

Stabilizing a Site in the Wake of an Unfinished Development

City of Toledo Marina District

Presented By:

Joel L. Mazur

The City of Toledo

Sally L. Gladwell, CP

The Mannik & Smith Group, Inc.

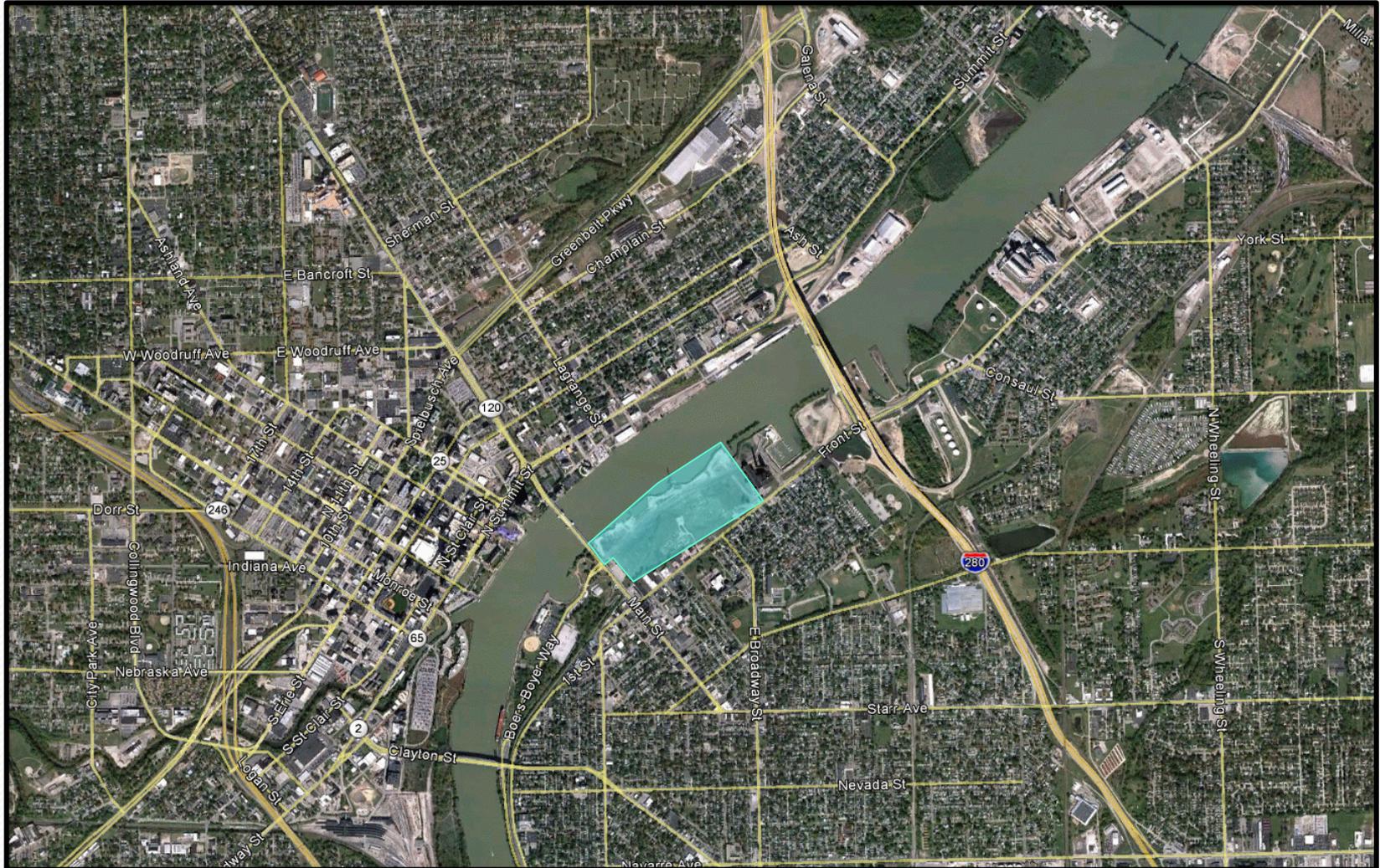
May 24, 2012



The
Mannik & Smith
Group, Inc.



Toledo's Marina District Property





Toledo's Marina District Property

- A gateway to our city
 - 86.5 acres along the bank of the Maumee River, a State Scenic River
 - Across the river from downtown Toledo
 - Part of Toledo's historic east side
- Millions of dollars have been spent on environmental assessment, cleanup, and infrastructure
- Previous plans for the site included upscale mixed used development, but those plans fell through and the site has sat idle
 - Degrading physical conditions contribute to economic disincentives



Environmental Conditions

- Property has an industrial history including the burning of coal and oil to generate electricity and the disposal of flyash.
- Two Covenants-Not-to-Sue (in 2008 and 2010) were issued for the property in accordance with the Ohio VAP.



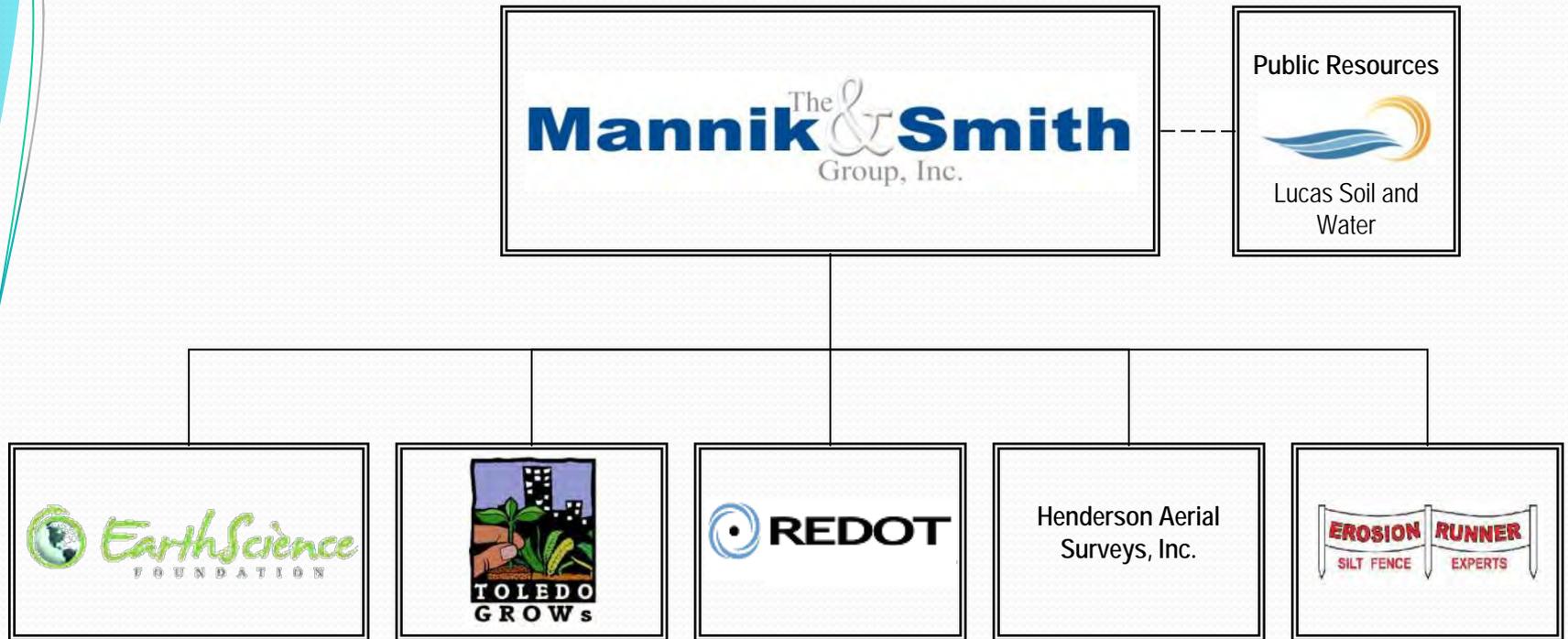


Environmental Conditions (cont.)

- Contaminants remaining on the property include:
 - arsenic, and polycyclic aromatic hydrocarbons (PAHs) in soils; and,
 - n-hexane, naphthalene, benzene and several inorganic constituents in site groundwater.
- Engineering and administrative controls include the use of structural foundations, pavement, soil cover in public green space, and prohibiting the construction of basements under future buildings.



Seeking a Solution: Marina District Project Team





Funding a Solution

This project will focus on reducing toxic substances... in brownfield sites in Lucas County.

- Great Lakes Restoration Initiative FY2010 Grant



Sediment Plume into Maumee Bay





Marina District Project Property





- The Marina District site is a unique resource capable of meeting all three goals of the grant: phytoremediation, enhancing urban tree cover, and improving watersheds.



Marina District, November 2011



Marina District, August 2011





- Enhanced plantings along the Maumee River will also result in direct improvement to the local watershed by trapping sediment and stabilizing the shoreline.



Marina District, November 2011



Marina District, November 2011





- This project will help stop the migration of sediment and nutrient-laden storm water to the Maumee River and Bay by reversing on-site rill erosion and providing function to the four onsite defunct rain gardens, which are currently impaired by sedimentation and dominated by invasive species.



Marina District, September 2011



Marina District, September 2011





Project Plans and Schedule

Marina District Site Stabilization Project									
Task Description		2011				2012			
		Winter	Spring	Summer	Fall	Winter	Spring	Summer	Fall
Horticultural Sampling at Marina District Site	Summer 2011			■					
Topo Survey	Summer – Fall 2011			■	■				
Grading Plans	Summer – Fall 2011			■	■				
Borrow Source ID and Testing	Fall 2011				■				
ID Soil Quantities	Fall 2011				■				
Permitting and SWPPP Preparation	Fall 2011 – Winter 2012				■	■			
Installation of BMPs	Fall 2011 – Winter 2012				■	■			
Borrow Site Preparation and Soil Moving	Winter 2012					■			
Seeding & Trees	Spring 2012						■		
Watering	Spring – June 2012						■	■	
Rain Garden Maintenance	Spring 2012						■		
Assessment; New Property Owner Assumes Ongoing Maintenance	Summer 2012							■	



Horticultural Testing of Site Soils

MICHIGAN STATE UNIVERSITY		MICHIGAN STATE UNIVERSITY SOIL AND PLANT NUTRIENT LABORATORY EAST LANSING, MICHIGAN 48824-1325 (517) 355-0218				
SOIL TEST REPORT FOR:			CONSULTANT:			
JAKOB REINHOLD MANNIK AND SMITH GROUP, INC. 1800 INDIAN WOOD CIRCLE MAUMEE OH 43537						
DATE	LAB #	COUNTY	GROWER'S EMAIL	ACRES	FIELD ID	SOIL
6/14/2011	139436		reinholdj@mannaiksmithgroup		Jakob	Mineral
Next to Lake or Stream?		Year Area Planted	Fertilizer Tilled in Prior to Planting?		How Deep?	
Yes		Not Yet Planted	No		4 Inches	
SOIL NUTRIENT LEVELS:		Below Optimum	Optimum	Above Optimum		
Soil pH 7.6	Time Index					
Phosphorus (P)	10 ppm	██████████				
Potassium (K)	97 ppm	██████████				
Magnesium (Mg)	336 ppm	██████████				
ADDITIONAL RESULTS:		Optional Tests:				
Calcium (Ca) ppm	CEC (meq/100g)	% of Exchangeable Bases	Micronutrients (ppm)			Organic Matter %
		K Mg Ca	B Cu Mn Zn Fe		Nitrate-N ppm	
3764	19.9	1.3 14.1 84.7			2.2	
RECOMMENDATIONS FOR: <i>General Crops:</i>						
Limestone:		NONE				
NUTRIENT NEEDS:						
Nitrogen (N)		Phosphate (P ₂ O ₅)		Potassium (K ₂ O)		
2-3 lb/1000 sq ft		3 lb/1000 square feet		9 lb/1000 square feet		
FERTILIZER OPTIONS:						
MESSAGES:						
Minimum single nitrogen application is 1 lb/1000 sq ft. Nitrogen rate may be decreased 20 to 40 % if clippings are returned. Site along Maumee River in City of Toledo. Very industrialized area.						
Test Methods: 1= 1:1 soil/water pH; 2= Olsen Extraction; 3= 1N Ammonium Acetate Extraction						

MICHIGAN STATE UNIVERSITY		MICHIGAN STATE UNIVERSITY SOIL AND PLANT NUTRIENT LABORATORY EAST LANSING, MICHIGAN 48824-1325 (517) 355-0218				
SOIL TEST REPORT FOR:			CONSULTANT:			
JAKOB REINHOLD MANNIK AND SMITH GROUP, INC. 1800 INDIAN WOOD CIRCLE MAUMEE OH 43537						
DATE	LAB #	COUNTY	GROWER'S EMAIL	ACRES	FIELD ID	SOIL
6/14/2011	139437		reinholdj@mannaiksmithgroup		Jakob	Mineral
Next to Lake or Stream?		Year Area Planted	Fertilizer Tilled in Prior to Planting?		How Deep?	
Yes		Not Yet Planted	No		4 Inches	
SOIL NUTRIENT LEVELS:		Below Optimum	Optimum	Above Optimum		
Soil pH 7.7	Time Index					
Phosphorus (P)	9 ppm	██████████				
Potassium (K)	109 ppm	██████████				
Magnesium (Mg)	348 ppm	██████████				
ADDITIONAL RESULTS:		Optional Tests:				
Calcium (Ca) ppm	CEC (meq/100g)	% of Exchangeable Bases	Micronutrients (ppm)			Organic Matter %
		K Mg Ca	B Cu Mn Zn Fe		Nitrate-N ppm	
3742	21.9	1.5 13.2 85.6			1.5	
RECOMMENDATIONS FOR: <i>General Crops:</i>						
Limestone:		NONE				
NUTRIENT NEEDS:						
Nitrogen (N)		Phosphate (P ₂ O ₅)		Potassium (K ₂ O)		
2-3 lb/1000 sq ft		6 lb/1000 square feet		4 lb/1000 square feet		
FERTILIZER OPTIONS:						
MESSAGES:						
Minimum single nitrogen application is 1 lb/1000 sq ft. Nitrogen rate may be decreased 20 to 40 % if clippings are returned. Site along Maumee River in City of Toledo. Very industrialized area.						
Test Methods: 1= 1:1 soil/water pH; 2= Olsen Extraction; 3= 1N Ammonium Acetate Extraction						

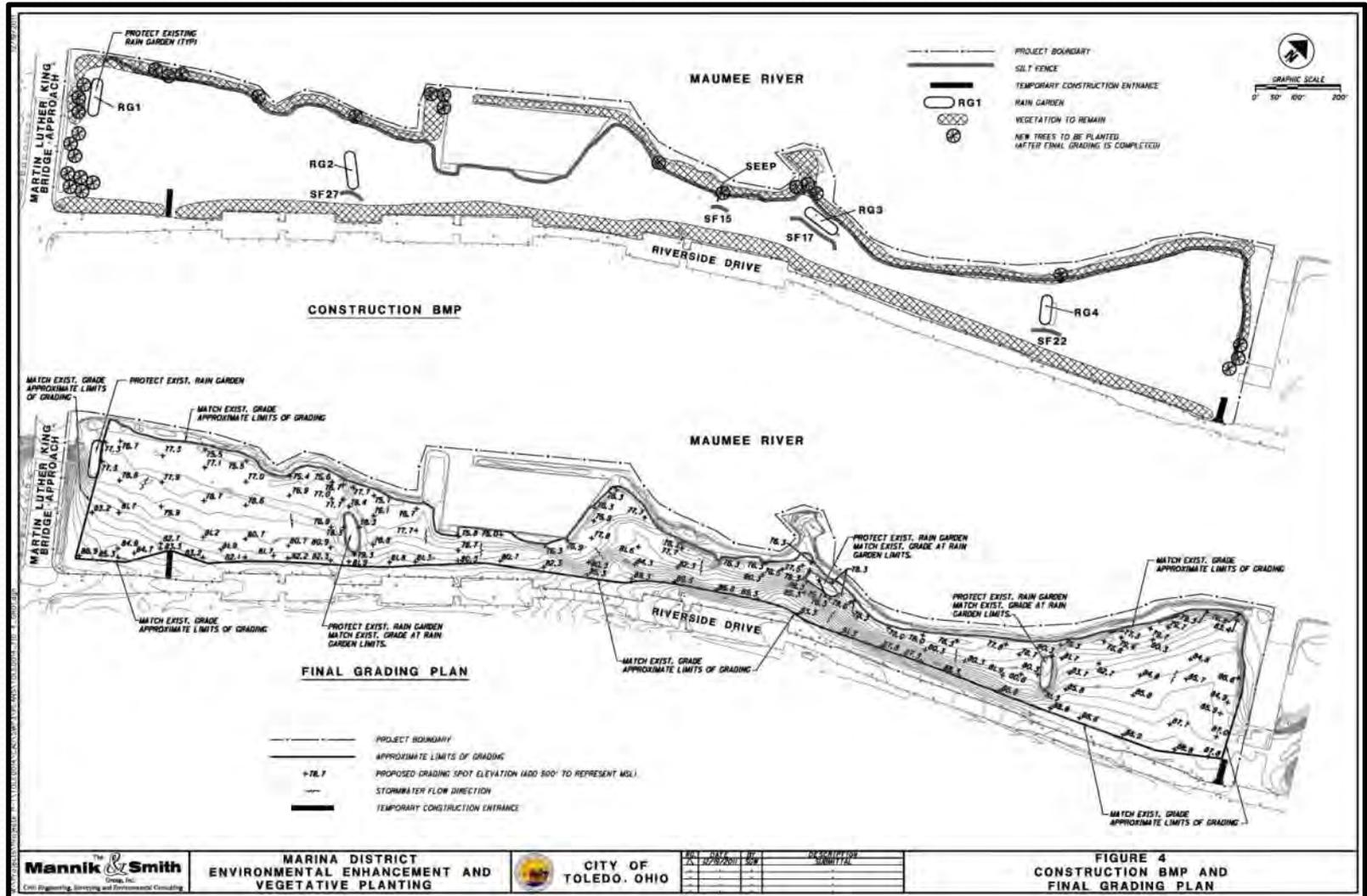


Topographic Survey





Grading Plan





Borrow Source Identification and Testing





Borrow Source Identification & Testing (cont.)





Borrow Source Identification & Testing (cont.)

MICHIGAN STATE UNIVERSITY		MICHIGAN STATE UNIVERSITY SOIL AND PLANT NUTRIENT LABORATORY EAST LANSING, MICHIGAN 48824-1325 (517) 355-0218								
SOIL TEST REPORT FOR: TONY REHRMANN MANNIK & SMITH 1800 INDIAN WOOD CIRCLE MAUMEE, OH 43537				CONSULTANT						
DATE	LAB #	COUNTY	GROWER'S EMAIL	ACRES	FIELD ID	SOIL	TEXTURE			
11/28/2011	144997		rehrmann@mnnikandsmithgroup.com		Dredge	Mineral	Clay			
Next to Lake or Stream?		Year Area Planted		Fertilizer Used in Prior to Planting?		How Deep?				
Yes		Not Yet Planted		Yes						
SOIL NUTRIENT LEVELS				Below Optimum		Optimum		Above Optimum		
Soil pH @8		Lime Index								
Phosphorus (P)		11.2		ppm						
Potassium (K)		97		ppm						
Magnesium (Mg)		230		ppm						
ADDITIONAL RESULTS:				Optional Tests:						
Calcium (Ca)	CEC	% of Exchangeable Bases			Micronutrients (ppm)				Organic Matter %	Nitrate-N
ppm	(meq/100g)	K	Mg	Ca	B	Cu	Mn	Zn	Fe	ppm
831.3	43.7	0.6	4.4	95.0						4.0
RECOMMENDATIONS FOR: <i>Turf, low maintenance</i>										
Limestone: NONE										
NUTRIENT NEEDS:										
Nitrogen (N)			Phosphate (P ₂ O ₅)				Potassium (K ₂ O)			
1-2 lb/1000 sq ft			NONE				9 lb/1000 square feet			
FERTILIZER OPTIONS:										
MESSAGES:										
Maximum single nitrogen application is 1 lb/1000 sq ft. Nitrogen rate may be decreased 20 to 40% if clippings are returned. For shaded grass decrease nitrogen rate by 1/2 and apply primarily in fall.										
Soil from dredged material to be used as cover for a brownfield remediation. Will be seeded with native grasses and riparian trees.										
Test Methods: 1-1:1 soil/water pH; 2-1:5 soil extractant; 3- N:Ammonium acetate extraction										

Table 1.0
Soil Analytical Summary
Proposed Borrow Material, Facility 3, Toledo Port Authority

Parameter	Sample ID	Direct Contact With Soil (Residuals)*
	Design Borrow #10/2011	
mg/kg		
RCRA Metals		
Silver	<1.20	8.20
Antimony	7.4	14.7
Barium	124	5,400.00
Cadmium	1.32	120,000.00
Chromium	25.4	230.00
Cobalt	20.4	400.00
Selenium	<6.02	590.00
Mercury	<0.143	7.80
PCBs		
Aroclor 1018	<0.0270	1.1
Aroclor 1221	<0.0270	1.1
Aroclor 1232	<0.0270	1.1
Aroclor 1242	<0.0270	1.1
Aroclor 1254	<0.0270	1.1
Aroclor 1264	<0.0270	1.1
Aroclor 1280	<0.0270	1.1
SVOCs		
Benzofluoranthene	0.303	11.00
Benzo(a)pyrene	0.298	1.10
Benzo(b)fluoranthene	0.236	11.00
Benzo(g,h,i)perylene	0.212	
Chrysene	0.262	1,100.00
Fluoranthene	0.418	2,300.00
Indeno(1,2,3-cd)pyrene	0.206	11.00
Phenanthrene	0.237	
Pyrene	0.311	11.00

*See Table 1.0.1 for Type A, B, and C Residuals. *Residuals are reported as the sum of the parent compound and its metabolites.
© Copyright 2002-2010 Mannik & Smith Group, Inc. All rights reserved.

C:\Users\SGIADW\1\AppData\Local\Temp\KfgrpretestAnalyticalSummaryTest1.xls



Permitting and SWPP Preparation

Ohio EPA Notice of Intent (NOI) For Coverage Under Ohio Environmental Protection Agency General Permit

Read accompanying instructions carefully before completing this form.
Submission of this NOI constitutes notice that the party identified in Section I of this form intends to be authorized to discharge into state surface waters under Ohio EPA's NPDES general permit program. Becoming a permittee obligates a discharger to comply with the terms and conditions of the permit. Complete all required information as indicated by the instructions. Forms transmitted by fax will not be accepted. A check for the proper amount must accompany this form and be made payable to "Treasurer, State of Ohio." (See the fee table in Attachment D of the NOI instructions for the appropriate processing fee)

I. Applicant Information/Mailing Address

Company (Applicant) Name: City of Toledo
 Mailing (Applicant) Address: 348 S. Erie Street
 City: Toledo State: OH Zip Code: 43604
 Contact Person: Joel Mazur Phone: (419) 936-3944 Fax: (419) 936-3859
 Contact E-Mail Address: joel.mazur@toledo.oh.gov

II. Facility/Site Location Information

Facility Name: Riverside Drive Construction Project
 Facility Address/Location: 1401 Front Street
 City: Toledo State: OH Zip Code: 43605
 County(ies): Lucas Township(s): _____
 Facility Contact Person: Michael J. White, PE Phone: (419) 936-3670 Fax: (419) 936-3737
 Facility Contact E-Mail Address: mwhite@toledo.oh.gov
 Quarter: N/A Section(s): N/A Range: N/A
 Receiving Stream or MS4: Maumee River
 If aware of a state nature preserve within 1,000 feet of the facility/site, check here:
 Enter river code here, if discharge is to a river designated scenic, wild, or recreational, or to a tributary within 1,000 feet (see instructions): _____
 General Permit Number: OHCP00003 Construction Storm Water Initial Coverage: Renewal Coverage:
 Type of Activity: Construction SW / Dairy SW - 20 or more acres disturbed Fee = \$500
 SIC Code(s): N/A
 Existing NPDES Permit Number: 20C00044*AG
 ODM Coal Mining Application Number: N/A

Outfall	Design Flow (MGD)	Latitude	Longitude
<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>

Other DSW Permits Required: Nationwide Permit
 Proposed Project Start Date (MO DY YR): 05/01/08 Estimated Completion Date: (MO DY YR): 05/01/08
 Total Land Disturbance (Acres): 43.20 MS4 Drainage Area (Square Miles): _____
 Payment Information: Check # 2021 Check Amount: \$500.00 Date of Check: 5/15/2008

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the persons or persons who manage the system, and certify I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Applicant Name: Joel Mazur Title: Sr. Environmental Specialist
 Applicant Signature: *[Signature]* Date: 5/15/2008

108-684 (Rev. 07) FOR CONSTRUCTION STORM WATER, ATTACH LOCATION MAP Click to clear all entered information CLEAR

Environmental Protection Agency

Governor
Lt. Governor
Director

2/23/2012

DASHING PACIFIC GROUP
JIMMY WU
6494 LATCHA RD
WALBRIDGE OH 43485

RE: Approval for coverage under Ohio EPA General Permit, STORM WATER ASSOCIATED WITH CONSTRUCTION ACTIVITY.

Dear Applicant:
The Ohio Environmental Protection Agency has received your application for coverage under the above referenced general permit you submitted for:

Notice of Intent (NOI) submitted by: CITY OF TOLEDO
 Co-Permittee NOI submitted by: DASHING PACIFIC GROUP
 Facility Name: RIVERSIDE DRIVE CONSTRUCTION PROJECT
 Facility Street / Location: 1401 FRONT ST COUNTY: Lucas
 Ohio EPA Facility Permit Number: 2G002068*AG TOWNSHIP

You are approved as a co-permittee for coverage under the above referenced Ohio EPA Construction general permit (CGP). Please use this Ohio EPA facility permit number above in all future correspondence. You are not required to terminate your co-permittee coverage. Only the initial NOI Applicant may terminate this Ohio EPA Facility Permit Number.

Please familiarize yourself with your general permit. The permit contains requirements and prohibitions with which you must comply. Coverage remains in effect until a renewal general permit is issued and Ohio EPA has contacted you in writing instructing you to request continuing permit coverage.

Co-Permittees are covered under the same facility permit number as the applicant that submitted the initial NOI. There is no fee associated with the Co-permittee NOI form. You may obtain current forms and instructions from our web site at: <http://www.epa.ohio.gov/swstorm/index.aspx>

If you have any further questions, you should contact one of the following:

OHCP00003 (Statewide CGP) michael.joseph@epa.state.oh.us
 Mike Joseph (614) 752-0782
 OHCP00001 (Big Darby CGP) and OHCP00001 (Olentangy Permit) jason.lyffe@epa.state.oh.us
 Jason Lyffe (614) 728-1793

Or by calling (614) 644-2001 and asking to speak with a member of the Storm Water Unit.

Sincerely,
[Signature]
 Scott J. Nally
 Director

20 West Town Street, Suite 760
P.O. Box 1048
Columbus, OH 43216-1048

614 | 244-3020
614 | 644-3164 (TDD)
www.epa.ohio.gov



Installation of BMPs – Silt Fence





Installation of BMPs – Compost Logs





Borrow Site Preparation and Soil Moving





Site Preparation and Soil Moving





Soil Moving





Coming Soon

- Grading
- Seeding
- Tree Planting
- Rain Garden Maintenance
 - Targeted weeding
 - Repair of drainage structures
 - Excavation activities
 - Replanting
- Watering
- Ongoing testing and assessment
- Education and community outreach

LONG TERM MAINTENANCE PLAN FOR STORMWATER BEST MANAGEMENT PLANS

MARINA DISTRICT
0 RIVERSIDE DRIVE
TOLEDO, OHIO 43605

APRIL 2012

PREPARED FOR:
THE CITY OF TOLEDO
DEPARTMENT OF PUBLIC UTILITIES
DIVISION OF ENVIRONMENTAL SERVICES
348 SOUTH ERIE STREET
TOLEDO, OHIO 43604

AND
THE DASHING PACIFIC GROUP



Marina District Project Benefits

- Addresses real environmental concerns at the property
 - Uses phytoremediation to remedy ongoing erosion issues that jeopardize the health of the Maumee River and Bay and could threaten the cleanup investments already made at this site
- Stabilizes a highly-visible site and gateway to Toledo
 - Protects the investment of new property owners who plan to redevelop the site for mixed use
- Increases safety and property values
- Provides function to rain gardens not fully constructed previously

Questions

The City of Toledo

Joel L. Mazur

Brownfield Coordinator

419.936.3944

Joel.Mazur@toledo.oh.gov

The Mannik & Smith Group, Inc.

Sally L. Gladwell, CP

Senior Project Manager

419.891.2222

SGladwell@MannikSmithGroup.com



The
Mannik & Smith
Group, Inc.