater. If all of this water had been treated at the contract price of $0.10/gallon, the cost of groundwater treatment alone (excluding handling costs) would have exceeded $470,000. In addition, the design engineer for the Phase II Project has performed pump tests at the site (see attached letter), which indicate that similar quantities of water may need to be handled/treated during Phase II construction. The recent bids for Phase II construction indicate that the costs of groundwater handling/treatment could exceed $200,000. This unexpected drain on capital resources has created funding issues for site redevelopment because only limited funds are available and many of these funds have use restrictions.

Clearly, the groundwater issue has become a major cost factor for site redevelopment and ECIDA/DDI are concerned that the need to treat groundwater for pH, as required in the RAWPs, could become a major obstacle to the marketing and redevelopment of the BLCP. Consequently, we have developed an alternative approach, which is consistent with the intent of the RAWPs and protective of the environment. We are requesting that this approach be approved for implementation as part of the RAWPs for both parcels.

The attached drawing illustrates our proposed approach. We have designed 12 temporary groundwater infiltration trenches for use in development of Parcels 1 and 2. The planned locations and details for construction of these groundwater infiltration trenches are shown on the attached drawing. The locations were selected to facilitate access during planned construction and redevelopment activities while minimizing potential exposure hazards. The trenches will be approximately 100 feet long, 20 feet wide and four to six feet deep. The trenches will be lined

PO BOX 1938 BUFFALO, NY 14219-0138 716-667-0900 fax 716-667-0279 http://www.pirnie.com

with six inches of washed stone and surrounded by orange construction safety fence to limit access.

Contractors/Developers working in Parcels 1 and 2, including the contractors for the Phase I and II Road/Utility Corridor projects and the Krog/CertainTeed project, who are required to dewater to perform construction activities would be allowed to pump groundwater directly to these infiltration trenches without treatment for pH provided that the groundwater is not used for any purpose and they take precautions to minimize turbidity/solids in the groundwater so as to minimize the potential for blinding of the stone with solids. The Contractors/Developers will also be required to pump to an infiltration trench located up gradient (from the canal) and to control the pumping rate so as to not exceed the infiltration capacity of the trenches. We will not be allowing extraction of groundwater for use and discharge; we will only be allowing relocation of groundwater. When any given temporary infiltration trench is no longer needed to support redevelopment activities, it will be regraded and capped in accordance with the RAWPs.

All other requirements of the RAWPs would remain in effect. As signatory on the VCP Agreement, DDI understands that failure to comply with this revised groundwater handling approach and all other aspects of the RAWPs could cause the NYSDEC to withhold liability release.

We would greatly appreciate your prompt consideration of this proposal. We will be contacting you soon to set up a meeting with ECIDA/DDI and the NYSDEC to discuss this proposal in more detail.

Very truly yours,

MALCOLM PIRNIE, INC.

Kent McManus

Kent R. McManus, P.E., DEE
Senior Associate

cc: P. Cammarata, ECIDA
M. Smith, ECIDA
M. Doster, NYSDEC
G. Mikol, NYSDEC
File: CC

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C: KRM

MALCOLM PIRNIE

MALCOLM PIRNIE, INC.
INDEPENDENT ENVIRONMENTAL ENGINEERS, SCIENTISTS & CONSULTANTS

July 23, 2004

David Locey, P.E.
Environmental Engineer I
New York State Dept. of Environmental Conservation
Division of Environmental Remediation, Region 9
270 Michigan Avenue
Buffalo, New York 14203-2999

Re: Buffalo Lakeside Commerce Park (Hanna Furnace)
Subparcels 1 and 2, Site No. V-00319-9 and No. V-00435-9
Buffalo (C), Erie County
Request for Temporary Modification of Procedures for Handling Elevated pH Groundwater

Dear Mr. Locey:

We have prepared this letter on behalf of Erie County Industrial Development Agency (ECIDA) and Development Downtown, Inc. (DDI) as a follow-up to our July 8, 2004 letter (attached) and our subsequent meeting on July 21, 2004. As discussed at the meeting, the occurrence/presence of elevated pH groundwater is more widespread than site investigations have indicated. In fact, almost any sustained pumping results in the generation of elevated pH groundwater.

As requested during our meeting, we offer the following additional justification in support of our request for modification of the groundwater handling procedure:

- **Potential to Impact Off-site Areas**

  Analysis - Clearly the Soil/Fill on Subparcels 1 and 2, which consists of coarse grained slag and slag/soil mixtures, would be expected to have variable and relatively high hydraulic conductivities. Dewatering activities performed to date as part of Phase I Road/Utility construction work and as part of the Krog CertainTeed project have supported this conclusion. Krog has reported dewatering pump rates over 1000 gpm. Also, pump tests performed as part of the design for the Phase II Road/Utility project have indicated up to 180 gpm of groundwater may need to be handled during construction activities (see attached letter), all of which reflect the high hydraulic conductivity of the soil/fill materials.

Dewatering operations associated with excavations on Subparcels 1 and 2 create localized sinks causing groundwater to move relatively quickly toward excavations. Under our proposed alternative groundwater handling approach, groundwater will simply be relocated on the site (upgradient from the canal) to an area typically less than 500-feet away where it will infiltrate and begin its journey back toward the excavation. Groundwater will be moving in a continuous cycle (i.e., from the excavation, to the infiltration trench and then through the soil/fill back to the infiltration trench). If you assume an average hydraulic conductivity of 200 ft/day for the soil/fill, which appears reasonable based on the physical characteristics of the soil/fill and the pumping rates required to keep excavations dewatered, then the whole cycle may only take 2 to 3 days. This cycle will naturally prevent off-site impacts. Any groundwater, which is relocated to an infiltration trench near a property and/or lot boundary, will naturally move back toward the excavation it was extracted from. Also, this cycle and the use of infiltration trenches within 500 feet of the excavation keeps the groundwater in the same general area it was extracted from so that elevated pH groundwater will not be placed in areas that have not already been impacted.

Conclusion: The proposed alternative groundwater handling approach will not impact off-site properties and will not result in spreading of elevated pH groundwater on the site.

- **Potential to use Sewer District No. 6**

Analysis – As the NYSDEC is aware, the Erie County Department of Environment and Planning (ECDEP) has indicated that Erie County Sewer District No. 6 is willing to accept up to 25 gpm of elevated pH groundwater provided that certain discharge conditions are met (see attached letter). While this approach might appear feasible, the limited flow rate and associated discharge conditions severely limit the usefulness of this alterative. Typically, excavations on the site require dewatering at a rate in the 100 to 1000 gpm range and it is difficult if not impossible to prevent some mud and/or grit from being removed with the groundwater. Also, dewatering is often necessary in multiple locations given the various construction efforts that are on-going on the site. Consequently, the groundwater must be containerized to both equalize flow and remove mud/grit. In some cases, when large quantities of groundwater are removed over a short period of time, the groundwater must be kept contained for extended periods of time until sewer capacity is available. These requirements complicate the dewatering process and drive up the costs for groundwater handling to the point that discharge to Erie County Sewer District No. 6 is not feasible or cost-effective.

Conclusion: Discharge of elevated pH groundwater associated with dewatering of excavations to Sewer District No. 6 is not feasible or cost-effective.

The NYSDEC also raised some additional issues during the above-referenced meeting as follows:

- **Groundwater Sump Pumps** – The NYSDEC is concerned about the possibility of groundwater drains discharging via sump pumps to the storm water sewers. Obviously developers will be discouraged from installing groundwater drains and/or sump pumps. If they are deemed necessary, they will be connected to the sanitary sewer.

- **Schedule/Applicability** – The NYSDEC requested clarification of the timeframe for utilization of this modified groundwater handling approach. We are requesting that this temporary modification be granted through completion of the Phase II Road/Utility Corridor construction project, which is anticipated to be April 1, 2005. It would only apply to the road/utility corridor construction projects and the Krog CertainTeed project.

Both ECIDA/DDI and Krog are facing significant scheduling and cost impacts associated with handling of elevated pH groundwater. Consequently, we would greatly appreciate your prompt attention to this matter.

If you have any questions regarding this matter, please contact us.

Very truly yours,

MALCOLM PIRNIE, INC.

Kent R. McManus, P.E., DEE
Senior Associate

Attachments
cc: P. Cammarata, ECIDA
M. Smith, ECIDA
M. Doster, NYSDEC
G. Mikol, NYSDEC
P. Krog, Krog Corp.
P. Sheedy, Krog Corp.
File: CC

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May 28, 2004

Mr. Peter Cammarata
Erie County Industrial Development Agency
275 Oak Street
Buffalo, NY 14203

RE: Pump Testing Results
Buffalo Lakeside Commerce Park – Phase II
CHA Project No. 13217

Dear Mr. Cammarata:

Clough, Harbour & Associates LLP (CHA) has completed the pump testing investigation at the Buffalo Lakeside Commerce Park-Phase II site. The intent of the pump testing was to obtain site-specific data that could be use to help-predict the quantity of groundwater that will be generated from dewatering activities during the construction of the proposed utilities and roadway infrastructure. The pump testing for this investigation was conducted on two test pits excavated near the center of the proposed roadway and utility alignment.

Although conducting a pump test in a test pit is not ideal and testing of a groundwater well is preferred, Erie County Industrial Development Agency (ECIDA) representatives have indicated that past predictions made from well data were drastically lower than the actual quantities encountered during Phase I redevelopment project. The use of test pits is considered an empirical approach. While the conditions encountered in the test pit may be somewhat representative of what a contractor may encountered during construction, the variability in the subsurface materials at the site could result in significantly different results.

Methodology & Results

On May 17 and 18, 2004, CHA directed Nature's Way Environmental Consultants and Contractors, Inc. (NW) to advance eight (8) test borings to a depth of sixteen (16) feet below the ground surface along the proposed alignment of the underground utilities and roadway. After selecting an area where the most coarse-grained soils were encountered, CHA directed NW to excavate a test pit near boring B-3 (Sta. 13+50). The plan was to excavate a test pit approximately 5-foot wide and approximately 15 feet below the ground surface. However, during the excavation of Test Pit No. 1, NW encountered an old concrete foundation at a depth of approximately 5 feet below the ground surface and attempted to dig around it. As a result, the excavation was approximately 14.7 feet long by 7 feet wide and 10.4 feet deep. Because a majority of the water inflowing into this trench appeared to be resulting from perched water on the top of the old concrete foundation, NW excavated a second test pit on site.

After excavating the test pits, groundwater was allowed to fill the trenches for several minutes to allow the water levels to approach equilibrium. A four-inch hose and screen were then inserted into the bottom of the trench and connected to a pump staged next to the test pit. The groundwater in Test Pit No. 1 was removed at a rate of 100 gallons per minute for approximately 17 minutes, at which time there was only 0.1 feet of water remaining in the bottom and the pump could not physically remove any additional water. At that point, the pump was shut off and the water levels were measured for approximately 30 minutes as the water refilled the test pit. The pump was turned on a second time and was able to lower the water level in the trench to approximately 0.2 feet within 4 minutes. Table 1 attached at the end of this document summarizes the pump testing data for Test Pit No. 1.

Because the pump rate of 100 gallons per minute exceeded that rate of groundwater inflow into trench and a stabilized drawdown was not achieved, the drawdown data may not be used directly. However, it does demonstrate that the rate of flow into the trench was significantly less than 100 gallons per minute. CHA also evaluated the recharge data after the pump was shut off. Based upon the dimensions of the trench and the 0.1 feet of water remaining in the trench when the pump was shut off, approximately 73 gallons remained in the trench. After the pump had been turned off for 12 minutes, approximately 513 gallons of water remained in the test pit. Based upon the increased volume of water in the test pit in 12 minutes, CHA estimates that the inflow rate into the test pit was approximately 37 gallons per minute (or approximately 2.5 gallons per minute per foot of trench length). Similarly, if the water level after 32.5 minutes of recharge is used, the rate of inflow in the test pit is estimated to be approximately 34 gallons per minute.

Since the flow rate into Test Pit No. 1 was less than expected and a majority of the water inflowing into the trench appeared to be coming from perched water on the top of an old concrete foundation, a second test was conducted at Test Pit No. 2, near boring B-4 (Sta. 16+00). Test Pit No. 2 was approximately 15 feet long by 5 feet wide and 12.5 feet deep; however the sides of the excavation sloughed off as the water level in the trench increased and resulted in the trench depth being only 10.8 feet below the ground surface during the pump test. CHA notes that a peat layer was observed at approximately 8.3 feet below the ground surface, positioned between fill materials above and native lacustrine silt and clay below. Although the target depth of 15 feet was not reached due to the lack of stability of the excavation, the bottom of the trench was extended into the native lacustrine silt and clay beneath the peat. Given the expected low permeability of the silt and clay, it is unlikely that extending the trench a few feet deeper would contribute to a significant additional inflow into the test pit. The attached Table 2 summarizes the pump testing data for Test Pit No. 2.

After pumping Test Pit No. 2 at a rate of 200 gallons per minute for 21 minutes, all but 0.1 feet of water in the trench had been removed. Again, since the pump rate of 200 gallons per minute exceeded the rate of inflow into the trench and a stabilized drawdown was not achieved, CHA evaluated the recharge data. Based upon the change in volume of water in the test pit within the first 4.5 minutes of recharge, CHA estimated that the rate of inflow into the trench to be approximately 187 gallons per minute. However, if the change in volume is considered over 30 minutes of recharge, the rate of inflow is significantly reduced to approximately 108 gallons per minute. The reduction inflow rate into the trench with time is attributable to the increased static head (water column) with time. In other words, as the water level in the trench rises, less water is flowing into the trench from near the bottom because the bottom of the trench is approaching equilibrium. Therefore, upon initially dewatering the trench, it is likely that the actual inflow was closer to 187 gallons per minute (or approximately 12.5 gallons per minute per foot of trench length).

The dramatically different rates of groundwater inflow into Test Pits No. 1 and No. 2 over a distance of only 250 feet demonstrates the wide degree of variability that can be expected at the site during construction. CHA attributes this wide range in groundwater inflow rates to, but not limited to, the following:

- The fill materials beneath the site are heterogeneous. Based upon our observation of the test pits, it appears that there is a wide variety of types of fill at the site and the different materials were placed in layers. Thus, more water may be entering the trench through one or two layers/seams as opposed to the entire trench face.

- A significant amount of construction and demolition type debris was encountered at the site. It is possible that pockets of water are trapped within this debris or that water is perched on top of former foundations and other debris. This water may or may not be drained depending on the amount of time the excavation is open and pumped.

- Stabilized drawdown was not achieved, and therefore, using groundwater flow models used to predict the rate of inflow is not possible.

Other factors that may contribute to variations in the amount of water that is encountered during construction may include:

- Variability in weather, both daily and seasonally. Any significant precipitation may increase the water table level or vice versa. In addition, surface water may inflow into the utility trenches during construction, depending on how the runoff is managed.

- The construction methods used to install the utilities, shoring methods, and dewatering methods will impact the amount of water that must be managed during construction.

- The length of time the trenches are left open and the rate of utility installation. If obstructions or other problems are encountered during the excavation, one area of trench could be left open for several hours.

- The depths and geometry of excavations will vary, and therefore, it is expected that less water will be encountered in shallower trenches. Similarly, wider trenches may be necessary for some of the larger diameter storm sewer system, and therefore, additional water may be encountered.

As a conservative approach, CHA estimates that up to 200 gallons per minute of water inflow into Test Pit No. 2. While this rate of inflow is expected to decrease over a period of several hours (as stability is reached and voids or perched water is removed), it is generally expected that the trenches will be open for a period of approximately one to two hours. Using an inflow rate of 200 gallons per minute into the 15-foot long Test Pit No. 2, CHA estimates that approximately 13 gallons per minute of water flowed into the trench per foot of trench. If 30 feet of trench is open at all times, this would result in approximately 187,200 gallons of water be pumped out of the utility trenches each day.

Expected Groundwater Quantities

Given the variable flow rates into the trenches and the factors discussed above that influence the amount of groundwater that will be generated, it is even more difficult to estimate a total quantity of water that may be generated from the proposed project. However, as an attempt to provide an order of

magnitude estimate on the expected groundwater quantities that may need to be managed during construction, CHA has computed a quantity for each proposed utility. It is important to understand that these quantities are sensitive to a number of factors, including the assumptions that are identified in the following paragraphs. If these assumptions are not valid relative to the actual methods used or encountered during construction, dramatically results may be expected.

Sanitary Sewer System

There is approximately 1,721 lineal feet of 12-inch diameter PVC sanitary sewer proposed to be installed for the project. The pipe will be installed at depths ranging from 8 to 17 feet below the ground surface. Based upon the groundwater management issues and the historical problems encountered during the Phase I of the redevelopment project, it is likely that the rate of installation will be limited. For estimating purposes, CHA has assumed that the average rate of installation between sanitary manholes SAN-1 and SAN-7 (approximately 12 to 17 feet deep) will be approximately 50 feet per day. Between sanitary manholes SAN-7 and SAN-10 (approximately 8 to 10 feet deep), CHA has assumed that the sanitary sewer can be installed at an average rate of 80 feet per day. Based upon these assumed installation rates, it will take approximately 23 days to install the pipe between manholes SAN-1 and S-7 and approximately 8 days to install the sewer between manholes SAN-7 and SAN-10 for total of 31 days. CHA has assumed that it will take approximately 4 days to install the sanitary sewer laterals or total of approximately 35 days to complete the installation of the entire sanitary sewer system.

Although the trench depth varies, a majority of the trench will be excavated through the fill materials and into or through the peat layers beneath. Therefore, since a majority of the water observed entering the trench from the peat and fill materials, it is not expected that significant variations of the rate of inflow will be observed as the depth of the trench is elevated. Based upon the results from Test Pit No. 1, the average inflow was approximately 2.5 gallons per minute per foot of trench. If a 30-foot long trench is open throughout an 8-hour work day for 35 days, approximately 1.3 million gallons of water may be generated and require disposal management. However, the soils encountered along most of the trench are more similar to those encountered in Test Pit No. 2, the average flow rate into the trench would be increased to approximately 12.5 gallons per minute per foot of trench and approximately 6.7 million gallons of water could be generated. This range is very high; however, as previously stated, the range of flows in the field were highly varied over a relatively short distance and there are too many unknowns with respect to the fill materials and construction practices to refine the assumptions made and determine a more realistic value.

Storm Sewer System

Approximately 419 lineal feet of 18-inch diameter PVC pipe, 201 lineal feet, of 24-inch diameter PVC pipe, 130 lineal feet of 30-inch diameter reinforced concrete pipe (RCP), 93 lineal feet of 36-inch diameter RCP, and 830 lineal feet of 48-inch RCP pipe will be installed for the proposed storm sewer system. These numbers do not include the 12-inch diameter PVC that will be used to connected the roadway catch basins to the main drainage manholes. However, most of this piping will be installed at an approximate depth of 4.5 feet below ground surface and is not expected that a significant amount of water will be encountered at this depth. CHA has assumed that the 620 lineal feet of PVC pipe will be installed at a rate of 100 feet per day (approximately 6 days) and the 1,053 lineal feet of RCP will be installed at a rate of 60 feet per day (approximately 18 days), resulting approximately 24 days to complete the storm sewer pipe installation.

Based upon the soils encountered in the test borings (results submitted under a separate cover), it appears that most of the PVC piping will be placed in fill materials, an little or none of the peat layer

will be encountered. However, the trench depth may extend up to 2 feet into the peat layer for the larger RCP pipe, which is the layer where most of the water was inflowing into the trench from. Since the peat layer will not be completely penetrated as with most of the sanitary sewer installation, CHA has reduced the estimated flow rates from test pits to 70% of the original values, or a range of 1.8 to 8.8 gallons per minute per foot of trench. If 30 feet of trench are open 8 hours of day, the total quantity of water generated could range from 0.6 million gallons to 3.0 million gallons.

Watermain System

Approximately 1,900 lineal feet of watermain will be installed as part of the proposed project. CHA estimates that approximately 300 feet of watermain will be installed a day and that it will take approximately 7 days to complete the installation. This number is considered conservative, but accounts for difficulties that may be encountered during construction. The depth of the trench necessary to install the pipe will typically be limited to 6 to 7 feet below the ground surface and 2 to 3 feet below the water table. While CHA has insufficient information to directly determine the amount of groundwater that will be encountered in these shallower trenches, it is likely that the flows will be significantly less than those encountered in Test Pit No. 1. Therefore, CHA has assumed an approximately 50 percent reduction in the flow rate encountered in Test Pit No. 1, or approximately 1.25 gallons per minute per foot of trench. If a 30-foot long trench is open for 8 hours per day, approximately 126,000 gallons of water would be generated under this assume scenario.

Summary

Given the variable subsurface materials encountered at the site, it is difficult at best to predict the amount of groundwater that will require dewatering during construction. Based upon the results of the test pits pumping tests, CHA estimates that approximately 2.5 to 12.5 gallons of water per minute per foot of trench length may require dewatering. This range is significant, but is representative of the significant changes observed in the field in two test pits excavated just 250 feet apart. The number of potential variables that may be encountered during construction also make it difficult to estimate a total quantity of water that may encountered during construction. However, based upon the assumptions described previously, the total amount of groundwater that may be encountered during construction may range from 2 to 10 million gallons of water for the project. Based upon the above, we recommend a total bid quantity of 7.5 million gallons of water be included in the bid documents.

Please contact me at 847-6310 if you have any questions.

Sincerely,

CLOUGH, HARBOUR & ASSOCIATES LLP
ENGINEERS, SURVEYORS, PLANNERS,
& LANDSCAPE ARCHITECTS

Russell J. Stoll, P.E.
Associate

CC: M. Smith, ECIDA

Buffalo Lakeside Commerce Park – Phase II
Pump Testing Results

Table 1. Pump Test for Test Pit No. 1

Pumping Rate (gpm)	100	Recharge	100
Elapsed time (min:sec)	Depth to Water (feet)		
0:00	5.8	10.3	8.8
0:30	5.9		9.0
1:00	6.0		9.2
1:30	6.1	10.2	9.35
2:00	6.3		9.5
2:30	6.5	10.0	9.65
3:00	6.7		9.8
3:30	6.8		10.0
4:00	6.9		10.2
4:30	7.05		
5:00	7.2		
5:30	7.3	9.90	
6:00	7.5		
6:30	7.6		
7:00	7.7		
7:30	7.8		
8:00	7.95		
8:30	8.1		
9:00	8.2		
9:30	8.35	9.75	
10:00	8.45		
11:00	8.85		
12:00	9.15	9.70	
13:00	9.4		
14:00	9.9		
15:00	10.0		
16:00	10.1		
17:00	10.3		
32:30		8.8	

Buffalo Lakeside Commerce Park – Phase II
Pump Testing Results

Table 2. Pump Test for Test Pit No. 2

Pumping Rate (gpm)	200	Recharge	100
Elapsed time (min:sec)	Depth to Water (feet)		
0:00	3.0	10.5	4.7
0:30	3.4	10.3	4.85
1:00	3.7	10.05	4.95
1:30	3.8	9.8	5.15
2:00	4.0	9.7	5.25
2:30	4.25	9.6	5.35
3:00	4.4	9.45	5.45
3:30	4.65	9.3	5.55
4:00	4.85	9.15	5.65
4:30	5.1	9.0	5.75
5:00	5.3	8.85	5.85
5:30	5.5		5.9
6:00	5.7		6.0
6:30	5.9	8.55	6.1
7:00	6.1		6.2
7:30	6.25		6.3
8:00	6.40		6.4
8:30	6.55		6.45
9:00	6.75		6.55
9:30	6.9		6.65
10:00	7.1	7.65	6.7
15:00	8.6		7.3
20:00	10.35	5.7	7.8
21:00	10.7		8.25
30:00		4.7	8.7
31:00			8.8

County of Erie

JOEL A. GIAMBRA
COUNTY EXECUTIVE

DEPARTMENT OF ENVIRONMENT & PLANNING

LAURENCE K. RUBIN
COMMISSIONER

CHARLES J. ALESSI, P.E.
DEPUTY COMMISSIONER
Sewerage Management

February 20, 2004

Mr. Mark Smith
Construction Manager
Erie County Industrial Development Agency
275 Oak Street, Suite 150
Buffalo, New York 14203

RE: Erie County Sewer District No. 6
Buffalo Lakeside Commerce Park - Parcels 1 and 2

Dear Mr. Smith:

The Division of Sewerage Management has reviewed your letter regarding the excavation project at Lakeside Commerce Park. Your letter addresses the groundwater encountered during excavation and the potential discharge of this water to the Erie County Sewer District No. 6 sanitary sewer. As reported, the groundwater has a pH of approximately 10, some of which also has low level petroleum concentration.

The information you requested is as follows:

1. The approved discharge point for the project is Manhole #1211, which is located adjacent to the Commerce Drive Pump Station.

2. The maximum flow rate of the high pH groundwater can be determined once a sample is available for analysis. Prior to performing this analysis a maximum discharge rate of 25 gpm is estimated.

3. Provisions for preventing any mud and/or grit from being pumped into the sewer must be in place.

4. The pH of the groundwater shall not exceed 12.

5. Any groundwater that displays a sheen would require treatment prior to discharge.

6. The fee for discharging to the sanitary sewer is $1.92/1000 gallons discharged. An additional one time parcel fee of $70.00 may also apply. Therefore, the discharge to the sanitary sewer shall be metered and recorded, by the contractor, as the basis for billing.

7. Discharge will be allowed only during the construction period, estimated at three to four months. Long term discharge of groundwater is not acceptable.

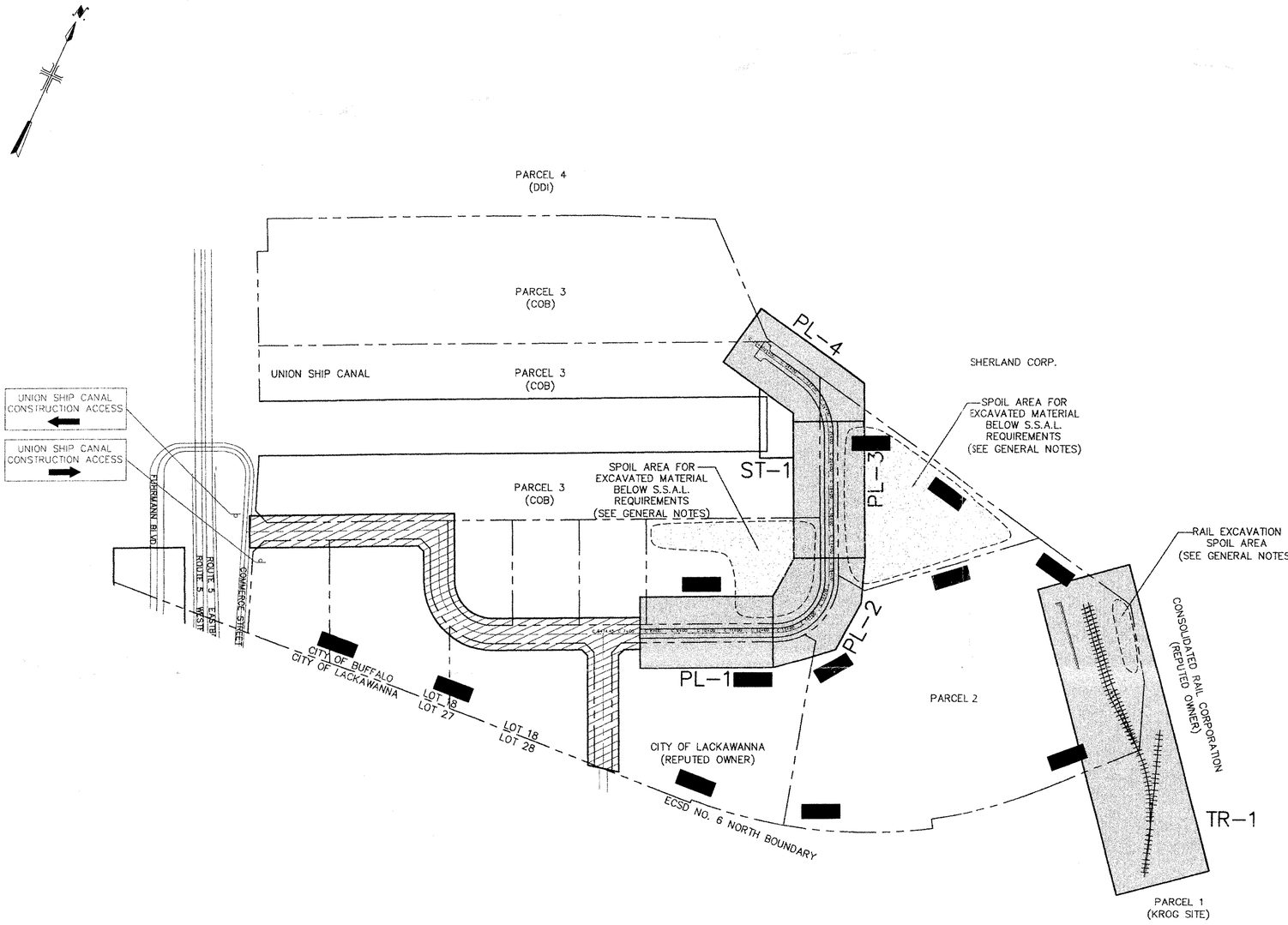
Additional requirements for discharge includes notification to the Lackawanna treatment plant at least twenty-four hours prior. A Sewer District representative must also be present when discharge begins. Should acceptance of the groundwater cause any problems to the treatment system, the District would likely require that operations cease.

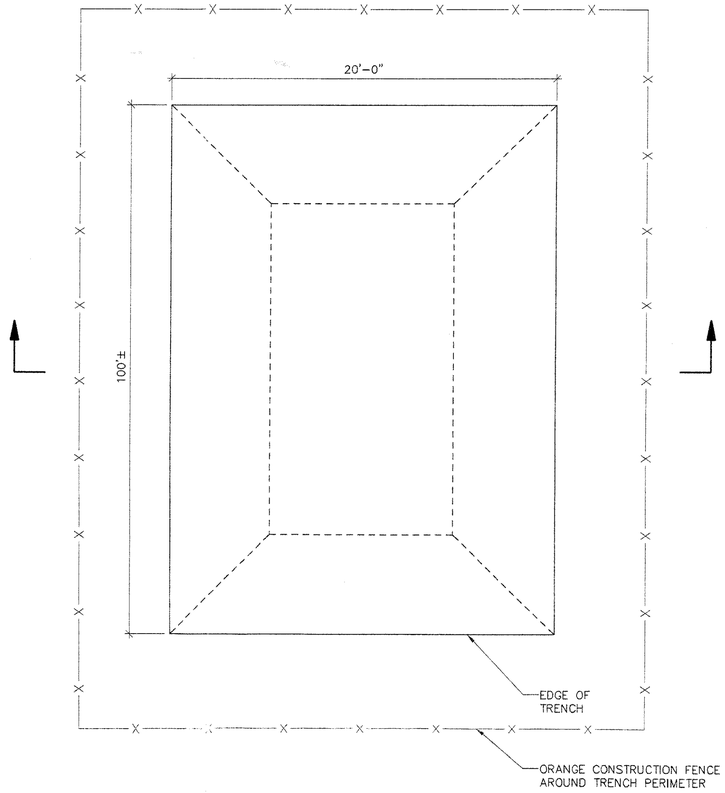
We trust that this information addresses your needs. Please call me at 858-8581 if you have additional questions or need additional information.

Very truly yours,

Thomas J. Whetham, P.E.
Assistant Deputy Commissioner

TJW:NJE:ss
Cc: C. Alessi/G. Devlin/N. Elliott/6.2.4.3
Glenn Absolom
Chris Pawenski
N. Spink (URS)
Ss155





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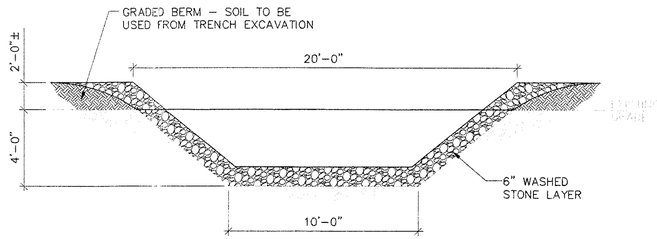

SECTION

INFILTRATION TRENCH
NOT TO SCALE

– PHASE I CONSTRUCTION

– APPROXIMATE LOCATION OF PROPOSED INFILTRATION TRENCH (SEE DETAIL THIS SHEET)

– PHASE II CONSTRUCTION

MALCOLM PIRNIE

REVISIONS			
NO.	BY	DATE	REMARKS

DES
DWN
CKD

BCLP PARCELS 1 AND 2

ALTERNATE GROUNDWATER HANDLING CONCEPT

NOT TO SCALE

DATE JULY 2004

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