NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
BROWNFIELD CLEANUP PROGRAM (BCP)
ECL ARTICLE 27 / TITLE 14

DEPARTMENT USE ONLY
BCP SITE #:

08/2013

Section I. Requestor Information

NAME Northeast Treaters of New York, LLC

ADDRESS 796 Schoharie Turnpike

CITY/TOWN Athens ZIP CODE 12015

PHONE (518) 945-2660 | FAX (518) 945-2662 | E-MAIL david@netreaters.com

Is the requestor authorized to conduct business in New York State (NYS)? ☑ Yes ☐ No

-If the requestor is a Corporation, LLC, LLP or other entity requiring authorization from the NYS Department of State to conduct business in NYS, the requestor's name must appear, exactly as given above, in the NYS Department of State's Corporation & Business Entity Database. A print-out of entity information from the database must be submitted to DEC with the application, to document that the applicant is authorized to do business in NYS.

-Individuals that will be certifying BCP documents, as well as their employers, meet the requirements of Section 1.5 of DER-10: Technical Guidance for Site Investigation and Remediation and New York State Education Law. **Documents that are not properly certified will not be approved under the BCP.** ☑ Yes ☐ No

NAME OF REQUESTOR'S REPRESENTATIVE David Reed

ADDRESS 796 Schoharie Turnpike

CITY/TOWN Athens ZIP CODE 12015

PHONE (518) 945-2660 | FAX (518) 945-2662 | E-MAIL david@netreaters.com

NAME OF REQUESTOR'S CONSULTANT Rodney Aldrich, P.E., Sterling Environmental Engineering, P.C.

ADDRESS 24 Wade Road

CITY/TOWN Latham ZIP CODE 12110

PHONE (518) 456-4900 | FAX (518) 456-3532 | E-MAIL rodney.aldrich@sterlingenvironmental.com

NAME OF REQUESTOR'S ATTORNEY Kevin M. Young, Esq., Young Sommer LLC

ADDRESS 5 Palisades Drive

CITY/TOWN Albany ZIP CODE 12205

PHONE (518) 438-9907 ext. 225 | FAX (518) 438-9914 | E-MAIL kyoung@youngsommer.com

THE REQUESTOR MUST CERTIFY THAT HE/SHE IS EITHER A PARTICIPANT OR VOLUNTEER IN ACCORDANCE WITH ECL 27-1405 (1) BY CHECKING ONE OF THE BOXES BELOW:

☑ PARTICIPANT
A requestor who either 1) was the owner of the site at the time of the disposal of hazardous waste or discharge of petroleum or 2) is otherwise a person responsible for the contamination, unless the liability arises solely as a result of ownership, operation of, or involvement with the site subsequent to the disposal of hazardous waste or discharge of petroleum.

☐ VOLUNTEER
A requestor other than a participant, including a requestor whose liability arises solely as a result of ownership, operation of or involvement with the site subsequent to the disposal of hazardous waste or discharge of petroleum.

NOTE: By checking this box, the requestor certifies that he/she has exercised appropriate care with respect to the hazardous waste found at the facility by taking reasonable steps to: i) stop any continuing discharge; ii) prevent any threatened future release; and iii) prevent or limit human, environmental, or natural resource exposure to any previously released hazardous waste.

Requestor Relationship to Property (check one):

☐ Previous Owner ☑ Current Owner ☐ Potential /Future Purchaser ☐ Other________________

If requestor is not the site owner, requestor will have access to the property throughout the BCP project. ☐ Yes ☐ No

-Proof of site access must be submitted for non-owners

Section II. Property Information
Check here if this application is to request significant changes to property set forth in an existing BCA: ☐
Existing BCP site number: ____________

PROPERTY NAME Northeast Treaters of New York, LLC

ADDRESS/LOCATION 796 Schoharie Turnpike CITY/TOWN Athens ZIP CODE 12015

MUNICIPALITY(IF MORE THAN ONE, LIST ALL): Town of Athens

COUNTY Greene SITE SIZE (ACRES) 1.68

LATITUDE (degrees/minutes/seconds) 42 ° 17 ' 10 " | LONGITUDE (degrees/minutes/seconds) 73 ° 50 ' 19 "

HORIZONTAL COLLECTION METHOD ☐ SURVEY ☐ GPS ☑ MAP | HORIZONTAL REFERENCE DATUM: NAD 83

COMPLETE TAX MAP INFORMATION FOR ALL TAX PARCELS INCLUDED WITHIN THE PROPERTY BOUNDARIES. ATTACH REQUIRED MAPS PER THE APPLICATION INSTRUCTIONS

Parcel Address	Parcel No	Section No	Block No	Lot No	Acreage
796 Schoharie Turnpike, Athens, NY 12015	104.00-4-30	104.00	4	30	13.17

1. Do the property boundaries correspond to tax map metes and bounds? ☐ Yes ☑ No
   If no, please attach a metes and bounds description of the property.
2. Is the required property map attached to the application? (application will not be processed without map) ☑ Yes ☐ No
3. Is the property part of a designated En-zone pursuant to Tax Law § 21(b)(6)? ☐ Yes ☑ No
   For more information please see Empire State Development's website.
   If yes, identify area (name) ____________
   Percentage of property in En-zone (check one): ☑ 0-49% ☐ 50-99% ☐ 100%
4. Is this application one of multiple applications for a large development project, where the development project spans more than 25 acres (see additional criteria in BCP application instructions)? If yes, identify name of properties in related BCP applications: ____________ ☐ Yes ☑ No

5. Property Description Narrative:

See Attachment 1

6. List of Existing Easements (type here or attach information)

Easement Holder	Description
No easements exist on the subject property.	

7. List of Permits issued by the NYSDEC or USEPA Relating to the Proposed Site (type here or attach information)

Type	Issuing Agency	Description
See Attachment 1		

If any changes to Section II are required prior to application approval, a new page, initialed by each requestor, must be submitted.

Initials of each Requestor: [signature] ______ ______ ______ ______ ______

Section III. Current Property Owner/Operator Information

OWNER'S NAME Northeast Treaters of New York, LLC		
ADDRESS 796 Schoharie Turnpike		
CITY/TOWN Athens	ZIP CODE 12015	
PHONE (518) 945-2660	FAX (518) 945-2662	E-MAIL david@netreaters.com
OPERATOR'S NAME Northeast Treaters of New York, LLC		
ADDRESS 796 Schoharie Turnpike		
CITY/TOWN Athens	ZIP CODE 12015	
PHONE (518) 945-2660	FAX (518) 945-2662	E-MAIL david@netreaters.com

Section IV. Requestor Eligibility Information (Please refer to ECL § 27-1407)

If answering "yes" to any of the following questions, please provide an explanation as an attachment.

1. Are any enforcement actions pending against the requestor regarding this site? ☐ Yes ☑ No
2. Is the requestor subject to an existing order relating to contamination at the site? ☐ Yes ☑ No
3. Is the requestor subject to an outstanding claim by the Spill Fund for this site? ☐ Yes ☑ No
4. Has the requestor been determined to have violated any provision of ECL Article 27? ☐ Yes ☑ No
5. Has the requestor previously been denied entry to the BCP? ☐ Yes ☑ No
6. Has the requestor been found in a civil proceeding to have committed a negligent or intentionally tortious act involving contaminants? ☐ Yes ☑ No
7. Has the requestor been convicted of a criminal offense that involves a violent felony, fraud, bribery, perjury, theft, or offense against public administration? ☐ Yes ☑ No
8. Has the requestor knowingly falsified or concealed material facts or knowingly submitted or made use of a false statement in a matter before the Department? ☐ Yes ☑ No
9. Is the requestor an individual or entity of the type set forth in ECL 27-1407.9(f) that committed an act or failed to act, and such act or failure to act could be the basis for denial of a BCP application? ☐ Yes ☑ No

Section V. Property Eligibility Information (Please refer to ECL § 27-1405)

1. Is the property, or was any portion of the property, listed on the National Priorities List? ☐ Yes ☑ No
   If yes, please provide relevant information as an attachment.
2. Is the property, or was any portion of the property, listed on the NYS Registry of Inactive Hazardous Waste Disposal Sites?
   If yes, please provide: Site #________ Class #________ ☐ Yes ☑ No
3. Is the property subject to a permit under ECL Article 27, Title 9, other than an Interim Status facility? ☐ Yes ☑ No
   If yes, please provide: Permit type:________ EPA ID Number:________
   Date permit issued:________ Permit expiration date:________
4. Is the property subject to a cleanup order under navigation law Article 12 or ECL Article 17 Title 10? ☐ Yes ☑ No
   If yes, please provide: Order #________
5. Is the property subject to a state or federal enforcement action related to hazardous waste or petroleum? ☐ Yes ☑ No
   If yes, please provide explanation as an attachment.

Section VI. Project Description

What stage is the project starting at? ☑ Investigation ☐ Remediation

Please attach a description of the project which includes the following components:

- Purpose and scope of the project
- Estimated project schedule

See Section VI. of Attachment 1.

Section VII. Property's Environmental History

See Section VII. of Attachment 1.

To the extent that existing information/studies/reports are available to the requestor, please attach the following:

1. **Environmental Reports**

A Phase I environmental site assessment report prepared in accordance with ASTM E 1527 (American Society for Testing and Materials: Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process), and all environmental reports related to contaminants on or emanating from the site.

If a final investigation report is included, indicate whether it meets the requirements of ECL Article 27-1415(2): ☐Yes ☐No

2. SAMPLING DATA: INDICATE KNOWN CONTAMINANTS AND THE MEDIA WHICH ARE KNOWN TO HAVE BEEN AFFECTED. LABORATORY REPORTS SHOULD BE REFERENCED AND COPIES INCLUDED.

Contaminant Category	Soil	Groundwater	Surface Water	Sediment	Soil Gas
Petroleum					
Chlorinated Solvents					
Other VOCs					
SVOCs					
Metals	X (See Attachment 1)				
Pesticides					
PCBs					
Other*					

*Please describe: ______________________

3. SUSPECTED CONTAMINANTS: INDICATE SUSPECTED CONTAMINANTS AND THE MEDIA WHICH MAY HAVE BEEN AFFECTED. PROVIDE BASIS FOR ANSWER AS AN ATTACHMENT.

Contaminant Category	Soil	Groundwater	Surface Water	Sediment	Soil Gas
Petroleum					
Chlorinated Solvents					
Other VOCs					
SVOCs					
Metals	x (See Attachment 1)				
Pesticides					
PCBs					
Other*					

*Please describe: ______________________

4. INDICATE KNOWN OR SUSPECTED SOURCES OF CONTAMINANTS (CHECK ALL THAT APPLY). PROVIDE BASIS FOR ANSWER AS AN ATTACHMENT.

☐Above Ground Pipeline or Tank ☐Lagoons or Ponds ☐Underground Pipeline or Tank ☑Surface Spill or Discharge
☑Routine Industrial Operations ☐Dumping or Burial of Wastes ☐Septic tank/lateral field ☐Adjacent Property
☐Drums or Storage Containers ☐Seepage Pit or Dry Well ☐Foundry Sand ☐Electroplating
☐Coal Gas Manufacture ☐Industrial Accident ☐Unknown
Other: ______________________

5. INDICATE PAST LAND USES (CHECK ALL THAT APPLY):

☐Coal Gas Manufacturing ☐Manufacturing ☐Agricultural Co-op ☐Dry Cleaner ☐Salvage Yard ☐Bulk Plant
☐Pipeline ☐Service Station ☐Landfill ☐Tannery ☐Electroplating ☐Unknown
Other: Wood Treatment Facility

6. PROVIDE A LIST OF PREVIOUS PROPERTY OWNERS AND OPERATORS WITH NAMES, LAST KNOWN ADDRESSES AND TELEPHONE NUMBERS AS AN ATTACHMENT. DESCRIBE REQUESTOR'S RELATIONSHIP, IF ANY, TO EACH PREVIOUS OWNER AND OPERATOR. IF NO RELATIONSHIP, PUT "NONE".

Section VIII. Contact List Information	See Section VIII. of Attachment 1.

Please attach, at a minimum, the names and addresses of the following:

1. The chief executive officer and planning board chairperson of each county, city, town and village in which the property is located.
2. Residents, owners, and occupants of the property and properties adjacent to the property.
3. Local news media from which the community typically obtains information.
4. The public water supplier which services the area in which the property is located.
5. Any person who has requested to be placed on the contact list.
6. The administrator of any school or day care facility located on or near the property.
7. In cities with a population of one million or more, the local community board if the proposed site is located within such community board's boundaries (*note: per the 2010 census, New York City is the only city in NY with a population over one million).
8. The location of a document repository for the project (e.g., local library). In addition, attach a copy of a letter sent to the repository acknowledging that it agrees to act as the document repository for the property.

Section IX. Land Use Factors (Please refer to ECL § 27-1415(3))	See Section IX. of Attachment 1.
1. Current Use: ☐Residential ☐Commercial ☑Industrial ☐Vacant ☐Recreational (check all that apply) Provide summary of business operations as an attachment.	
2. Intended Use Post Remediation: ☐Unrestricted ☐Residential ☐Commercial ☑Industrial (check all that apply) Provide specifics as an attachment.	
3. Do current historical and/or recent development patterns support the proposed use? (See #14 below re: discussion of area land uses)	☑Yes ☐No
4. Is the proposed use consistent with applicable zoning laws/maps?	☑Yes ☐No
5. Is the proposed use consistent with applicable comprehensive community master plans, local waterfront revitalization plans, designated Brownfield Opportunity Area plans, other adopted land use plans?	☑Yes ☐No
6. Are there any Environmental Justice Concerns? (See §27-1415(3)(p)).	☐Yes ☑No
7. Are there any federal or state land use designations relating to this site?	☑Yes ☐No
8. Do the population growth patterns and projections support the proposed use?	☑Yes ☐No
9. Is the property accessible to existing infrastructure?	☑Yes ☐No
10. Are there important cultural resources, including federal or state historic or heritage sites or Native American religious sites within ½ mile?	☑Yes ☐No
11. Are there important federal, state or local natural resources, including waterways, wildlife refuges, wetlands, or critical habitats of endangered or threatened species within ½ mile?	☑Yes ☐No
12. Are there floodplains within ½ mile?	☐Yes ☑No
13. Are there any institutional controls currently applicable to the property?	☐Yes ☑No
14. Describe the proximity to real property currently used for residential use, and to urban, commercial, industrial, agricultural, and recreational areas in an attachment. See Section IX. of Attachment 1.	
15. Describe the potential vulnerability of groundwater to contamination that might migrate from the property, including proximity to wellhead protection and groundwater recharge areas in an attachment. See Section IX. of Attachment 1.	
16. Describe the geography and geology of the site in an attachment. See Section IX. of Attachment 1.	

Please see the corresponding section and question number in Attachment 1 for a detailed explanation of answers provided within this form.

Section X. Statement of Certification and Signatures

(By requestor who is an individual)

If this application is approved, I acknowledge and agree to the general terms and conditions set forth in DER-32 *Brownfield Cleanup Program Applications and Agreements* and to execute a Brownfield Cleanup Agreement (BCA) within 60 days of the date of DEC's approval letter. I also agree that in the event of a conflict between the general terms and conditions of participation set forth in DER-32 and the terms contained in a site-specific BCA, the terms in the BCA shall control. I hereby affirm that information provided on this form and its attachments is true and complete to the best of my knowledge and belief. I am aware that any false statement made herein is punishable as a Class A misdemeanor pursuant to section 210.45 of the Penal Law.

Date: ________ Signature: ____________________ Print Name: ____________________

(By an requestor other than an individual)

I hereby affirm that I am President (title) of Northeast Traters of New York, LLC (entity); that I am authorized by that entity to make this application; that this application was prepared by me or under my supervision and direction. If this application is approved, I acknowledge and agree to the general terms and conditions set forth in DER-32 *Brownfield Cleanup Program Applications and Agreements* and to execute a Brownfield Cleanup Agreement (BCA) within 60 days of the date of DEC's approval letter. I also agree that in the event of a conflict between the general terms and conditions of participation set forth in DER-32 and the terms contained in a site-specific BCA, the terms in the BCA shall control. I hereby affirm that information provided on this form and its attachments is true and complete to the best of my knowledge and belief. I am aware that any false statement made herein is punishable as a Class A misdemeanor pursuant to Section 210.45 of the Penal Law.

Date: 10/16/14 Signature: [signature] Print Name: DAVID A. REED

SUBMITTAL INFORMATION:

Three (3) complete copies are required.

- **Two (2)** copies, one paper copy with original signatures and one electronic copy in Portable Document Format (PDF) on a CD, must be sent to:

  Chief, Site Control Section
  New York State Department of Environmental Conservation
  Division of Environmental Remediation
  625 Broadway
  Albany, NY 12233-7020

- **One (1)** paper copy must be sent to the DEC regional contact in the regional office covering the county in which the site is located. Please check our website for the address of our regional offices.

FOR DEPARTMENT USE ONLY

BCP SITE T&A CODE: ____________________ **LEAD OFFICE:** ____________________

ATTACHMENT 1

DETAILED EXPLANATIONS FOR BROWNFIELD CLEANUP PROGRAM APPLICATION

Section I. Requestor Information

New York State (NYS) Authorized Business – The Entity Information Report obtained from the NYS Department of State's Division of Corporations and Business Entity Database is provided as Attachment 2.

Section II. Property Information

Tax Parcel Information – See Attachment 3 for Figures and Maps, and see Attachment 4 for additional property deed and tax information.

2) See Attachment 3 for Figures and Maps.

5) Property Description Narrative - Northeast Treaters of New York, LLC (hereinafter "Northeast Treaters") operates a pressure treated wood manufacturing facility located on approximately 13 acres on the north side of the Schoharie Turnpike in the Town of Athens, New York. The facility was originally constructed in 1977.

   The facility was originally a saw mill. Atlantic Wood Industries, Inc. (AWII) began operating as a pressure treating wood manufacturing facility in 1979. The facility traditionally engaged in treating architectural and dimensional lumber with a preservative solution of chromated copper arsenate (CCA). For a period of time, the facility utilized CCA to pressure treat wood products, however, the facility switched to a non-hazardous preservative in 2003.

   The existing facility consists of three (3) main buildings: the Lumber Stacking Building, the Process Building, and the Maintenance Building. The proposed Brownfield Cleanup area is restricted to the easternmost portion of the subject property in the location of the Process Building, where wood is treated within an 80 foot long by 6 foot diameter treatment cylinder. The Process Building also houses four (4) aboveground tanks, consisting of three (3) 18,000 gallon working tanks and an additional 4,800 gallon tank. These tanks are used to store non-hazardous products used in the pressure treating process. The facility is also equipped with several petroleum bulk storage tanks.

6) No easements exist on the subject property.

7) List of permits issued by the New York State Department of Environmental Conservation (NYSDEC) or United States Environmental Protection Agency (USEPA) relating to the subject property:

Permit	Issuing Agency	Permit ID Number	Status
Chemical Bulk Storage	NYSDEC	4-000073	Unreg./Closed
Petroleum Bulk Storage	NYSDEC	4-075647	Active
Multi-Sector General Permit	NYSDEC	NYR00B991	Active

   Additionally, the facility has the status of an active Conditionally Exempt Small Quantity Generator (CESQG) (USEPA Permit # NYD095240610).

Section III. Current Property Owner/Operator Information

No Explanations Necessary.

Section IV. Requestor Eligibility Information

No Explanations Necessary.

Section V. Property Eligibility Information

2) The subject property can be found in the NYSDEC Environmental Site Remediation Database under site code **420029** and is associated with the Potential Resource Conservation Recovery Act (RCRA) Corrective Action classification code (abbreviated **PR**). This is a specialty classification code that is not related to the NYS Registry of Inactive Hazardous Waste Disposal Sites. This classification code is used for subject property as the property is subject to the requirements of RCRA pursuant to the CESQG permit associated with the subject property. The classification indicates the site is to be investigated and reviewed to determine if RCRA corrective action is necessary.

Section VI. Project Description

The owner seeks to modernize the existing plant while maintaining the current facility use in order to remain competitive, energy-efficient and current with today's health and safety standards. In order to implement the upgrade, the owner must construct a new building and associated spread footers with frost walls and piers. In order to construct spread footers with frost walls and piers, the owner must remove a portion of the existing concrete drip pad.

The key elements/improvements associated with the proposed facility modernization include:

- In-place capping of a 30 ft. by 57 ft. (1,710 square feet) northern section of the existing drip pad with asphalt pavement.
- Constructing a new 88 ft. x 200 ft. drip pad over the remaining portion of the existing drip pad.
- Constructing a new 88 ft. x 200 ft. building (Process Building) over the entire new drip pad.
- Installing modern, efficient pressure treating equipment over a steel containment structure.
- Consolidating existing bulk storage activities in the Process Building inside an improved secondary containment structure.
- Constructing a new 32 ft. x 50 ft. office outside the defined Brownfield Cleanup area to replace the existing offices.
- Limited site grading in the immediate vicinity of the Process Building.
- Implementing a plan to manage stormwater during the construction process.

A detailed project schedule is provided as Attachment 5.

Section VII. Property's Environmental History

1) The site has been extensively studied by NYSDEC, USEPA and the former site owner. These studies include: (a) a 1989 "corrective action prior to loss of interim status" (CAPT LOIS) inspection prepared by A.T. Kearney under contract with USEPA; (b) a 1993 preliminary RCRA facility assessment prepared by TRC under contract with USEPA; and (c) a report entitled *Modified Phase I Environmental Site Assessment and Compliance Audit* dated December 1995 prepared by Groundwater Technology, Inc. at the request of AWII for Northeast Treaters (hereinafter "Phase I Site Assessment"). The Phase I Site Assessment, prepared utilizing American Society for Testing and Materials: Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process (ASTM E 1527), provides a summary of environmental conditions and includes the results of surficial soil sampling at various locations, as well as the installation of borings to a depth of 13-22 feet. Samples were analyzed for total copper, total chromium, total arsenic, TCLP copper, TCLP chromium and TCLP arsenic.

   Surface soils at the site were found to be impacted to varying degree. The Phase I Site Assessment concluded that "In the opinion of Groundwater Technology, based upon our extensive knowledge of environmental conditions at wood preservation facilities, the results of the analyses performed should not be considered to be of environmental concern."

   The Phase I Site Assessment also notes a spill of approximately three (3) pounds of arsenic pentoxide occurred on May 2, 1990. The cleanup was completed under NYSDEC oversight. By letter dated August 21, 1990, the NYSDEC determined the cleanup was complete.

   Of perhaps greater note, as a follow-up to the 1989 CAPT LOIS report, investigations of the site were conducted in 1997 and 1999. The first investigation focused on the area around the sump while the second evaluated broader site conditions. The latter investigation was conducted by KU Resources, Inc. pursuant to a work plan approved by NYSDEC. The final report, entitled *Report of Findings Sampling Visit Work Plan Implementation* dated April 1999 (hereinafter "KU Resources Report") provides a description of the sampling and reported analytical results. The sampling conducted by KU Resources focused on:

   - CCA Solution Recycle Sump (south sump)
   - Treating Cylinder Pit (north sump)
   - Drip Pad
   - Former Underground Tank

   Background sampling was also performed. The KU Resources Report observes that the drip pad is compliant with RCRA Subpart W. The sampling results were interpreted to indicate no evidence of continuing releases. However, certain locations were observed with concentrations consistent with incidental drippage through routine handling of treated lumber and CCA. The report further concludes that the observed CCA in soil is not mobile due to the substantial thickness of natural, low permeability clay unit beneath the gravel fill at the surface. NYSDEC's review of the 1999 investigation and report is summarized by the NYSDEC in a June 13, 2000 letter which concludes the RCRA facility assessment determined that no RCRA corrective action was required and the owner/operator have met all obligations under the RCRA Corrective Action Program. Pursuant to the letter, residual contamination at the property is to be addressed by a closure program implemented at cessation of operations.

On June 23, 2014, Sterling Environmental Engineering, P.C. (STERLING) conducted focused sampling of the existing concrete drip pad and subsurface soils associated with the Northeast Treaters facility. The findings of this sampling investigation was summarized in the *Sampling for Chromium and Arsenic in Drip Pad Concrete and Subsoils* report and incorporated into the *Drip Pad Work Plan*, May 16, 2014 and revised September 3, 2014.

The results of the sample investigation can be interpreted to conclude that, during potential facility upgrades, portions of the concrete to be removed from the existing drip pad will be managed as a hazardous waste and must also be treated to meet the Universal Treatment Standards (UTS) to achieve compliance with the Land Disposal Restrictions (LDRs) prior to land disposal. Additionally, soils from beneath and adjacent to the drip pad removed during construction will be managed as non-hazardous solid waste, unless otherwise beneficially used within the Area of Concern.

All previous environmental reports associated with the subject property may be found in Attachment 6.

2) Sample data discussed in STERLING's *Sampling for Chromium and Arsenic in Drip Pad Concrete and Subsoils* report and *Drip Pad Work Plan* are summarized in Tables 1-3.

   Sample data discussed in the KU Resources Report are summarized in Tables 4 and 5.

   A statistical evaluation of the sample data discussed in the Phase I Assessment is summarized in Table 6.

   The complete analytical reports associated with these summary tables are provided as Attachment 7. Note the analytical report associated with the Phase I Assessment is unavailable; however, sample data is provided within the Phase I assessment Report contained in Attachment 6.

Table 1: Concrete Sample Results - TCLP Metals

Northeast Treaters

June 23, 2014

Parameter	Arsenic (mg/L)		Chromium (mg/L)	
Debris Rule / Universal Treatment Standard	5		0.6	
Sample				
C-1A	0.0062	J B	**5.7**	B
C-1B	0.015	J B	**5.3**	B
C-1C	0.034	J B	**0.83**	B
C-2A	0.0054	J B	0.14	J B
C-2B	0.0069	J B	0.058	J B
C-2C	0.0073	J	0.077	J B
C-3A	0.0058	J B	**4.3**	B
C-3B	0.0060	J B	0.25	J B
C-3C	0.013	J B	**0.88**	B
C-4A	0.0063	J B	**6.9**	B
C-4B	0.013	J B	0.073	J B
C-4C	0.037	J B	0.12	J B

Bold indicates Debris Rule exceedance

B - Compound was found in the blank and sample

J - Result is less than the reporting limit but greater than or equal to the method detection limit and the concentration is an approximate value.

Table 2: Soil Sample Results - TCLP Metals
Northeast Treaters
June 23, 2014

Parameter	Arsenic (mg/L)		Chromium (mg/L)	
Contained-in Determination Level	50		6	
Sample				
S-1A	0.85	B	0.054	J B
S-1B	0.059	J B	0.080	J B
S-1C	0.0077	J B	0.0084	J B
S-1D	0.019	J B	0.0073	J B
S-1E	0.010	J B	0.0069	J B
S-2A	0.011	J B	0.0068	J B
S-2B	0.0078	J B	0.0072	J B
S-2C	0.0094	J B	0.0067	J B
S-2D	0.0075	J B	0.014	J B
S-2E	0.0068	J B	0.0064	J B
S-3A	0.011	J B	0.018	J B
S-3B	0.0047	J B	0.0074	J B
S-3C	0.0062	J B	0.0066	J B
S-3D	0.0083	J B	0.0074	J B
S-3E	0.0095	J B	0.0086	J B
S-4A	0.016	J B	0.0077	J B
S-4B	0.25	J B	0.032	J B
S-4C	0.17	J B	0.010	J B
S-4D	0.21	J B	0.013	J B
S-4E	0.27	J B	0.015	J B

Bold indicates Contained-in Determination Level exceedance

B - Compound was found in the blank and sample

J - Result is less than the reporting limit but greater than or equal to the method detection limit and the concentration is an approximate value.

Table 3: Soil Sample Results - Total Recoverable Metals
Northeast Treaters
June 23, 2014

Parameter	Arsenic (mg/kg)	Chromium (mg/kg)
Restricted Use Soil Cleanup Objectives	Commerical/Industrial: 16	(Hexavalent/Trivalent) Commercial: 400/1,500 Industrial: 800/6,800
Sample		
S-1A	**1430**	1060
S-1B	**95.3**	316
S-1C	6.7	20.6
S-1D	**17.1**	37.3
S-1E	9.2	25.6
S-2A	**26.0**	11.7
S-2B	10.1	20.8
S-2C	8.0	17.3
S-2D	7.2	17.3
S-2E	8.4	16.7
S-3A	**56.8**	76.5
S-3B	7.5	24.9
S-3C	9.0	29.8
S-3D	6.7	19.9
S-3E	7.0	22.9
S-4A	**78.0**	55.0
S-4B	**39.7**	66.8
S-4C	**53.2**	46.2
S-4D	**64.1**	40.7
S-4E	**52.6**	47.3

Bold indicates Commercial Use Soil Cleanup Objective (SCO) exceedance

Table 4: Analytical Results Results
Northeast Treaters
November 1998
(Obtained from KU Resources Report)

Location	Depth Interval (ft.)	Soil Material	Arsenic (mg/kg)	Total Chromium (mg/kg)	Hexavalent Chromium (mg/kg)
Background					
C-B	3.5 - 4.0	Clay	6.6	29	<2.5
South Sump					
C-5	4.5 - 5.5	Fill	7.5	39.9	<2.4
C-7	6.5 - 7.0	Fill	70.9	46.5	<2.2
C-7	7.0 - 7.5	Clay	10.6	41.8	<2.6
C-9	7.0 7.5	Fill	50.9	29.8	<2.1
C-9	7.5 - 8.0	Clay	6.7	36.9	<2.6
North Sump					
C-4	6.25 - 6.5	Fill	246	155	10
C-4	7.0 - 7.5	Clay	6.2	40.5	3.4
C-14	1.5 - 2.0	Fill	911	120	30.5
C-14	2.0 - 2.5	Clay	23.8	48.8	<2.6
C-10	7.0 - 7.5	Fill	404	312	42
C-10	7.5 - 8.0	Clay	21.3	348	4.3
Drip Pad					
C-11	2.5 - 3.0	Fill	74.1	21.4	<2.1
C-11	3.0 - 3.5	Clay	10.8	42.8	<2.5
C-15	2.5 - 3.0	Fill	75	28.3	3.4
C-15	3.0 - 3.5	Clay	8.5	40.8	<2.5
C-12	2.0 - 2.5	Fill	9.2	730	<2.1
C-12	2.5 - 3.0	Clay	41.7	108	<2.5
C-13	1.5 - 2.0	Fill	71.7	84.7	3.8
C-13	2.0 - 2.5	Clay	6.9	32.8	<2.5
Underground Tank					
C-1	14.5 - 15.5	Fill	5.4	22.3	<2.5
C-1	15.5 - 16.0	Clay	8.6	34.2	<2.8
C-2	4.5 - 5.0	Fill	192	229	17.6
C-2	5.0 - 5.5	Clay	28.6	79.1	<2.6
C-3	4.25 - 4.5	Fill	662	580	21.6
C-3	4.5 - 5.25	Clay	22.1	47	<2.7
C-6	13.5 - 14.0	Fill	16	41.9	<2.4
C-6	14.0 - 14.5	Clay	8.5	42.5	<2.7
C-8	6.0 - 6.5	Fill	25.2	99	3.5
C-8	6.5 - 7.0	Clay	9.5	36.4	<2.7

Table 5: Summary of Soil Boring Sample Results
Northeast Treaters
October 1995
(Obtained from KU Resources Report)

	BK-1	B-3	B-4	B-5	B-2	B-1	B-9	B-7	B-6	B-8
Arsenic	< 2.85	< 2.9	< 2.88	< 2.82	< 2.87	< 2.87	<3.25	< 2.95	< 2.95	< 2.86
Chromium	24	25.9	29	23.8	28.6	25.5	24.5	27.5	32.7	42.3
Hexavalent Chromium	< 4.98	< 5.23	< 5.37	< 5.26	<5.47	< 5.16	< 5.27	< 5.24	< 5.18	< 4.9

(All Table 5 results in mg/kg)

Table 6: Statistical Evaluation of Soil Data
Comparison of Soil Metals Concentrations to Site Background
Northeast Treaters
June 1997
(Obtained from Phase I Assessment)

	Background	Site	t	Significance
Arsenic	4.6 (0.4)	16.1 (26.6)	0.60	NS
Chromium	33.0 (1.2)	32.1 (16.9)	-0.07	NS
Copper	33.0 (1.2)	26.6 (6.3)	-1.39	NS

Values represent mean (standard deviation)

t-statistic compared to t (0.95, 23) = 1.714 concentrations are greater than background if t-statistic is greater than t (0.95, 23)

NS - Not Significant

3) A review of the subject property's environmental history suggests that the property was extensively utilized as a wood treatment facility since it was initially developed in the mid-1970s. CCA was the primary preservative solution utilized by the facility until 2003 when the facility switched to a non-hazardous preservative. As such, CCA is the only suspected and known contaminant.

4) A review of the subject property's environmental history suggests that the property was extensively utilized as a wood treatment facility since it was initially developed in the mid-1970s. CCA was the primary preservative solution utilized by the facility until 2003 when the facility switched to a non-hazardous preservative. As such, there is reason to believe that contamination resulted from routine industrial handling of CCA and incidental spills and discharges associated with facility operations.

5) The property was extensively utilized as an industrial scale wood treatment facility since it was initially developed in the mid-1970s. For additional information refer to the Modified Phase I Report, dated December 1995, prepared by Groundwater Technology, Inc. and provided in Attachment 6.

6) Previous Owners: It is estimated that industrial activities at the subject property began in the mid-1970's when the subject property was transferred to Cross, Austin, & Ireland Lumber Co. by Erich A. Schubert & Karl O. Nie (no contact information available). The Modified Phase I suggests that the facility was built by Koppers Company, Inc. (contact info provided below). The subject property was acquired by AWII in 1978. Northeast Treaters obtained ownership of the subject property in January 1996 (see Attachment 4 for the Ownership Card associated with the subject property).

Facility Constructed By:
Koppers, Inc. (Formerly Koppers Company, Inc.)
436 Seventh Avenue
Pittsburgh, Pennsylvania 15219
Phone: (412) 227-2001
(Requestor's Relationship: None)

Owner and Operator between 1975 and 1978:
Cross, Austin, and Ireland Lumber Company (Defunct)
1246 Grand Street
Brooklyn, New York 11211
Phone: Unavailable
(Requestor's Relationship: None)

Owner and Operator between 1978 and 1996:
Atlantic Wood Industries, Inc.
P.O. Box 1608
Savannah, Georgia, 31402
Phone: (912) 964-1234
(Requestor's Relationship: None)

Note, Cox Industries, Inc. completed an asset purchase of AWII's wood treating plants and related operations in July 2012. Contact information for Cox Industries, Inc. is as follows:

Cox Industries, Inc.
860 Cannon Bridge Road
Orangeburg, South Carolina 29115
Phone: (803) 534-7467
(Requestor's Relationship: None)

Section VIII. Contact List Information/Site Contact List (SCL)

1) Greene County:

Shaun S. Groden
County Administrator
411 Main Street
Catskill, New York 12414

Warren Hart
Director of Economic Development, Tourism & Planning
411 Main Street
Catskill, New York 12414

Town of Athens:

Joseph Iraci
Town Supervisor
2 First Street
Athens, New York 12052

Hal Brodie
Town Planning Board Chairman & Member
2 First Street
Athens, New York 12052

2) Site Property:

Tax ID:	104.00-4-30
Property Address:	796 Schoharie Turnpike Athens, New York 12015
Owner:	Northeast Treaters of New York, LLC. 796 Schoharie Turnpike, Athens, New York 12015
Occupants:	Industrial Property/Owner Occupied

Adjacent Property to the North:

Tax ID:	104.00-4-32
Property Address:	243 Flats Road Athens, New York, 12015
Owners:	Thomas Mc Manus and Allison Smith 243 Flats Road, Athens, New York 12015
Occupants:	Owner Occupied

Adjacent Property to the East:

Tax ID:	104.00-4-40
Property Address:	722 Schoharie Turnpike Athens, New York 12015
Owners:	David Hazen and Belkis Hazen 722 Schoharie Turnpike, Athens, New York 12015
Occupants:	Owner Occupied

Adjacent Property to the Southeast:

Tax ID:	104.00-4-26
Property Address:	770 Schoharie Turnpike Athens, New York 12015
Owners:	Charles Ford and Heather Ford 80 East Maple Ave, Suffern, New York 10901
Occupants:	Commercial Property (listed for sale)

Adjacent Property to the South:

Tax ID:	104.00-4-27.1
Property Address:	749 Schoharie Turnpike Athens, New York 12015
Owners:	Greene County IDA 270 Mansion Street, Coxsackie, New York 12051
Occupants:	Industrial Property/Owner Occupied

Adjacent Property to the Southwest:

Tax ID:	104.00-4-27.2
Property Address:	763 Schoharie Turnpike Athens, New York 12015
Owners:	Greene County IDA 270 Mansion Street, Coxsackie, New York 12051
Occupants:	Industrial Property/Owner Occupied

Adjacent Property to the West:

Tax ID:	104.00-4-39
Property Address:	296 Route 28 Athens, New York 12015
Owners:	Central Hudson Gas & Electric 284 South Avenue, Poughkeepsie, New York 12602
Occupants:	Vacant

3) Local news media:

Register-Star
1 Hudson City Centre
Suite 202
Hudson, NY 12534
Phone: (518) 828-1616
Email: editorial@registerstar.com

4) Public Water Supply:

Athens Village (PWS ID: 1900024)
Mayor Christian Pfister and Village Board
2 First Street
Athens, NY 12015
E-Mail: christianp@mhcable.com

5) No person has requested to date to be placed on the contact list.

6) No school or day care facility is located within one (1) mile of the project site.

7) Not applicable.

8) Repository:

Ms. Bonnie Snyder
Library Director
D.R. Evarts Library
80 Second Street
Athens, New York 12015

See Attachment 8 for a copy of the letter submitted to the D.R. Evarts Library acknowledging that it agrees to act as the document repository for the subject property.

Section IX. Land Use Factors

1) The subject property is zoned and currently used as industrial.

   Wood product is currently treated within an 80 foot long by 6 foot diameter treatment cylinder in the Process Building. The cylinder is filled with a non-hazardous preservative solution and a vacuum is created to draw solution into the wood. After treatment under pressure, a vacuum in the cylinder extracts excess solution from the wood. After being removed from the cylinder, the wood is stacked in the Process Building.

   The drip pad, including the concrete floor under the treatment cylinder, drains to a concrete sump. The entire existing drip pad is contained within the building. Sumps, located at each end of the treatment tube, collect excess solution from the treatment process and from the drip pad for recycling back into the wood treatment process. The sumps are constructed of concrete and are approximately 8 feet by 8 feet by 3 feet deep.

2) The intended use of the subject property is industrial for wood product treatment.

3) Yes. Also see answer to #14 below.

4) Yes. The Greene County Existing Land Use Map (see Attachment 3), dated June 2007, recognizes the past and current industrial use of the subject property. The post remediation property use is not proposed to change. The site is currently used for industry, is zoned for industrial use, and plans on continuing to be utilized for industrial purposes (see Attachment 9) after remediation.

5) Yes. Chapter Seven (7), *Industrial Sites and Facilities*, of the Greene County Comprehensive Economic Development Plan, dated July 2007, discusses a plan to establish an Industrial Park in Athens at and around the location of the subject property (see bottom of page 7-8 of Attachment 9).

6) No, there are no environmental justice concerns (see Attachment 10).

7) The subject property is designated as an Empire Zone [economic development zone] by New York State's Empire State Development (see the County's Tax Map provided in Attachment 3).

8) Yes. Also note the estimated Greene County population decreased slightly in 2012 – 2013.

9) Yes. The subject property is within one (1) mile from access to U.S. Route 9W, and is served by public water, electrical, and natural gas services. The facility currently utilizes an onsite septic system. Chapter Seven (7), *Industrial Sites and Facilities*, of the Greene County Comprehensive Economic Development Plan (see Attachment 9), dated July 2007, suggests there is a future potential to extend the municipal sewer system to serve the industrial park population of Athens where the Northeast Treaters Facility is located. Rail lines are located approximately 750 feet to the west of the subject property.

10) Yes, see map in Attachment 11. The map shows a half-mile buffer (dashed red line) around the subject property; NYS Office of Parks, Recreation and Historic Preservation (OPRHP) archaeological sensitivity buffer areas (hashed lines with goldenrod border); and geocoded built resources in NYS OPRHP's inventory (black, red, and green squares). Note, the exact location of recorded archaeologic resources is not provided due to the sensitivity of these sites, and a buffer

distance of one-tenth mile to a half-mile is applied to each recorded archaeological resource depending on site classification. Below is a list of NYS OPRHP archaeological sensitive buffer areas within a half-mile of the property:

USN #	Name	Type
03902.000007	POSSIBLE MOUND SITE, 2 LOCATIONS, SM#432	Precontact
03902.000222	ATHENS COMPRESSOR-ATHENS AIRSTRIP SITE (LOCI 1-16)	Precontact
03902.000282	Peckham Locus 1 Precontact Site	Precontact
03902.000283	Peckham Locus 2 Precontact Site	Precontact

No other known cultural resources are located within a half-mile of the site.

11) Yes. The site is located within a half-mile of Federal and State regulated Wetlands (Wetland No. HN-108; see Attachment 12). Further, the NYSDEC Nature Explorer tool indicates that the Stiff-Leaf Goldenrod, a flowering plant species, may be observed to the west of the project site. The Stiff-Leaf Goldenrod is listed as threatened in New York State, however, it is not listed Federally. Additional information regarding the Stiff-Leaf Goldenrod is provided as Attachment 12. No other important natural resources, including wildlife refuges and/or critical habitats, are located within a half-mile of the project site.

12) No. The subject property is not located within a half-mile of a floodplain. The subject property is mapped on the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) Number 36039C0287F. The area surrounding the subject property is mapped on FEMA FIRM Numbers 36039C0288F, 36039C0289F, and 36039CIND0A. FEMA FIRM Maps are provided as Attachment 13.

13) No institutional controls are applicable to the subject property.

14) Industrial sites adjacent to the property are located to the south and southwest. One Commercial site is located adjacent to the property to the southeast. Two (2) adjacent sites, located to the north and east of the subject property, are zoned residential. The adjacent site located to the west of the subject property is currently vacant. General land use within a half-mile of the subject property consists of a combination of industrial, commercial, residential, vacant, agricultural, and public services (see the *Existing Land Use Map* provided within Attachment 3). Note, sites adjacent to the subject property located to the east, north, west, southwest, and south are designated Empire Zones (see the County Tax Map provided in Attachment 3).

15) There are no known wellhead protection areas or groundwater recharge areas in the vicinity of the subject property [Source: Jane Thapa, Public Health Engineer at the New York State Department of Health; Tel. (518) 402-7711].

16) The geography and geology is summarized as follows:

The subject property slopes slightly towards the west as the easternmost portion of the property is located at an elevation of approximately 140 feet above mean sea level (amsl) and the westernmost portion of the property is located at an elevation of approximately 130 feet amsl. The surrounding topography located a half-mile to the north, south, and west of the subject property is relatively flat and is at an elevation between 130 and 150 feet amsl. The area located a half-mile to the east of the subject property is at an elevation of approximately 200 feet amsl and slopes west towards the subject property.

The nearest surface water, a tributary to Murderers Creek, is located approximately 1,000 feet to the north of the subject property. Murderers Creek, a regulated Class C waterbody, is located approximately 1.6 miles to the north of the subject property and flows towards Sleepy Hollow Lake, located approximately 1.6 miles to the east of the subject property.

The geology of the site consists of Covington and Madalin soils to the west and Kingsbury and Rhinebeck soils to the east. The soils are derived from glaciolacustrine deposits and may be described as poorly drained with varying transmissivities. A complete Soil Resource Report obtained from the United States Department of Agriculture's Web Soil Survey is provided as Attachment 14.

Section X. Statement of Certification and Signatures

No Explanations Necessary.

2014-08\Brownfield Cleanup App\Attachment 1 - Application Explanation_100614.doc

ATTACHMENT 2

ENTITY INFORMATION REPORT FROM NYS DEPARTMENT OF STATE DIVISION OF CORPORATIONS & BUSINESS ENTITY DATABASE

NYS Department of State

Division of Corporations

Entity Information

The information contained in this database is current through September 29, 2014.

Selected Entity Name: NORTHEAST TREATERS OF NEW YORK, LLC
Selected Entity Status Information

Current Entity Name:	NORTHEAST TREATERS OF NEW YORK, LLC
DOS ID #:	1991683
Initial DOS Filing Date:	JANUARY 19, 1996
County:	GREENE
Jurisdiction:	NEW YORK
Entity Type:	DOMESTIC LIMITED LIABILITY COMPANY
Current Entity Status:	ACTIVE

Selected Entity Address Information

DOS Process (Address to which DOS will mail process if accepted on behalf of the entity)

NORTHEAST TREATERS OF NEW YORK, LLC
796 SCHOHARIE TURNPIKE
ATHENS, NEW YORK, 12015

Registered Agent

NONE

This office does not require or maintain information regarding the names and addresses of members or managers of nonprofessional limited liability companies. Professional limited liability companies must include the name(s) and address(es) of the original members, however this information is not recorded and only available by viewing the certificate.

***Stock Information**

# of Shares	Type of Stock	$ Value per Share
No Information Available		

*Stock information is applicable to domestic business corporations.

Name History

Filing Date	Name Type	Entity Name
JAN 19, 1996	Actual	NORTHEAST TREATERS OF NEW YORK, LLC

A **Fictitious** name must be used when the **Actual** name of a foreign entity is unavailable for use in New York State. The entity must use the fictitious name when conducting its activities or business in New York State.

NOTE: New York State does not issue organizational identification numbers.

ATTACHMENT 3

SITE LOCATION MAP

SUBJECT PROPERTY MAP

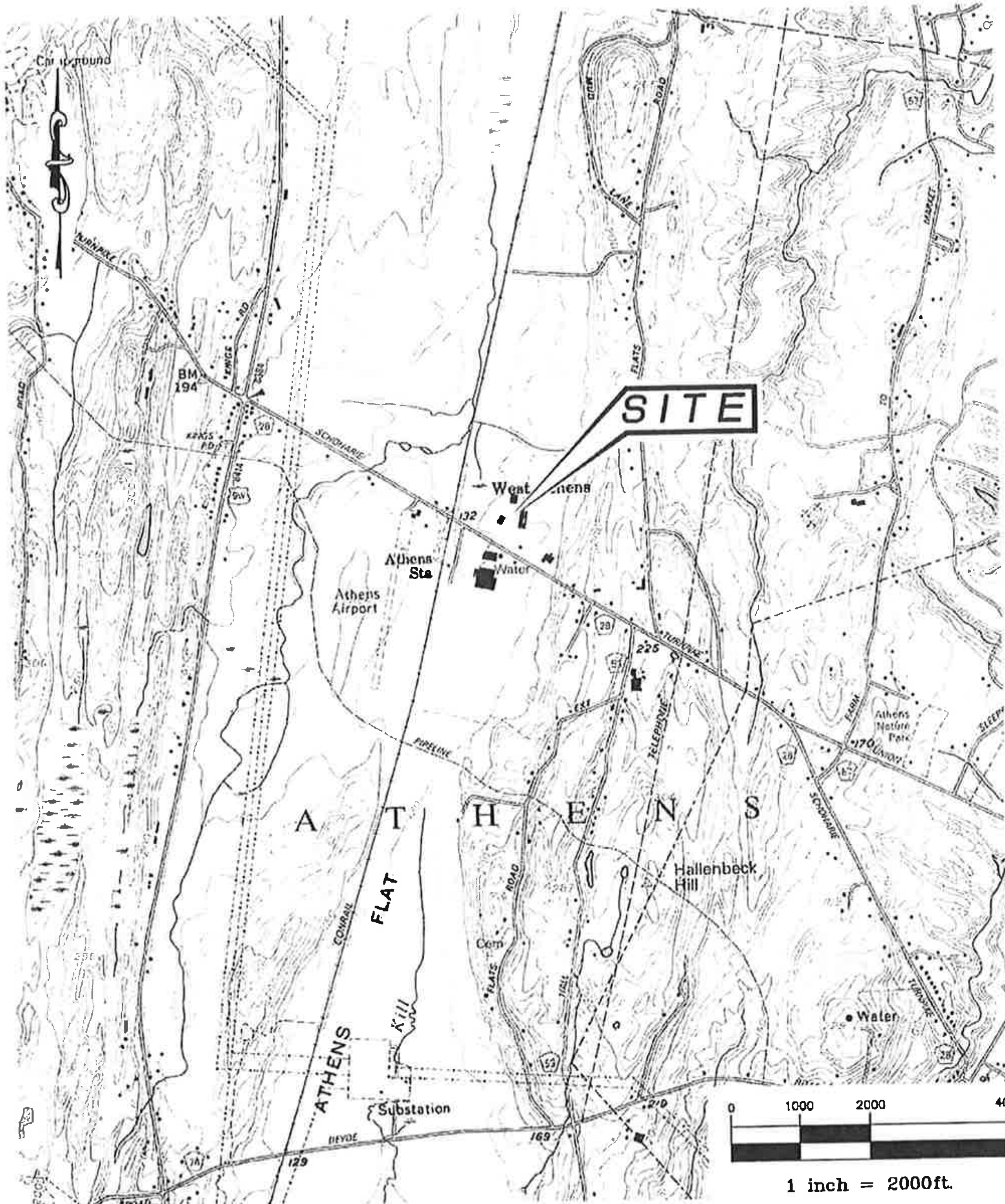
BROWNFIELD SITE MAP

COMPREHENSIVE PLAN RECOMMENDATIONS MAP EXCERPT

EXCERPT OF TAX MAP
(TOWN OF ATHENS, GIS PUBLIC ACCESS DATABASE MAP)

GREENE COUNTY EXISTING LAND USE MAP

GREENE COUNTY SEWER AND WATER DISTRICT MAP



MAP REFERENCE: NYSDOT HUDSON NORTH QUADRANGLE, 1995.

STERLING

Sterling Environmental Engineering, P.C.

24 Wade Road ♦ Latham, New York 12110

SITE LOCATION MAP

TOWN OF ATHENS

GREENE CO., N.Y.

PROJ. No.: 2014-08	DATE: 4/21/14	SCALE: 1" = 2000'	DWG. NO. 2014-08001	FIGURE 1

LEGEND:

— - - — APPROXIMATE PROPERTY BOUNDARY

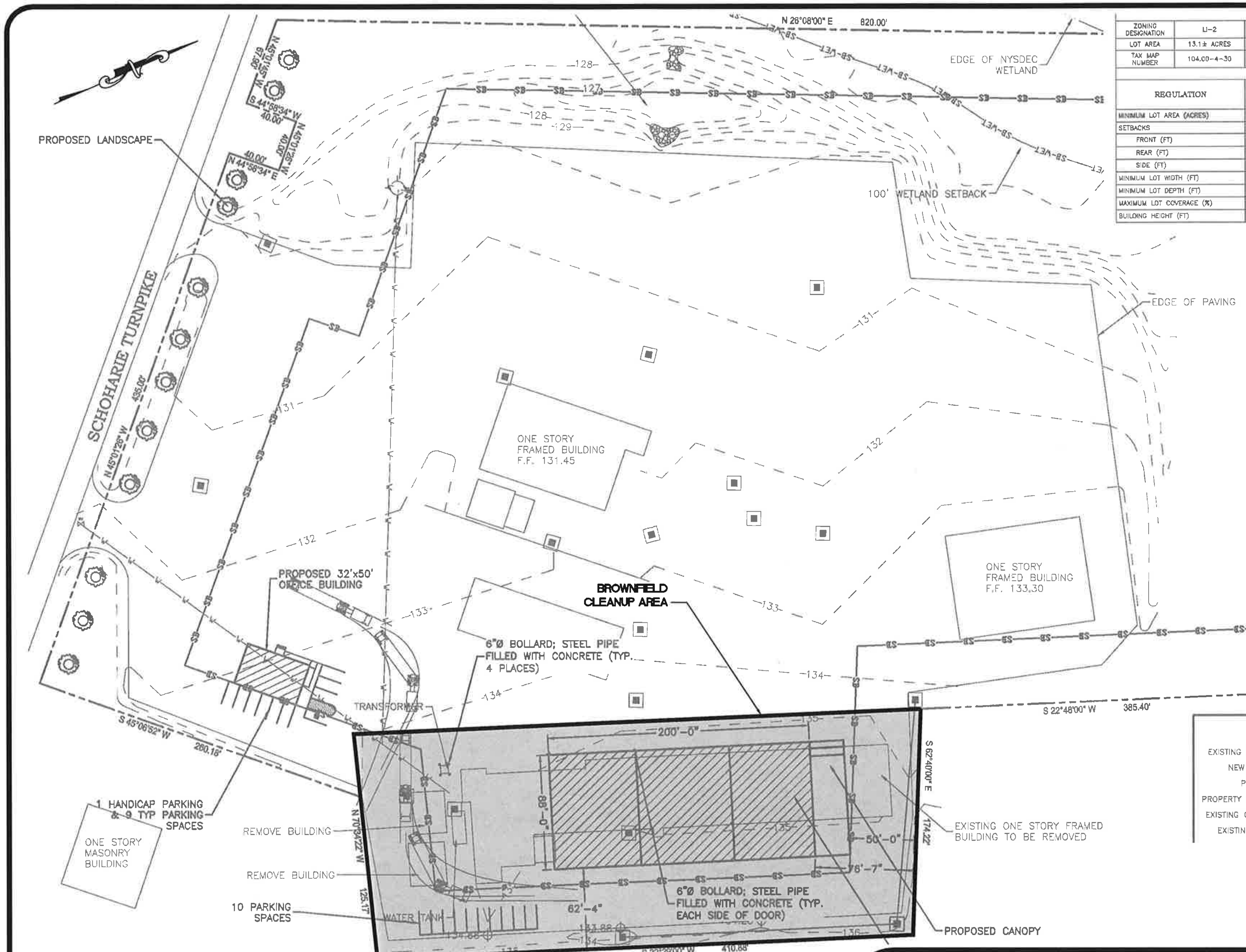
0 100 200 400

1 inch = 200 ft.

MAP REFERENCE: NEW YORK STATEWIDE DIGITAL ORTHOIMAGERY PROGRAM, PHOTOGRAPHY CIRCA 2013

STERLING Sterling Environmental Engineering, P.C. 24 Wade Road • Latham, New York 12110	SUBJECT PROPERTY MAP TOWN OF ATHENS GREENE CO., N.Y.

PROJ. No.: 2014-08	DATE: 4/21/14	SCALE: 1" = 200'	DWG. NO. 2014-08002	FIGURE 2



ZONING DESIGNATION	LI-2	LIGHT INDUSTRIAL - 2			
LOT AREA	13.1± ACRES	570,136± SF			
TAX MAP NUMBER	104.00-4-30				

REGULATION		REQUIRED	EXISTING	PROPOSED TREATMENT BLDG	PROPOSED OFFICE
MINIMUM LOT AREA (ACRES)		2	13±	13±	13±
SETBACKS					
FRONT (FT)		100	325	385±	298
REAR (FT)		50	19±	77	327
SIDE (FT)		50	92±	62	118
MINIMUM LOT WIDTH (FT)		50	420	420	420
MINIMUM LOT DEPTH (FT)		200	835	835	835
MAXIMUM LOT COVERAGE (%)		50	62	62	62
BUILDING HEIGHT (FT)		45		LESS THAN 45	LESS THAN 45

GENERAL NOTES:

G-1) PLAN BASED ON SURVEY MAP BY THE CHAZEN COMPANIES ENTITLED "EXISTING CONDITIONS" DATED 09/17/97 & "GRADING AND EROSION CONTROL PLAN" DATED 06/23/98. PROJECT NO. 39741.00.

G-2) CONTRACTOR TO LOCATE EXISTING UTILITIES PRIOR TO CONSTRUCTION; CONTACT DIG SAFELY NEW YORK (1-800-962-7962) AND RECORD FILE #. VERIFY BUILDING CONNECTIONS, LOCATION AND ELEVATION, PRIOR TO INITIATING CONSTRUCTION; CONFLICTS OR DISCREPANCIES SHALL BE REPORTED TO THE OWNER OR ENGINEER IMMEDIATELY. NOTIFY ENGINEER IMMEDIATELY IF SITE CONDITIONS ARE NOT AS INDICATED.

G-3) THERE ARE NO STREAMS ON THE PROPERTY.

G-4) THE AREA OF SOIL TOO BE DISTURBED IS LESS THAN ONE ACRE.

LEGEND:

EXISTING / BY OTHERS:
NEW / PROPOSED:
PROPERTY LINE:
PROPERTY LINE SETBACK: —SB—SB—SB—SB—
EXISTING CONTOUR LINE: — — — 100 — — —
EXISTING WATER LINE: —V—V—V—V—

MAP REFERENCES:

1. BASE MAP: IS FROM DRAWING ENTITLED "SITE PLAN," BY K A MARTIN ENGINEER, PLLC, WITH REVISION DATE OF NOVEMBER 15, 2013.

0 40 80 160

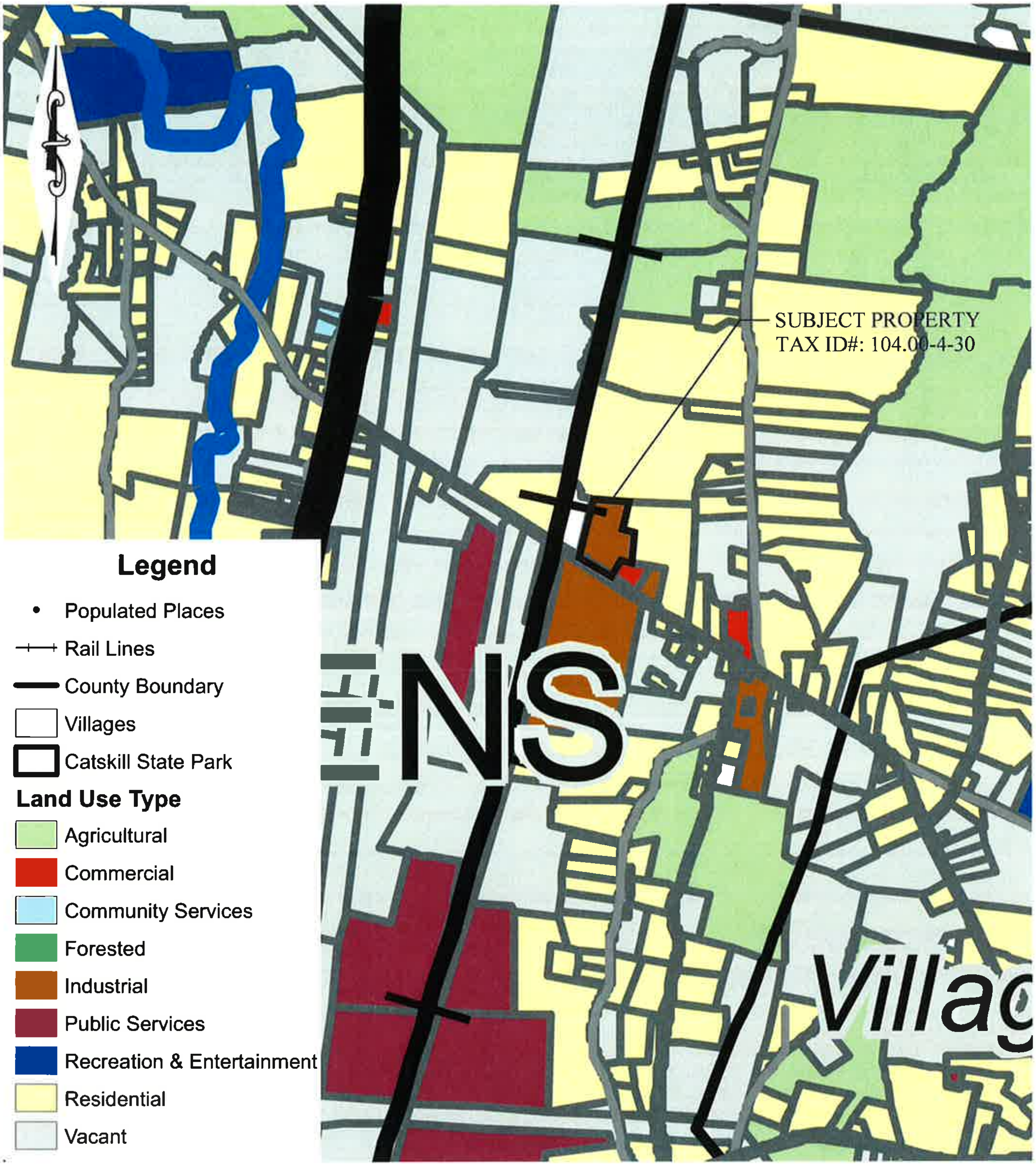
1 inch = 80 ft.

STERLING
Sterling Environmental Engineering, P.C.
24 Wade Road ♦ Latham, New York 12110

BROWNFIELD SITE
NORTHEAST TREATERS
SCHOHARIE TURNPIKE

TOWN OF ATHENS GREENE CO., N.Y.

PROJ. No.: 2014-08	DATE: 10/1/14	SCALE: 1" = 80'	DWG. NO. 2014-08005	FIGURE 3



DRAWING REFERENCE: BASE MAP FROM DRAWING ENTITLED GREENE COUNTY EXISTING LAND USE FROM GREENE COUNTY DEPARTMENT OF ECONOMIC DEVELOPMENT

S:\Drawings\2014-08 - Northeast Treaters of New York - Athens NY\2014-XX006 ZoningMap.dwg10/3/2014 11:32 AM

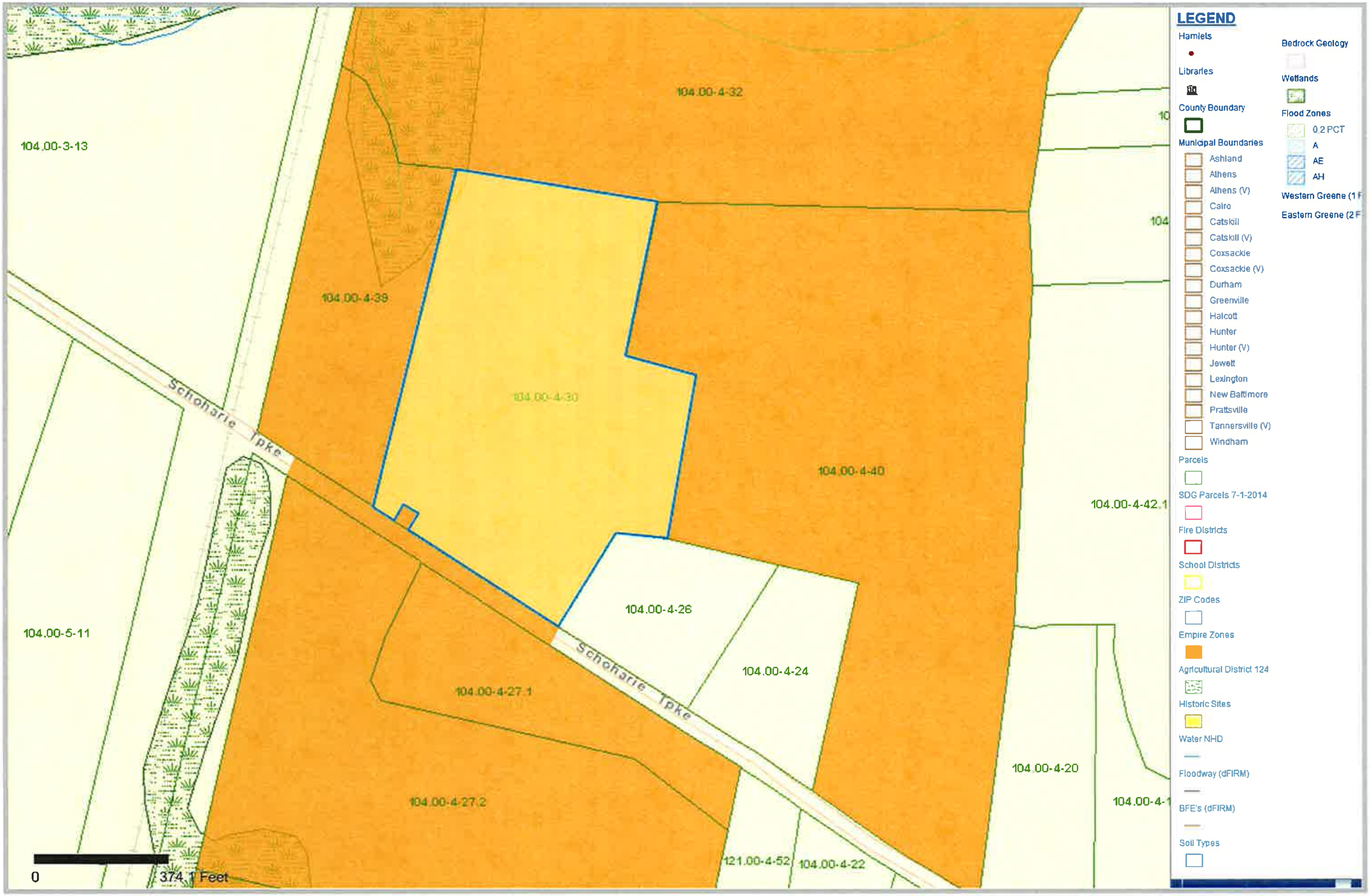
STERLING
Sterling Environmental Engineering, P.C.
24 Wade Road ♦ Latham, New York 12110

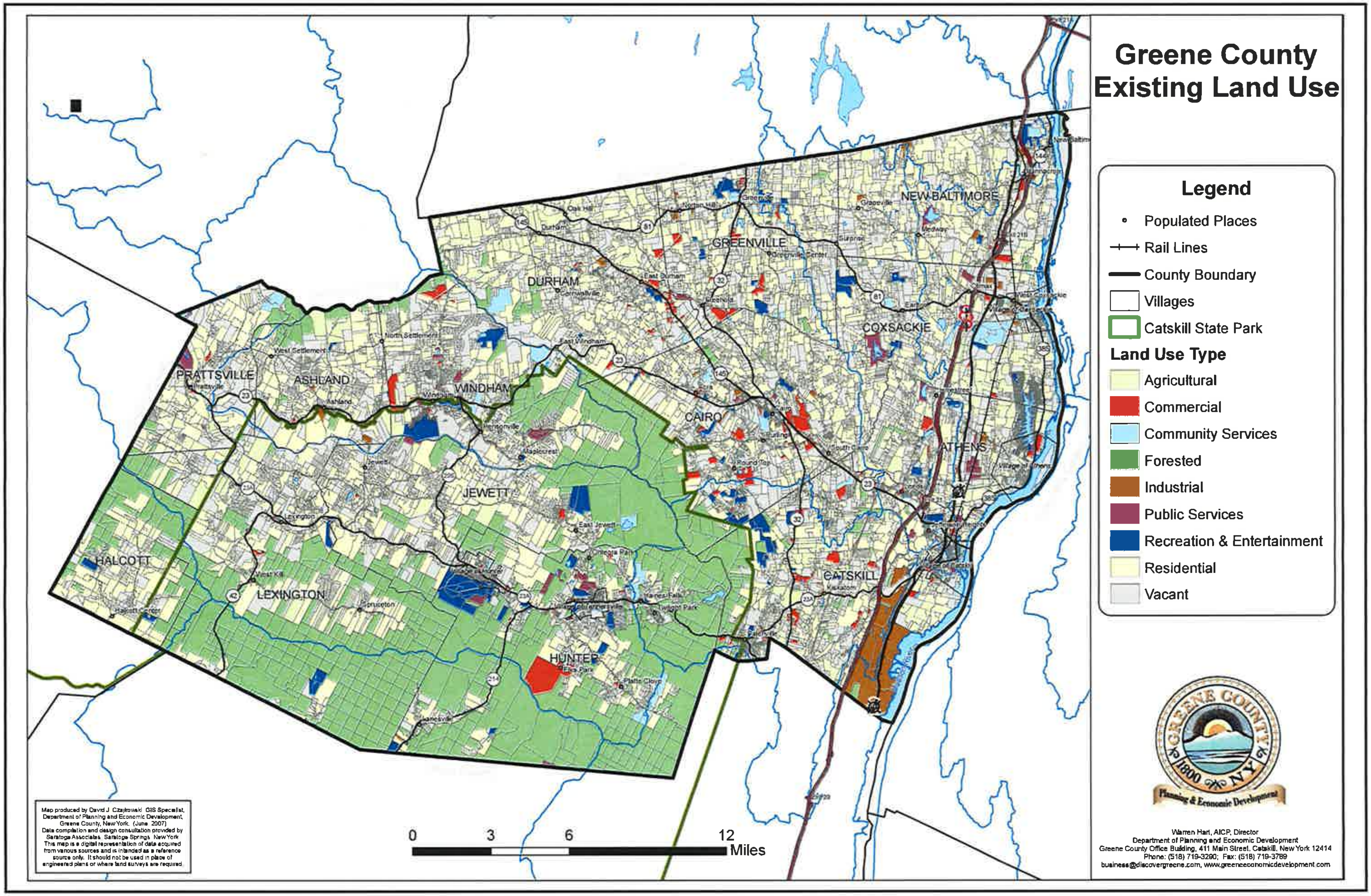
COMPREHENSIVE PLAN RECOMMENDATIONS
MAP EXCERPT
NORTHEAST TREATERS
SCHOHARIE TURNPIKE

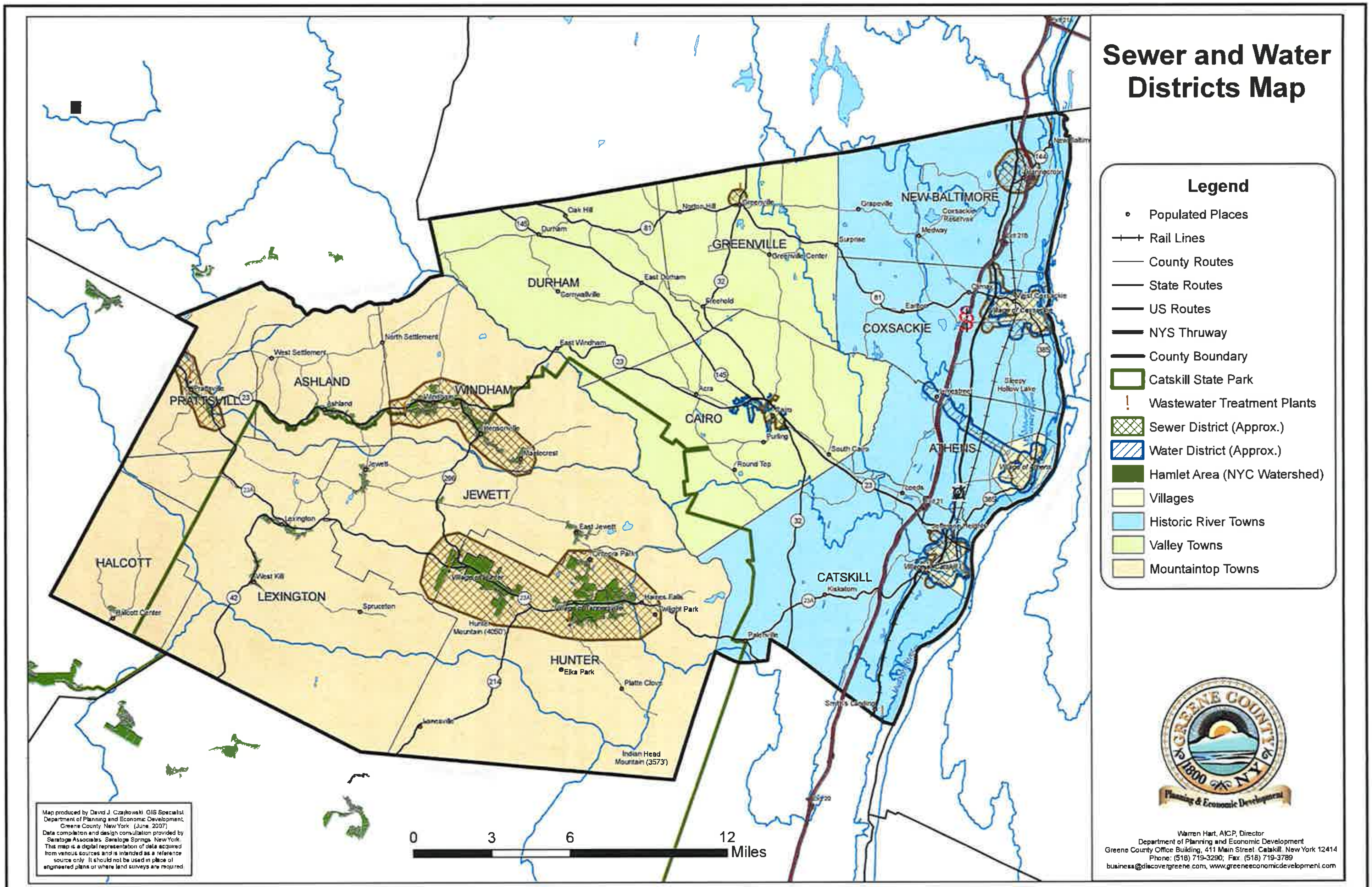
TOWN OF ATHENS GREENE CO., N.Y.

PROJ. No.: 2014–08	DATE: 10/1/14	SCALE: 1" = 2,000'	DWG. NO. 2014–08004	FIGURE 4

796 Schoharie Turnpike, Town of Athens, New York




Greene County
Existing Land Use
Legend
Populated Places
Rail Lines
County Boundary
Villages
Catskill State Park
Land Use Type
Agricultural
Commercial
Community Services
Forested
Industrial
Public Services
Recreation & Entertainment
Residential
Vacant
NEW BALTIMORE
GREENVILLE
COXSACKIE
DURHAM
ATHENS
CAIRO
CATSKILL
WINDHAM
ASHLAND
PRATTSVILLE
JEWETT
HUNTER
LEXINGTON
HALCOTT
0
3
6
12
Miles
Map produced by David J. Czajkowski GIS Specialist, Department of Planning and Economic Development, Greene County, New York. (June 2007)
Data compilation and design consultation provided by Saratoga Associates, Saratoga Springs, New York
This map is a digital representation of data acquired from various sources and is intended as a reference source only. It should not be used in place of engineered plans or where land surveys are required.
Warren Hart, AICP, Director
Department of Planning and Economic Development
Greene County Office Building, 411 Main Street, Catskill, New York 12414
Phone: (518) 719-3290; Fax: (518) 719-3789
business@discovergreene.com, www.greeneeconomicdevelopment.com


Sewer and Water
Districts Map
Legend
Populated Places
Rail Lines
County Routes
State Routes
US Routes
NYS Thruway
County Boundary
Catskill State Park
Wastewater Treatment Plants
Sewer District (Approx.)
Water District (Approx.)
Hamlet Area (NYC Watershed)
Villages
Historic River Towns
Valley Towns
Mountaintop Towns
NEW BALTIMORE
COXSACKIE
ATHENS
CATSKILL
GREENVILLE
DURHAM
CAIRO
WINDHAM
ASHLAND
PRATTSVILLE
JEWETT
HALCOTT
LEXINGTON
HUNTER
Grapeville
Coxsackie Reservoir
Medway
Surprise
Norton Hill
Greenville
Greenville Center
Oak Hill
Durham
East Durham
Freehold
Cornwallville
North Settlement
West Settlement
East Windham
Acra
South Cairo
Purling
Round Top
Sleepy Hollow Lake
Leeds
Kiskatom
Palenville
Smith's Landing
Maplecrest
Jewett
East Jewett
Lexington
West Kill
Spruceton
Halcott Center
Haines Falls
Twilight Park
Hunter Mountain (4050')
Elka Park
Platte Clove
Lanesville
Indian Head Mountain (3573')
0 3 6 12
Miles
Map produced by David J. Czajkowski, GIS Specialist
Department of Planning and Economic Development,
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Data compilation and design consultation provided by
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engineered plans or where land surveys are required.
GREENE COUNTY
1800 N.Y.
Planning & Economic Development
Warren Hart, AICP, Director
Department of Planning and Economic Development
Greene County Office Building, 411 Main Street, Catskill, New York 12414
Phone: (518) 719-3290; Fax: (518) 719-3789
business@discovergreene.com, www.greeneeconomicdevelopment.com

ATTACHMENT 4

PROPERTY DESCRIPTION REPORT & OWNERSHIP CARD FROM TOWN OF ATHENS (IMAGE MATE ONLINE DATABASE)

Northeast

TAX DISTRICT	COORDINATE LOCATOR	SECTION	BLOCK	LOT
TOWN OF ATHENS 192289-1-021-09-000	63353 83339	104.00	04	30

SUBDIVISION NAME	SUBDIVISION LOT NO.	STATUS

LOCATION	DIMENSIONS	ACREAGE
CR 28		13.2

LAND USE	SCHOOL DISTRICT	SPECIAL DISTRICT CODE
400	192801	AT3

OWNER'S NAME AND ADDRESS	DATE ACQUIRED	DEED BOOK	PAGE NO.
ATLANTIC WOOD IND, INC BOX 1608 SAVANNAH, GA. 31402	12/20/78	496	821
Atlantic Wood Industries Inc.	11/30/85	592	305
Northeast Treaters of NY LLC	1/22/96	8418	62

GREENE COUNTY PROPERTY MAP

GEOGRAPHIC INDEX

LIBER 848 PAGE 62 T 50240

Form 1684S N.Y. DEED—WARRANTY with Lien Covenant (From a Corporation)

This Indenture,

Made the 22nd *day of* January *Nineteen Hundred and* Ninety-six

Between

ATLANTIC WOOD INDUSTRIES, INC., P.O. Box 1608, Savannah, Georgia 31402,

a corporation organized under the laws of the United States of America

party of the first part, and

NORTHEAST TREATERS OF NEW YORK, LLC, Schoharie Turnpike, Athens, NY 12015,

party of the second part,

Witnesseth *that the party of the first part, in consideration of*

----------ONE---------- *Dollar* ($1.00 og&vc)

lawful money of the United States, and other good and valuable consideration *paid by the party of the second part, does hereby grant and release unto the party of the second part,* their heirs *and assigns forever, all*

ALL THAT CERTAIN PLOT, PIECE OR PARCEL OF LAND, with the buildings and improvements thereon erected, situate, lying and being in the Town of Athens, County of Greene, State of New York, bounded and described as follows:

Beginning at a point in the northerly right-of-way line of Schoharie Turnpike Road, said point marked by an iron pin, said pin further described as being 1/2 mile more or less southeasterly along said Schoharie Turnpike from U.S. Route 9W, thence from said point N, 45 degrees 01 minutes 26 seconds W, 542.90 feet to a point, said point being a painted notch in a large boulder, said point being on the division line of the lands of the grantor herein to the East and the lands of the Central Hudson Electric and Gas Company to the West, thence along said division line N, 26 degrees 08 minutes 00 seconds E, 820.00 feet to a point, said point being an iron pipe marking the northwest corner of the grantor herein and the southwest corner of Kubovitz, thence along the division line of the lands now or formerly of Kubovitz to the North and the grantor herein the following four courses: S, 71 degrees 08 minutes 00 seconds E, 504.05 feet to an iron pin; S, 22 degrees 48 minutes 00 seconds W, 385.40 feet to an iron pin; S, 62 degrees 40 minutes 00 seconds E, 174.22 feet to a point, said point being a three-forked Elm tree, said tree witnessed by two iron pins set 10 feet from said tree and on the boundary lines marked by said tree; S, 22 degrees 29 minutes 00 seconds W, 410.88 feet to an iron pipe, thence along the division line of the lands of the Athens Garage and the lands of the grantor herein the following two courses to the point of beginning; N, 70 degrees 34 minutes 22 seconds W, 125.17 feet to an iron pin, S. 45 degrees 06 minutes 52 seconds W. 260.18 feet.

Excepting and reserving from the above a parcel of land 40 feet square conveyed to the Village of Athens by deed recorded in the Greene County Clerk's Office in Book 335, page 275, said parcel bounded and described as follows:

Beginning at a point situated on the northerly line of Schoharie Turnpike, said point being an iron pin, said pin further described as being S, 45 degrees 01 minutes 26 seconds E, 67.90 feet from a painted notch in a large boulder (as called in the description above), thence perpendicular to the northerly line of Schoharie Turnpike 40 feet to an iron pin, thence perpendicular to the previous course 40 feet to an iron pin, thence perpendicular to the previous course 40 feet to an iron pin situated on the northerly line of Schoharie Turnpike, thence N, 45 degrees 01 minutes 26 seconds W, 40 feet to the point of beginning.

The above description taken from a map and survey signed by Frank F. Ambrosio, L.S. 48971, and containing a net area of 13.17 acres ~~and "Topographic Survey of Lands of Atlantic Wood Industries, Inc." prepared by McGrath Land Surveyors dated November 5, 1991, updated January 18, 1996~~

Being the same premises conveyed to Atlantic Wood Industries, Inc. by the National Commercial Bank and Trust Company by deed dated December 20, 1978 and recorded in the Greene County Clerk's Office in Book 496 of Deeds at page 821.

This sale is made with the unanimous consent of grantor's Board of Directors in its regular course of business and does not include all or substantially all corporate assets.

Together with the appurtenances and all the estate and rights of the party of the first part in and to said premises,

To have and to hold the premises herein granted unto the party of the second part, their heirs, and assigns forever.

And the party of the first part covenants as follows:
First, That the party of the second part shall quietly enjoy the said premises;
Second, That the party of the first part will forever **Warrant** the title to said premises.

Third, That, in Compliance with Sec. 13 of the Lien Law, the grantor will receive the consideration for this conveyance and will hold the right to receive such consideration as a trust fund to be applied first for the purpose of paying the cost of the improvement and will apply the same first to the payment of the cost of the improvement before using any part of the total of the same for any other purpose.

RECEIVED
1000.
JAN 24 1996
REAL ESTATE TRANSFER TAX
GREENE COUNTY

1032

In Presence of

Jan 24 2 29 PM '96

In Witness Whereof, the party of the first part ~~has caused its corporate seal to be hereunto affixed, and these~~ presents to be signed by its duly authorized officer this 22nd day of January Nineteen Hundred and Ninety-six

Atlantic Wood Industries, Inc.

By Jeffrey A. Smigel, Vice President

State of ~~New York~~ New York
County of Albany } ss.

On this 22nd day of January Nineteen Hundred and Ninety-six before me personally came Jeffrey A. Smigel

to me personally known, who, being by me duly sworn, did depose and say that he resides in Tybee Island, Georgia that he is the vice-president of Atlantic Wood Industries, Inc. the corporation described in, and which executed, the within Instrument; ~~that he knows the seal of said corporation; that the seal affixed to said instrument is such corporate seal; that it was so affixed~~ by order of the Board of Directors of said corporation; and that he signed name thereto by like order.

William A. Kuchinski

WILLIAM A. KUCHINSKI
Notary Public, State of New York
Residing in Albany County
Registration No. 4813086
My Commission Expires 12/31/1996

Greene County, ss:
Recorded on the 24th day of Jan 1996 at 2:29 o'clock P M. in Liber 848 of Deeds at page 62 and examined.
Mary Ann Kordich Clerk

STATE OF NEW YORK, COUNTY OF GREENE
AS I, MICHAEL FLYNN, COUNTY CLERK AND CLERK OF THE SUPREME AND COUNTY COURTS, GREENE COUNTY DO HEREBY CERTIFY THAT I HAVE COMPARED THIS COPY WITH THE ORIGINAL THEREOF FILED IN MY OFFICE ON 01/24/96 AND THAT THE SAME IS A CORRECT TRANSCRIPT THEREOF AND OF THE WHOLE OF SUCH ORIGINAL IN TESTIMONY WHEREOF I HAVE HERE UNTO SET MY HAND AND AFFIXED THE SEAL OF SAID COURTS AND COUNTY THIS 4 DAY OF Sept 2020
Michael H. Flynn
COUNTY CLERK AND CLERK OF THE SUPREME AND COUNTY COURTS, GREENE COUNTY.

Deed

CORPORATION WARRANTY WITH LIEN COVENANT

ATLANTIC WOOD INDUSTRIES, INC.

TO

NORTHEAST TREATERS OF NEW YORK, LLC

Dated, January 22 1996

Record and return to:
Chernin & Gold
Binghamton Building
Hawley at State St.
PO Box 1563
Binghamton NY 13902-1563

Image Mate Online

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Commercial

- Property Info
- Owner/Sales
- Inventory
- Improvements
- Tax Info
- Report
- Comparables

Parcel History

View parcel history data

Municipality of Athens

SWIS:	192289	Tax ID:	104.00-4-30

Ownership Information

Name	Address
Treaters Of Northeast	Schoharie Tpk Athens NY 12015
New York Llc	Schoharie Tpk Athens NY 12015

Sale Information

Sale Date	Price	Property Class	Sale Type	Prior Owner
1/22/1996	$900,000	444 - Lumber yd/ml	Land & Building	Atlantic, Wood Inds
	Value Usable	Arms Length	Deed Book	Deed Page
	No	No	848	62

Photographs

No Photo Available

Documents

- Ownership Card

Maps

View Tax Map

Pin Property on GIS Map

View in Google Maps

View in Bing Maps

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Image Mate Online

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Commercial

Property Info
Owner/Sales
Inventory
Improvements
Tax Info
Report
Comparables

Parcel History

View parcel history data

Municipality of Athens

SWIS:	192289	Tax ID:	104.00-4-39

Ownership Information

Name	Address
Central Hudson Gas & Elec	284 South Ave Poughkeepsie NY 12602

Sale Information

No Sales Information Available

Photographs

No Photo Available

Documents

- Ownership Card

Maps

View Tax Map
Pin Property on GIS Map
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View in Bing Maps
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SDG

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Residential

Property Info
Owner/Sales
Inventory
Improvements
Tax Info
Report
Comparables

Parcel History

View parcel history data

Municipality of Athens

SWIS:	192289	Tax ID:	104.00-4-32

Ownership Information

Name	Address
Thomas Mc Manus	243 Flats Rd Athens NY 12015
Allison Smith	243 Flats Rd Athens NY 12015

Sale Information

Sale Date	Price	Property Class	Sale Type	Prior Owner
7/17/1993	$72,000	322 - Rural vac>10	Land Only	Bush, Jerry
	Value Usable	Arms Length	Deed Book	Deed Page
	Yes	Yes	797	231

Photographs

No Photo Available

Documents

- Ownership Card

Maps

View Tax Map

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View in Bing Maps

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Residential

Property Info
Owner/Sales
Inventory
Improvements
Tax Info
Report
Comparables

Parcel History

View parcel history data

Municipality of Athens

SWIS:	192289	Tax ID:	104.00-4-40

Ownership Information

Name	Address
David Hazen	722 Schoharie Tpk Athens NY 12015
Belkis Hazen	722 Schoharie Tpk Athens NY 12015

Sale Information

Sale Date	Price	Property Class	Sale Type	Prior Owner
2/16/1996	$100,000	240 - Rural res	Land & Building	Deslaurier, Robert
	Value Usable	Arms Length	Deed Book	Deed Page
	No	Yes	849	149

Photographs

No Photo Available

Documents

- Ownership Card

Maps

View Tax Map

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Commercial

- Property Info
- Owner/Sales
- Inventory
- Improvements
- Tax Info
- Report
- Comparables

Parcel History

View parcel history data

Municipality of Athens

SWIS:	192289	Tax ID:	104.00-4-26

Ownership Information

Name	Address
Charles Ford	80 East Maple Ave Suffern NY 10901
Heather Ford	80 East Maple Ave Suffern NY 10901

Sale Information

Sale Date	Price	Property Class	Sale Type	Prior Owner
8/2/1990	$90	433 - Auto body	Land & Building	Valentine, Mark
	Value Usable	Arms Length	Deed Book	Deed Page
	No	No	761	176

Photographs

No Photo Available

Documents

- Ownership Card

Maps

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Commercial

Property Info
Owner/Sales
Inventory
Improvements
Tax Info
Report
Comparables

Parcel History

View parcel history data

Municipality of Athens

SWIS:	192289	Tax ID:	104.00-4-27.1

Ownership Information

Name	Address
Greene County IDA	270 Mansion St Coxsackie NY 12051

Sale Information

Sale Date	Price	Property Class	Sale Type	Prior Owner
1/4/2008	$1,250,000	710 - Manufacture	Land & Building	Greene County IDA
	Value Usable	Arms Length	Deed Book	Deed Page
	No	No	1276	331

Photographs

No Photo Available

Documents

- Ownership Card

Maps

View Tax Map
Pin Property on GIS Map
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View in Bing Maps
Map Disclaimer

Image Mate Online

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Residential

- Property Info
- Owner/Sales
- Inventory
- Improvements
- Tax Info
- Report
- Comparables

Parcel History

View parcel history data

Municipality of Athens

SWIS:	192289	Tax ID:	104.00-4-27.2

Ownership Information

Name	Address
Greene County IDA	270 Mansion St Coxsackie NY 12051

Sale Information

No Sales Information Available

Photographs

No Photo Available

Documents

- Ownership Card

Maps

- View Tax Map
- Pin Property on GIS Map
- View in Google Maps
- View in Bing Maps

Map Disclaimer

ATTACHMENT 5

PROJECT SCHEDULE

Northeast Treaters of New York, LLC
Facility Modernization Schedule
Updated 10/10/2014

Action	Days	Start	Finish
Brownfield Cleanup Program (BCP) Application	14	9/23/2014	10/7/2014
Remedial Investigation (RI) Submittal to DEC	28	9/23/2014	10/21/2014
BCP Public Comment	30	10/8/2014	11/7/2014
BCP Agreement	7	11/8/2014	11/15/2014
BCP Process / RI Sampling	46	11/15/2014	12/31/2014
RI Report	116	11/15/2014	3/11/2015
Remedial Design (RD)	45	3/1/2015	4/15/2015
RD Approval	30	4/15/2015	5/15/2015
Drip Pad Building Demolition	5	7/26/2015	7/31/2015
Final Engineering Report	61	8/1/2015	10/1/2015
Receive Certificate of Completion	72	10/1/2015	12/12/2015

ATTACHMENT 7

LABORATORY DATA

Attachment 7a: **Centre Analytical Laboratories, Inc.**
June 1997, Analytical Data

Attachment 7b: **Accutest Laboratories**
November 1998, Analytical Data

Attachment 7c: **TestAmerica Laboratories, Inc.**
July 2014, Analytical Data

Attachment 7a

Centre Analytical Laboratories, Inc.
June 1997, Analytical Data

Centre Analytical Laboratories, Inc.
3048 Research Drive, State College PA 16801 814-231-8032 FAX 814-231-1253

NITTANY GEOSCIENCE INC
120 RADNOR ROAD
STATE COLLEGE , PA 16801
Account Number: 165

Contact. SHANA TRITSCH

Date Received: 18-JUN-97
Date Reported: 24-JUN-97

Invoice Number: 14414

Date Collected: 17-JUN-97

Client ID: BK-1

Lab ID. L15119-1

PARAMETER	UNITS	RESULT	LIMIT OF QUANTITATION	TEST METHOD	TEST DATE	ANALYST
HEXAVALENT CHROMIUM	mg/kg(dry)	< 4.98	4.98	EPA 7196	18-JUN-97	GAF
METALS ANALYSIS						
ARSENIC-TOTAL	mg/kg(dry)	< 2.85	2.85	EPA 6010	19-JUN-97	JWH
CHROMIUM-TOTAL	mg/kg(dry)	24	57	EPA 6010	19-JUN-97	JWH
PERCENT SOLIDS	%	78.63	.01	SM 2540A	19-JUN-97	JWH

Submitted by
Centre Analytical Labs Inc.
Reviewed and Approved by:

Kevin J. Lloyd
Laboratory Supervisor

Centre Analytical Laboratories, Inc.

3048 Research Drive, State College PA 16801 814-231-8032 FAX 814-231-1253

NITTANY GEOSCIENCE INC
120 RADNOR ROAD
STATE COLLEGE , PA 16801
Account Number: 165

Contact: SHANA TRITSCH

Date Received: 18-JUN-97
Date Reported: 24-JUN-97

Invoice Number: 14414

Date Collected: 17-JUN-97

Client ID: B-1

Lab ID: L15119-6

PARAMETER	UNITS	RESULT	LIMIT OF QUANTITATION	TEST METHOD	TEST DATE	ANALYS
HEXAVALENT CHROMIUM	mg/kg(dry)	< 5.16	5.16	EPA 7196	18-JUN-97	GAF
METALS ANALYSIS						
ARSENIC-TOTAL	mg/kg(dry)	< 2.87	2.87	EPA 6010	19-JUN-97	JWH
CHROMIUM-TOTAL	mg/kg(dry)	25.5	.575	EPA 6010	19-JUN-97	JWH
PERCENT SOLIDS	%	77	.01	SM 2540A	19-JUN-97	JWH

Submitted by
Centre Analytical Labs, Inc.
Reviewed and Approved by:

Kevin J. Lloyd
Laboratory Supervisor

Centre Analytical Laboratories, Inc.

3048 Research Drive, State College PA 16801 814-231-8032 FAX 814-231-1253

NITTANY GEOSCIENCE INC
120 RADNOR ROAD
STATE COLLEGE , PA 16801
Account Number: 165

Contact: SHANA TRITSCH

Date Received: 18-JUN-97
Date Reported: 24-JUN-97

Invoice Number: 14414

Date Collected: 17-JUN-97

Client ID: B-2

Lab ID: L15119-5

PARAMETER	UNITS	RESULT	LIMIT OF QUANTITATION	TEST METHOD	TEST DATE	ANALYST
HEXAVALENT CHROMIUM	mg/kg(dry)	< 5.47	5.47	EPA 7196	18-JUN-97	GAP
METALS ANALYSIS						
ARSENIC-TOTAL	mg/kg(dry)	< 2.87	2.87	EPA 6010	19-JUN-97	JWH
CHROMIUM-TOTAL	mg/kg(dry)	28.6	.574	EPA 6010	19-JUN-97	JWH
PERCENT SOLIDS	%	73.86	.01	SM 2540A	19-JUN-97	JWH

Submitted by
Centre Analytical Labs. Inc.
Reviewed and Approved by:

Kevin J Lloyd
Laboratory Supervisor

Centre Analytical Laboratories, Inc.

3048 Research Drive, State College PA 16801 814-231-8032 FAX 814-231-1253

NITTANY GEOSCIENCE INC
120 RADNOR ROAD
STATE COLLEGE , PA 16801
Account Number: 165

Contact: SHANA TRITSCH

Date Received: 18-JUN-97
Date Reported: 24-JUN-97

Invoice Number: 14414

Date Collected: 17-JUN-97

Client ID B-3

Lab ID: L15119-2

PARAMETER	UNITS	RESULT	LIMIT OF QUANTITATION	TEST METHOD	TEST DATE	ANALYST
HEXAVALENT CHROMIUM	mg/kg(dry)	< 5.23	5.23	EPA 7196	18-JUN-97	GAF
METALS ANALYSIS						
ARSENIC-TOTAL	mg/kg(dry)	< 2.0	2.0	EPA 6010	19-JUN-97	JWH
CHROMIUM-TOTAL	mg/kg(dry)	25.9	.581	EPA 6010	19-JUN-97	JWH
PERCENT SOLIDS	%	74.25	.01	SM 2540A	19-JUN-97	JWH

Submitted by
Centre Analytical Labs, Inc.
Reviewed and Approved by:

Kevin J. Lloyd
Laboratory Supervisor

Centre Analytical Laboratories, Inc.

3048 Research Drive. State College PA 16801 814-231-8032 FAX 814-231-1253

NITTANY GEOSCIENCE INC
120 RADNOR ROAD
STATE COLLEGE , PA 16801
Account Number 165

Contact. SHANA TRITSCH

Date Received: 18-JUN-97
Date Reported: 24-JUN-97

Invoice Number: 14414

Date Collected: 17-JUN-97

Client ID B 4

Lab ID 115119-3

PARAMETER	UNITS	RESULT	LIMIT OF QUANTITATION	TEST METHOD	TEST DATE	ANALYST
HEXAVALENT CHROMIUM	mg/kg dry:	< 5.37	5.37	EPA 7196	18-JUN-97	GAF
METALS ANALYSIS						
ARSENIC-TOTAL	mg/kg dry:	< 2.38	2.38	EPA 6010	19-JUN-97	JWH
CHROMIUM-TOTAL	mg/kg dry:	23	.576	EPA 6010	19-JUN-97	JWH
PERCENT SOLIDS	%	72.3	.01	SM 2540A	19-JUN-97	JWH

Submitted by
Centre Analytical Labs, Inc.
Reviewed and Approved by:

[illegible]

[illegible]
Laboratory [illegible]

Centre Analytical Laboratories, Inc.
3048 Research Drive, State College PA 16801 814-231-8032 FAX 814-231-1253

NITTANY GEOSCIENCE INC
120 RADNOR ROAD
STATE COLLEGE , PA 16801
Account Number: 165

Contact: SHANA TRITSCH

Date Received: 18-JUN-97
Date Reported: 24-JUN-97

Invoice Number: 14414

Date Collected: 17-JUN-97

Client ID: B-5

Lab ID: 115119-4

PARAMETER	UNITS	RESULT	LIMIT OF QUANTITATION	TEST METHOD	TEST DATE	ANALYST
HEXAVALENT CHROMIUM	mg/kg dry wt	< 5.26	5.26	EPA 7196	18-JUN-97	GAF
METALS ANALYSIS						
ARSENIC-TOTAL	mg/kg dry wt	< 2.82	2.82	EPA 6010	19-JUN-97	JWH
CHROMIUM-TOTAL	mg/kg dry wt	23.8	.563	EPA 6010	19-JUN-97	JWH
PERCENT SOLIDS	%	76.2	.01	SM 2540A	19-JUN-97	JWH

Submitted by
Centre Analytical Labs. Inc.
Reviewed and Approved by

[illegible]
Laboratory Director

Please refer to the reverse side for our standard terms and conditions.

Centre Analytical Laboratories, Inc.
3048 Research Drive, State College PA 16801 814-231-8032 FAX 814-231-1253

NITTANY GEOSCIENCE INC
120 RADNOR ROAD
STATE COLLEGE , PA 16801
Account Number: 165

Contact: SHANA TRITSCH

Date Received: 18-JUN-97
Date Reported: 24-JUN-97

Invoice Number: 14414

Date Collected: 17-JUN-97

Client ID: B-6

Lab ID: L15119-10

PARAMETER	UNITS	RESULT	LIMIT OF QUANTITATION	TEST METHOD	TEST DATE	ANALYST
HEXAVALENT CHROMIUM	mg/kg(dry)	< 5.18	5.18	EPA 7196	18-JUN-97	GAF
METALS ANALYSIS						
ARSENIC-TOTAL	mg/kg(dry)	< 2.95	2.95	EPA 6010	19-JUN-97	JWH
CHROMIUM-TOTAL	mg/kg(dry)	32.7	.591	EPA 6010	19-JUN-97	JWH
PERCENT SOLIDS	%	76.97	.01	SM 2540A	19-JUN-97	JWH

Submitted by
Centre Analytical Labs, Inc.
Reviewed and Approved by:

Kevin J. Lloyd
Laboratory Supervisor

Centre Analytical Laboratories, Inc.

3048 Research Drive, State College PA 16801 814-231-8032 FAX 814-231-1253

NITTANY GEOSCIENCE INC
120 RADNOR ROAD
STATE COLLEGE , PA 16801
Account Number: 165

Contact: SHANA TRITSCH

Date Received: 18-JUN-97
Date Reported: 24-JUN-97

Invoice Number: 14414

Date Collected: 17-JUN-97

Client ID: B-7

Lab ID: L15119-8

PARAMETER	UNITS	RESULT	LIMIT OF QUANTITATION	TEST METHOD	TEST DATE	ANALYS
HEXAVALENT CHROMIUM	mg/kg(dry)	< 5.24	5.24	EPA 7196	18-JUN-97	GAF
METALS ANALYSIS						
ARSENIC-TOTAL	mg/kg(dry)	< 2.95	2.95	EPA 6010	19-JUN-97	JWH
CHROMIUM-TOTAL	mg/kg(dry)	27.5	.589	EPA 6010	19-JUN-97	JWH
PERCENT SOLIDS	%	75.43	.01	SM 2540A	19-JUN-97	JWH

Submitted by
Centre Analytical Labs, Inc.
Reviewed and Approved by:

Kevin J. Lloyd
Laboratory Supervisor

Centre Analytical Laboratories, Inc.

3048 Research Drive. State College PA 16801 814-231-8032 FAX 814-231-1253

NITTANY GEOSCIENCE INC
120 RADNOR ROAD
STATE COLLEGE , PA 16801
Account Number 165

Contact SHANA TRITSCH

Date Received: 18-JUN-97
Date Reported: 24-JUN-97

Invoice Number: 14414

Date Collected: 17-JUN-97

Client ID B-4

Lab ID 115119-11

PARAMETER	UNITS	RESULT	LIMIT OF QUANTITATION	TEST METHOD	TEST DATE	ANALYS
HEXAVALENT CHROMIUM	mg/kg dry	< 4.3	4.3	EPA 7196	18-JUN-97	GAF
METALS ANALYSIS						
ARSENIC-TOTAL	mg/kg dry	< 1.36	1.36	EPA 6010	19-JUN-97	JWH
CHROMIUM-TOTAL	mg/kg dry	42.1	.872	EPA 6010	19-JUN-97	JWH
PERCENT SOLIDS	%	78.01	.01	SM 2540A	19-JUN-97	JWH

Submitted by
Centre Analytical Labs, Inc
Reviewed and Approved by

[illegible]
[illegible]

Centre Analytical Laboratories, Inc.

3048 Research Drive, State College PA 16801 814-231-8032 FAX 814-231-1253

NITTANY GEOSCIENCE INC
120 RADNOR ROAD
STATE COLLEGE , PA 16801
Account Number: 165

Contact SHANA TRITSCH

Date Received: 18-JUN-97
Date Reported: 24-JUN-97

Invoice Number: 14414

Date Collected: 17-JUN-97

Client ID: B-9

Lab ID: 115119-7

PARAMETER	UNITS	RESULT	LIMIT OF QUANTITATION	TEST METHOD	TEST DATE	ANALYST
HEXAVALENT CHROMIUM	mg/kg dry	< 5.27	5.27	EPA 7196	18-JUN-97	GAF
METALS ANALYSIS						
ARSENIC-TOTAL	mg/kg dry	< 3.35	3.35	EPA 6010	19-JUN-97	JWH
CHROMIUM-TOTAL	mg/kg dry	24.8	.67	EPA 6010	19-JUN-97	JWH
PERCENT SOLIDS	%	77.7	.01	SM 2540A	19-JUN-97	JWH

Submitted by
Centre Analytical Labs, Inc.
Reviewed and Approved by:

Kevin J. Lloyd
Laboratory Supervisor

Geoprobe® Soil Boring Log

NGS Project Number	272-004
Project Location	Northeast Treaters, Athens, NY
Operator	C. Rockwell
Geologist	S. Tritsch

Boring no.	BK-1
Sheet 1 of 1	
Sample name	BK-1

Sampling location

See Figure

Sampling Method	Geoprobe	
	Boring Start	**Boring Finish**
Time	0750	0815
Date	6/17/97	6/17/97
Headspace analysis method	None	
Depth to water		

Surface conditions, other comments

Gravel and grass
Cloudy 60°

Depth (feet) From	Depth (feet) To	Recovery in feet	Recovery in %	USCS abbrev.	Description of material and remarks	Sample collected	PID meas. (ppm) Total
0	4	4	100	CH	10" topsoil		
					Brown varved clay (hard, medium plasticity)		
4	8	4	100	CH	Same as above	X	
					Sampled from 5-6'		
					Arsenic and Total Cr 5.-5.5		
					Hex Cr 5.5-6		

NITTANY GEOSCIENCE INC.

Geoprobe® Soil Boring Log

NGS Project Number	272-004
Project Location	Northeast Treaters, Athens, NY
Operator	C. Rockwell
Geologist	S. Tritsch

Boring no.	B-1
Sheet of	1 1
Sample name	B-1

Sampling location

See Figure

Sampling Method	Geoprobe	Boring Start Time 1130	Boring Finish Time 1150
Headspace analysis method	None	Date 6/17/97	Date 6/17/97
Depth to water	Unknown		

Surface conditions, other comments

Hard gravel

Cloudy 65°

Depth (feet) From	Depth (feet) To	Recovery in feet	Recovery in %	USCS abbrev.	Description of material and remarks	Sample collected	PID meas. (ppm) Total
0	4	1.5			Black sand and gravel fill		
					Bottom 0.5' brown clay		
4	8	4			Hard brown clay	X	
					Sample 5.5-6.5		

Im.07/ings Geoprobe S.B.Log

NITTANY GEOSCIENCE INC.

Geoprobe® Soil Boring Log

NGS Project Number	272-004
Project Location	Northeast Treaters, Athens, NY
Operator	C. Rockwell
Geologist	S. Tritsch

Boring no.	Sheet of
B-2	1 1
Sample name	
B-2	

Sampling location

See Figure

Sampling Method	Geoprobe	Boring Start	Boring Finish
		Time 1050	Time 1115
Headspace analysis method	None	Date 6/17/97	Date 6/17/97
Depth to water			

Surface conditions, other comments

Gravel

Cloudy 60°

Depth (feet) From	To	Recovery in feet	Recovery in %	USCS abbrev.	Description of material and remarks	Sample collected	PID meas. (ppm) total
0	4	1.8		GW-SW	Black sand-gravel fill		
				CH	Bottom 0.4' hard brown clay		
4	8	4			Hard brown varved clay	X	
					Sample from 5.5-6		

NITTANY GEOSCIENCE INC.

Geoprobe Soil Boring Log

NGS Project Number	272-004
Project Location	Northeast Treaters, Athens, NY
Operator	C. Rockwell
Geologist	S. Tritsch

Boring no.	B-3
Sheet of	1 1
Sample name	B-3

Sampling location

See Figure

Sampling Method	Geoprobe
Headspace analysis method	None
Depth to water	

Boring	Start	Finish
Time	0900	0930
Date	6/17/97	6/17/97

Surface conditions, other comments

Gravel
Raining 60°

Depth (feet) From	Depth (feet) To	Recovery in feet	Recovery in %	USCS abbrev.	Description of material and remarks	Sample collected	PID meas. (ppm) Total
0	4	1.5		GW-SW	Black sand and gravel fill		
					Bottom 6' wet		
		2.7			Top 1.2' Same as above, possible fall in		
					Hard clay below	X	
					Sample for arsenic and total chromium 5.2-5.8		
					Hex chromium 5.8-6.2' bgs		

ss.97/ngs.GeoprobeSB Log

NITTANY GEOSCIENCE INC.

Geoprobe Soil Boring Log

NGS Project Number	272-004
Project Location	Northeast Treaters, Athens, NY
Operator	C. Rockwell
Geologist	S. Tritsch

Boring no.	Sheet of
B-4	1 1
Sample name	
B-4	

Sampling location

See Figure

Sampling Method	Geoprobe
Headspace analysis method	None
Depth to water	

Boring	Start	Finish
Time	0930	1000
Date	6/17/97	6/17/97

Surface conditions, other comments

Gravel, flat

Raining 60°

Depth (feet) From	Depth (feet) To	Recovery in feet	Recovery in %	USCS abbrev.	Description of material and remarks	Sample collected	PID meas. (ppm) Total
0	4	1.7		CH	0.9' fill		
					Hard brown and gray clay		
4	8	4		CH	Hard brown and gray (30%) clay	X	
					5.5-6.9 Hex chromium		
					5.9-6.4 arsenic and chromium		

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Geoprobe Soil Boring Log

Boring no.	B-5
Sheet of	1 1
Sample name	B-5

NGS Project Number	272-004
Project Location	Northeast Treaters, Athens, NY
Operator	C. Rockwell
Geologist	S. Tritsch

Sampling location

See Figure

		Boring Start	Boring Finish
Sampling Method	Geoprobe	Time 1015	Time 1040
Headspace analysis method	None	Date 6/17/97	Date 6/17/97
Depth to water			

Surface conditions, other comments

Gravel, flat

Raining 60°

Depth (feet) From	Depth (feet) To	Recovery in feet	Recovery in %	USCS abbrev.	Description of material and remarks	Sample collected	PID meas. (ppm) Total
0	4	0.4			Black gravel-sand fill		
4	8	1.8			Top 1' black fill, possibly fall-in		
					Arsenic chromium bottom 6" and 6.5-7'	X	
					Hex chromium 7-7.5		

Boring no.	Sheet of
B-6	1 / 1
Sample name: B-6	

NGS Project Number	272-004
Project Location	Northeast Treaters, Athens, NY
Operator	C. Rockwell
Geologist	S. Tritsch

Sampling location

See Figure

		Boring Start	Boring Finish
Sampling Method	Handprobe	Time: 1440	Time: 1520
Headspace analysis method	None	Date: 6/17/97	Date: 6/17/97
Depth to water			

Surface conditions, other comments

6" Concrete
Inside building
Cloudy 60s

Depth (feet) From	Depth (feet) To	Recovery (feet)	Recovery in %	USCS abbrev.	Description of material and remarks	Sample collected	PID meas. (ppm) Total
0	4	1	25	SW-GW	Black sand and gravel fill		
4	7	2.92	100	CH	Brown varved clay	X	
					Sampled from 5-6'		

Geoprobe Soil Boring Log

NGS Project Number	272-004
Project Location	Northeast Treaters, Athens, NY
Operator	C. Rockwell
Geologist	S. Tritsch

Boring no.	B-7
Sheet of	1 1
Sample name	B-7

Sampling location

See Figure

Sampling Method	Handprobe
Headspace analysis method	None
Depth to water	

Boring	Start	Finish
Time	1415	1420
Date	6/17/97	6/17/97

Surface conditions, other comments

6" Concrete

Cloudy 65°

Depth (feet) From	Depth (feet) to	Recovery in feet	Recovery in %	USCS abbrev.	Description of material and remarks	Sample collected	PID meas. (ppm) total
0	4	2.5		CH	0.5' fill		
					Gray brown hard medium plasticity clay		
4	7	27		CH	Same as above, wet brown gray	X	
					Hex Cr 5-5.5		
					Cr As 5.5-6.0		

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Boring no.	Sheet of
B-8	1 1
Sample name	
B-8	

NGS Project Number	272-004
Project Location	Northeast Treaters, Athens, NY
Operator	C. Rockwell
Geologist	S. Tritsch

Sampling location

See Figure

		Boring Start	Boring Finish
Sampling Method	Handprobe	Time 1530	Time 1550
Headspace analysis method	None	Date 6/17/97	Date 6/17/97
Depth to water			

Surface conditions, other comments

Pavement inside building

Cloudy 60

Depth (feet) From	To	Recovery in feet	Recovery in %	USCS abbrev.	Description of material and remarks	Sample collected	PID meas. (ppm) Total
0	4	0.5	13	SW-GW	Black sand and gravel fill		
4	7	3	100	CH	Hard gray/brown clay	X	
					Sampled from 5-6'		

NGS Project Number	272-004
Project Location	Northeast Treaters, Athens, NY
Operator	C. Rockwell
Geologist	S. Tritsch

Boring no.	B-9
Sheet of	1 1
Sample name	B-9

Sampling location

See Figure

Sampling Method	Handprobe
Headspace analysis method	None
Depth to water	

Boring	Start	Finish
Time	1330	1400
Date	6/17/97	6/17/97

Surface conditions, other comments

6" Concrete

Depth (feet) From	Depth (feet) To	Recovery in feet	Recovery in %	USCS abbrev.	Description of material and remarks	Sample collected	PID meas. (ppm) Total
0	4	1.2			Black sand-gravel fill-wet		
4	8	3		CH	Top 1' fill		
					Gray wet clay, medium plasticity	X	
					Hex Cr 5.5-6		
					Cr Arsenic 5-5.5		

fm.07.logs.GeoprobeS.B.Log

Attachment 7b

Accutest Laboratories
November 1998, Analytical Data

ACCUTEST

Report of Analysis

Client Sample ID:	C1 14.5-15.5			
Lab Sample ID:	E42068-1		**Date Sampled:**	11/12/98
Matrix:	SO - Soil		**Date Received:**	11/16/98
			Percent Solids:	79.9
Project:	AWI-Athens, NY			

Metals Analysis

Analyte	Result	RDL	Units	DF	Prep	Analyzed	By	Method
Arsenic	5.4	1.2	mg/kg	1	11/20/98	11/24/98	MFH	SW846 6010B
Chromium	22.3	1.2	mg/kg	1	11/20/98	11/24/98	MFH	SW846 6010B

RDL = Reported Detection Limit

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Report of Analysis

Client Sample ID:	C1 14.5-15.5		
Lab Sample ID:	E42068-1	**Date Sampled:**	11/12/98
Matrix:	SO - Soil	**Date Received:**	11/16/98
		Percent Solids:	79.9
Project:	AWI-Athens, NY		

General Chemistry

Analyte	Result	RDL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	<2.5	2.5	mg/kg	1	12/01/98	MET	SW846 3060A/7196A
Solids, Percent	79.9		%	1	11/19/98	DM	EPA 160.3 M

RDL = Reported Detection Limit

ACCUTEST

Report of Analysis

Client Sample ID:	C1 15.5-16.0		
Lab Sample ID:	E42068-2R	**Date Sampled:**	11/12/98
Matrix:	SO - Soil	**Date Received:**	11/16/98
		Percent Solids:	71.2
Project:	AWI-Athens, NY		

Metals Analysis

Analyte	Result	RDL	Units	DF	Prep	Analyzed	By	Method
Arsenic	8.6	1.4	mg/kg	1	12/17/98	12/17/98	BB	SW846 6010B
Chromium	34.2	1.4	mg/kg	1	12/17/98	12/17/98	BB	SW846 6010B

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Report of Analysis

Client Sample ID:	C1 15.5-16.0		
Lab Sample ID:	E42068-2R	**Date Sampled:**	11/12/98
Matrix:	SO - Soil	**Date Received:**	11/16/98
		Percent Solids:	71.2
Project:	AWI-Athens, NY		

General Chemistry

Analyte	Result	RDL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	<2.8	2.8	mg/kg	1	12/17/98	MET	SW846 3060A/7196A
Solids, Percent	71.2		%	1	12/17/98	DM	EPA 160.3 M

RDL = Reported Detection Limit

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Report of Analysis

Client Sample ID:	C2 4.5-5.0		
Lab Sample ID:	E42068-3	**Date Sampled:**	11/12/98
Matrix:	SO - Soil	**Date Received:**	11/16/98
		Percent Solids:	83.7
Project:	AWI-Athens, NY		

Metals Analysis

Analyte	Result	RDL	Units	DF	Prep	Analyzed	By	Method
Arsenic	192	1.2	mg/kg	1	11/20/98	11/24/98	MFH	SW846 6010B
Chromium	229	1.2	mg/kg	1	11/20/98	11/24/98	MFH	SW846 6010B

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Report of Analysis

Client Sample ID:	C2 4.5-5.0		
Lab Sample ID:	E42068-3	**Date Sampled:**	11/12/98
Matrix:	SO - Soil	**Date Received:**	11/16/98
		Percent Solids:	83.7
Project:	AWI-Athens, NY		

General Chemistry

Analyte	Result	RDL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	17.6	2.4	mg/kg	1	12/01/98	MET	SW846 3060A/7196A
Solids, Percent	83.7		%	1	11/19/98	DM	EPA 160.3 M

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Report of Analysis

Client Sample ID:	C2 5.0-5.5	**Date Sampled:**	11/12/98
Lab Sample ID:	E42068-4R	**Date Received:**	11/16/98
Matrix:	SO - Soil	**Percent Solids:**	75.7
Project:	AWI-Athens, NY		

Metals Analysis

Analyte	Result	RDL	Units	DF	Prep	Analyzed	By	Method
Arsenic	28.6	1.3	mg/kg	1	12/17/98	12/17/98	BB	SW846 6010B
Chromium	79.1	1.3	mg/kg	1	12/17/98	12/17/98	BB	SW846 6010B

RDL = Reported Detection Limit

ACCUTEST.

Report of Analysis

Client Sample ID:	C2 5.0-5.5		
Lab Sample ID:	E42068-4R	**Date Sampled:**	11/12/98
Matrix:	SO - Soil	**Date Received:**	11/16/98
		Percent Solids:	75.7
Project:	AWI-Athens, NY		

General Chemistry

Analyte	Result	RDL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	<2.6	2.6	mg/kg	1	12/17/98	MET	SW846 3060A/7196A
Solids, Percent	75.7		%	1	12/17/98	DM	EPA 160.3 M

RDL = Reported Detection Limit

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Report of Analysis

Client Sample ID:	C3 4.25-4.5		
Lab Sample ID:	E42068-5	**Date Sampled:**	11/12/98
Matrix:	SO - Soil	**Date Received:**	11/16/98
		Percent Solids:	82.0
Project:	AWI-Athens, NY		

Metals Analysis

Analyte	Result	RDL	Units	DF	Prep	Analyzed	By	Method
Arsenic	662	1.2	mg/kg	1	11/20/98	11/24/98	MFH	SW846 6010B
Chromium	580	1.2	mg/kg	1	11/20/98	11/24/98	MFH	SW846 6010B

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Report of Analysis

Client Sample ID:	C3 4.25-4.5		
Lab Sample ID:	E42068-5	**Date Sampled:**	11/12/98
Matrix:	SO - Soil	**Date Received:**	11/16/98
		Percent Solids:	82.0
Project:	AWI-Athens, NY		

General Chemistry

Analyte	Result	RDL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	21.6	2.4	mg/kg	1	12/01/98	MET	SW846 3060A/7196A
Solids, Percent	82		%	1	11/19/98	DM	EPA 160.3 M

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Report of Analysis

Client Sample ID:	C3 4.5-5.25	**Date Sampled:**	11/12/98
Lab Sample ID:	E42068-6R	**Date Received:**	11/16/98
Matrix:	SO - Soil	**Percent Solids:**	74.5
Project:	AWI-Athens, NY		

Metals Analysis

Analyte	Result	RDL	Units	DF	Prep	Analyzed	By	Method
Arsenic	22.1	1.3	mg/kg	1	12/17/98	12/17/98	BB	SW846 6010B
Chromium	47.0	1.3	mg/kg	1	12/17/98	12/17/98	BB	SW846 6010B

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ACCUTEST

Report of Analysis

Client Sample ID:	C3 4.5-5.25		
Lab Sample ID:	E42068-6R	**Date Sampled:**	11/12/98
Matrix:	SO - Soil	**Date Received:**	11/16/98
		Percent Solids:	74.5
Project:	AWI-Athens, NY		

General Chemistry

Analyte	Result	RDL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	<2.7	2.7	mg/kg	1	12/17/98	MET	SW846 3060A/7196A
Solids, Percent	74.5		%	1	12/17/98	DM	EPA 160.3 M

RDL = Reported Detection Limit

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Report of Analysis

Client Sample ID:	C-4 6.25-6.5		
Lab Sample ID:	E42068-30	**Date Sampled:**	11/12/98
Matrix:	SO - Soil	**Date Received:**	11/16/98
		Percent Solids:	85.9
Project:	AWI-Athens, NY		

Metals Analysis

Analyte	Result	RDL	Units	DF	Prep	Analyzed	By	Method
Arsenic	246	1.2	mg/kg	1	11/24/98	12/03/98	MMC	SW846 6010B
Chromium	155	1.2	mg/kg	1	11/24/98	12/03/98	MMC	SW846 6010B

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ACCUTEST

Report of Analysis

Client Sample ID:	C-4 6.25-6.5	**Date Sampled:**	11/12/98
Lab Sample ID:	E42068-30	**Date Received:**	11/16/98
Matrix:	SO - Soil	**Percent Solids:**	85.9
Project:	AWI-Athens, NY		

General Chemistry

Analyte	Result	RDL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	10.0	2.3	mg/kg	1	12/01/98	MET	SW846 3060A/7196A
Solids, Percent	85.9		%	1	11/19/98	DM	EPA 160.3 M

RDL = Reported Detection Limit

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ACCUTEST

Report of Analysis

Client Sample ID:	C4 7'-7.5'		
Lab Sample ID:	E42068-7	**Date Sampled:**	11/12/98
Matrix:	SO - Soil	**Date Received:**	11/16/98
		Percent Solids:	78.6
Project:	AWI-Athens, NY		

Metals Analysis

Analyte	Result	RDL	Units	DF	Prep	Analyzed	By	Method
Arsenic	6.2	1.3	mg/kg	1	11/20/98	11/24/98	MFH	SW846 6010B
Chromium	40.5	1.3	mg/kg	1	11/20/98	11/24/98	MFH	SW846 6010B

RDL = Reported Detection Limit

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Report of Analysis

Client Sample ID:	C4 7'-7.5'		
Lab Sample ID:	E42068-7	**Date Sampled:**	11/12/98
Matrix:	SO - Soil	**Date Received:**	11/16/98
		Percent Solids:	78.6
Project:	AWI-Athens, NY		

General Chemistry

Analyte	Result	RDL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	3.4	2.5	mg/kg	1	12/01/98	MET	SW846 3060A/7196A
Solids, Percent	78.6		%	1	11/19/98	DM	EPA 160.3 M

RDL = Reported Detection Limit

ACCUTEST

Report of Analysis

Client Sample ID:	C5 4.5-5.5		
Lab Sample ID:	E42068-8	**Date Sampled:**	11/12/98
Matrix:	SO - Soil	**Date Received:**	11/16/98
		Percent Solids:	83.5
Project:	AWI-Athens, NY		

Metals Analysis

Analyte	Result	RDL	Units	DF	Prep	Analyzed	By	Method
Arsenic	7.5	1.2	mg/kg	1	11/24/98	12/03/98	MMC	SW846 6010B
Chromium	39.9	1.2	mg/kg	1	11/24/98	12/03/98	MMC	SW846 6010B

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Report of Analysis

Client Sample ID:	C5 4.5-5.5		
Lab Sample ID:	E42068-8	**Date Sampled:**	11/12/98
Matrix:	SO - Soil	**Date Received:**	11/16/98
		Percent Solids:	83.5
Project:	AWI-Athens, NY		

General Chemistry

Analyte	Result	RDL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	<2.4	2.4	mg/kg	1	12/01/98	MET	SW846 3060A/7196A
Solids, Percent	83.5		%	1	11/19/98	DM	EPA 160.3 M

RDL = Reported Detection Limit

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Report of Analysis

Client Sample ID:	C6 13.5-14.0		
Lab Sample ID:	E42068-9	**Date Sampled:**	11/12/98
Matrix:	SO - Soil	**Date Received:**	11/16/98
		Percent Solids:	84.1
Project:	AWI-Athens, NY		

Metals Analysis

Analyte	Result	RDL	Units	DF	Prep	Analyzed	By	Method
Arsenic	16.0	1.2	mg/kg	1	11/24/98	12/03/98	MMC	SW846 6010B
Chromium	41.9	1.2	mg/kg	1	11/24/98	12/03/98	MMC	SW846 6010B

RDL = Reported Detection Limit

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Report of Analysis

Client Sample ID:	C6 13.5-14.0		
Lab Sample ID:	E42068-9	**Date Sampled:**	11/12/98
Matrix:	SO - Soil	**Date Received:**	11/16/98
		Percent Solids:	84.1
Project:	AWI-Athens, NY		

General Chemistry

Analyte	Result	RDL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	<2.4	2.4	mg/kg	1	12/01/98	MET	SW846 3060A/7196A
Solids, Percent	84.1		%	1	11/19/98	DM	EPA 160.3 M

RDL = Reported Detection Limit

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Report of Analysis

Client Sample ID:	C6 14.0-14.5	**Date Sampled:**	11/12/98
Lab Sample ID:	E42068-10R	**Date Received:**	11/16/98
Matrix:	SO - Soil	**Percent Solids:**	72.8
Project:	AWI-Athens, NY		

Metals Analysis

Analyte	Result	RDL	Units	DF	Prep	Analyzed	By	Method
Arsenic	8.5	1.4	mg/kg	1	12/17/98	12/17/98	BB	SW846 6010B
Chromium	42.5	1.4	mg/kg	1	12/17/98	12/17/98	BB	SW846 6010B

RDL = Reported Detection Limit

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Report of Analysis

Client Sample ID:	C6 14.0-14.5	**Date Sampled:**	11/12/98
Lab Sample ID:	E42068-10R	**Date Received:**	11/16/98
Matrix:	SO - Soil	**Percent Solids:**	72.8
Project:	AWI-Athens, NY		

General Chemistry

Analyte	Result	RDL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	<2.7	2.7	mg/kg	1	12/17/98	MET	SW846 3060A/7196A
Solids, Percent	72.8		%	1	12/17/98	DM	EPA 160.3 M

RDL = Reported Detection Limit

ACCUTEST

Report of Analysis

Client Sample ID:	C7 6.5-7.0		
Lab Sample ID:	E42068-12	**Date Sampled:**	11/12/98
Matrix:	SO - Soil	**Date Received:**	11/16/98
		Percent Solids:	91.2
Project:	AWI-Athens, NY		

Metals Analysis

Analyte	Result	RDL	Units	DF	Prep	Analyzed	By	Method
Arsenic	70.9	1.1	mg/kg	1	11/24/98	12/03/98	MMC	SW846 6010B
Chromium	46.5	1.1	mg/kg	1	11/24/98	12/03/98	MMC	SW846 6010B

RDL = Reported Detection Limit

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Report of Analysis

Client Sample ID:	C7 6.5-7.0		
Lab Sample ID:	E42068-12	**Date Sampled:**	11/12/98
Matrix:	SO - Soil	**Date Received:**	11/16/98
		Percent Solids:	91.2
Project:	AWI-Athens, NY		

General Chemistry

Analyte	Result	RDL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	<2.2	2.2	mg/kg	1	12/01/98	MET	SW846 3060A/7196A
Solids, Percent	91.2		%	1	11/19/98	DM	EPA 160.3 M

RDL = Reported Detection Limit

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Report of Analysis

Client Sample ID:	C7 7.0-7.5			
Lab Sample ID:	E42068-13R		**Date Sampled:**	11/12/98
Matrix:	SO - Soil		**Date Received:**	11/16/98
			Percent Solids:	75.7
Project:	AWI-Athens, NY			

Metals Analysis

Analyte	Result	RDL	Units	DF	Prep	Analyzed	By	Method
Arsenic	10.6	1.3	mg/kg	1	12/17/98	12/17/98	BB	SW846 6010B
Chromium	41.8	1.3	mg/kg	1	12/17/98	12/17/98	BB	SW846 6010B

RDL = Reported Detection Limit

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Report of Analysis

Client Sample ID:	C7 7.0-7.5		
Lab Sample ID:	E42068-13R	**Date Sampled:**	11/12/98
Matrix:	SO - Soil	**Date Received:**	11/16/98
		Percent Solids:	75.7
Project:	AWI-Athens, NY		

General Chemistry

Analyte	Result	RDL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	<2.6	2.6	mg/kg	1	12/17/98	MET	SW846 3060A/7196A
Solids, Percent	75.7		%	1	12/17/98	DM	EPA 160.3 M

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Report of Analysis

Client Sample ID:	C8 6.0-6.5		
Lab Sample ID:	E42068-14	**Date Sampled:**	11/12/98
Matrix:	SO - Soil	**Date Received:**	11/16/98
		Percent Solids:	83.3
Project:	AWI-Athens, NY		

Metals Analysis

Analyte	Result	RDL	Units	DF	Prep	Analyzed	By	Method
Arsenic	25.2	1.2	mg/kg	1	11/24/98	12/03/98	MMC	SW846 6010B
Chromium	99.0	1.2	mg/kg	1	11/24/98	12/03/98	MMC	SW846 6010B

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Report of Analysis

Client Sample ID:	C8 6.0-6.5		
Lab Sample ID:	E42068-14	**Date Sampled:**	11/12/98
Matrix:	SO - Soil	**Date Received:**	11/16/98
		Percent Solids:	83.3
Project:	AWI-Athens, NY		

General Chemistry

Analyte	Result	RDL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	3.5	2.4	mg/kg	1	12/01/98	MET	SW846 3060A/7196A
Solids, Percent	83.3		%	1	11/19/98	DM	EPA 160.3 M

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Report of Analysis

Client Sample ID: C8 6.5-7.0
Lab Sample ID: E42068-15R
Matrix: SO - Soil
Date Sampled: 11/12/98
Date Received: 11/16/98
Percent Solids: 74.5
Project: AWI-Athens, NY

Metals Analysis

Analyte	Result	RDL	Units	DF	Prep	Analyzed	By	Method
Arsenic	9.5	1.3	mg/kg	1	12/17/98	12/17/98	BB	SW846 6010B
Chromium	36.4	1.3	mg/kg	1	12/17/98	12/17/98	BB	SW846 6010B

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Report of Analysis

Client Sample ID:	C8 6.5-7.0	**Date Sampled:**	11/12/98
Lab Sample ID:	E42068-15R	**Date Received:**	11/16/98
Matrix:	SO - Soil	**Percent Solids:**	74.5
Project:	AWI-Athens, NY		

General Chemistry

Analyte	Result	RDL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	<2.7	2.7	mg/kg	1	12/17/98	MET	SW846 3060A/7196A
Solids, Percent	74.5		%	1	12/17/98	DM	EPA 160.3 M

RDL = Reported Detection Limit

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Report of Analysis

Client Sample ID:	C9 7.0-7.5		
Lab Sample ID:	E42068-16	**Date Sampled:**	11/13/98
Matrix:	SO - Soil	**Date Received:**	11/16/98
		Percent Solids:	93.4
Project:	AWI-Athens, NY		

Metals Analysis

Analyte	Result	RDL	Units	DF	Prep	Analyzed	By	Method
Arsenic	50.9	1.1	mg/kg	1	11/24/98	12/03/98	MMC	SW846 6010B
Chromium	29.8	1.1	mg/kg	1	11/24/98	12/03/98	MMC	SW846 6010B

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Report of Analysis

Client Sample ID:	C9 7.0-7.5		
Lab Sample ID:	E42068-16	**Date Sampled:**	11/13/98
Matrix:	SO - Soil	**Date Received:**	11/16/98
		Percent Solids:	93.4
Project:	AWI-Athens, NY		

General Chemistry

Analyte	Result	RDL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	<2.1	2.1	mg/kg	1	12/01/98	MET	SW846 3060A/7196A
Solids, Percent	93.4		%	1	11/19/98	DM	EPA 160.3 M

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Report of Analysis

Client Sample ID:	C9 7.5-8.0		
Lab Sample ID:	E42068-17R	**Date Sampled:**	11/13/98
Matrix:	SO - Soil	**Date Received:**	11/16/98
		Percent Solids:	78.2
Project:	AWI-Athens, NY		

Metals Analysis

Analyte	Result	RDL	Units	DF	Prep	Analyzed	By	Method
Arsenic	6.7	1.3	mg/kg	1	12/17/98	12/17/98	BB	SW846 6010B
Chromium	36.9	1.3	mg/kg	1	12/17/98	12/17/98	BB	SW846 6010B

RDL = Reported Detection Limit

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Report of Analysis

Client Sample ID:	C9 7.5-8.0		
Lab Sample ID:	E42068-17R	**Date Sampled:**	11/13/98
Matrix:	SO - Soil	**Date Received:**	11/16/98
		Percent Solids:	78.2
Project:	AWI-Athens, NY		

General Chemistry

Analyte	Result	RDL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	<2.6	2.6	mg/kg	1	12/17/98	MET	SW846 3060A/7196A
Solids, Percent	78.2		%	1	12/17/98	DM	EPA 160.3 M

RDL = Reported Detection Limit

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Report of Analysis

Client Sample ID:	C10 7.0-7.5		
Lab Sample ID:	E42068-18	**Date Sampled:**	11/13/98
Matrix:	SO - Soil	**Date Received:**	11/16/98
		Percent Solids:	90.0
Project:	AWI-Athens, NY		

Metals Analysis

Analyte	Result	RDL	Units	DF	Prep	Analyzed	By	Method
Arsenic	404	1.1	mg/kg	1	11/24/98	12/03/98	MMC	SW846 6010B
Chromium	312	1.1	mg/kg	1	11/24/98	12/03/98	MMC	SW846 6010B

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Report of Analysis

Client Sample ID:	C10 7.0-7.5		
Lab Sample ID:	E42068-18	**Date Sampled:**	11/13/98
Matrix:	SO - Soil	**Date Received:**	11/16/98
		Percent Solids:	90.0
Project:	AWI-Athens, NY		

General Chemistry

Analyte	Result	RDL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	42.0	2.2	mg/kg	1	12/01/98	MET	SW846 3060A/7196A
Solids, Percent	90		%	1	11/19/98	DM	EPA 160.3 M

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Report of Analysis

Client Sample ID:	C10 7.5-8.0	**Date Sampled:**	11/13/98
Lab Sample ID:	E42068-19R	**Date Received:**	11/16/98
Matrix:	SO - Soil	**Percent Solids:**	76.9
Project:	AWI-Athens, NY		

Metals Analysis

Analyte	Result	RDL	Units	DF	Prep	Analyzed	By	Method
Arsenic	21.3	1.3	mg/kg	1	12/17/98	12/17/98	BB	SW846 6010B
Chromium	348	1.3	mg/kg	1	12/17/98	12/17/98	BB	SW846 6010B

RDL = Reported Detection Limit

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Report of Analysis

Client Sample ID:	C10 7.5-8.0	**Date Sampled:**	11/13/98
Lab Sample ID:	E42068-19R	**Date Received:**	11/16/98
Matrix:	SO - Soil	**Percent Solids:**	76.9
Project:	AWI-Athens, NY		

General Chemistry

Analyte	Result	RDL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	4.3	2.6	mg/kg	1	12/17/98	MET	SW846 3060A/7196A
Solids, Percent	76.9		%	1	12/17/98	DM	EPA 160.3 M

RDL = Reported Detection Limit

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Report of Analysis

Client Sample ID:	C11 2.5-3.0		
Lab Sample ID:	E42068-20	**Date Sampled:**	11/13/98
Matrix:	SO - Soil	**Date Received:**	11/16/98
		Percent Solids:	94.3
Project:	AWI-Athens, NY		

Metals Analysis

Analyte	Result	RDL	Units	DF	Prep	Analyzed	By	Method
Arsenic	74.1	1.1	mg/kg	1	11/24/98	12/03/98	MMC	SW846 6010B
Chromium	21.4	1.1	mg/kg	1	11/24/98	12/03/98	MMC	SW846 6010B

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Report of Analysis

Client Sample ID:	C11 2.5-3.0		
Lab Sample ID:	E42068-20	**Date Sampled:**	11/13/98
Matrix:	SO - Soil	**Date Received:**	11/16/98
		Percent Solids:	94.3
Project:	AWI-Athens, NY		

General Chemistry

Analyte	Result	RDL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	<2.1	2.1	mg/kg	1	12/01/98	MET	SW846 3060A/7196A
Solids, Percent	94.3		%	1	11/19/98	DM	EPA 160.3 M

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Report of Analysis

Client Sample ID:	C11 3.0-3.5			
Lab Sample ID:	E42068-21R		**Date Sampled:**	11/13/98
Matrix:	SO - Soil		**Date Received:**	11/16/98
			Percent Solids:	78.8
Project:	AWI-Athens, NY			

Metals Analysis

Analyte	Result	RDL	Units	DF	Prep	Analyzed	By	Method
Arsenic	10.8	1.3	mg/kg	1	12/17/98	12/17/98	BB	SW846 6010B
Chromium	42.8	1.3	mg/kg	1	12/17/98	12/17/98	BB	SW846 6010B

RDL = Reported Detection Limit

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Report of Analysis

Client Sample ID: C11 3.0-3.5
Lab Sample ID: E42068-21R
Matrix: SO - Soil
Project: AWI-Athens, NY

Date Sampled: 11/13/98
Date Received: 11/16/98
Percent Solids: 78.8

General Chemistry

Analyte	Result	RDL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	<2.5	2.5	mg/kg	1	12/17/98	MET	SW846 3060A/7196A
Solids, Percent	78.8		%	1	12/17/98	DM	EPA 160.3 M

RDL = Reported Detection Limit

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Report of Analysis

Client Sample ID:	C12 2.0-2.5		
Lab Sample ID:	E42068-22	**Date Sampled:**	11/13/98
Matrix:	SO - Soil	**Date Received:**	11/16/98
		Percent Solids:	93.3
Project:	AWI-Athens, NY		

Metals Analysis

Analyte	Result	RDL	Units	DF	Prep	Analyzed	By	Method
Arsenic	9.2	1.1	mg/kg	1	11/24/98	12/03/98	MMC	SW846 6010B
Chromium	730	1.1	mg/kg	1	11/24/98	12/03/98	MMC	SW846 6010B

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Report of Analysis

Client Sample ID:	C12 2.0-2.5		
Lab Sample ID:	E42068-22	**Date Sampled:**	11/13/98
Matrix:	SO - Soil	**Date Received:**	11/16/98
		Percent Solids:	93.3
Project:	AWI-Athens, NY		

General Chemistry

Analyte	Result	RDL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	<2.1	2.1	mg/kg	1	12/01/98	MET	SW846 3060A/7196A
Solids, Percent	93.3		%	1	11/19/98	DM	EPA 160.3 M

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Report of Analysis

Client Sample ID:	C12 2.5-3.0		
Lab Sample ID:	E42068-23R	**Date Sampled:**	11/13/98
Matrix:	SO - Soil	**Date Received:**	11/16/98
		Percent Solids:	80.9
Project:	AWI-Athens, NY		

Metals Analysis

Analyte	Result	RDL	Units	DF	Prep	Analyzed	By	Method
Arsenic	41.7	1.2	mg/kg	1	12/17/98	12/17/98	BB	SW846 6010B
Chromium	108	1.2	mg/kg	1	12/17/98	12/17/98	BB	SW846 6010B

RDL = Reported Detection Limit

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Report of Analysis

Client Sample ID:	C12 2.5-3.0		
Lab Sample ID:	E42068-23R	**Date Sampled:**	11/13/98
Matrix:	SO - Soil	**Date Received:**	11/16/98
		Percent Solids:	80.9
Project:	AWI-Athens, NY		

General Chemistry

Analyte	Result	RDL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	<2.5	2.5	mg/kg	1	12/17/98	MET	SW846 3060A/7196A
Solids, Percent	80.9		%	1	12/17/98	DM	EPA 160.3 M

RDL = Reported Detection Limit

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Report of Analysis

Client Sample ID:	C13 1.5-2.0			
Lab Sample ID:	E42068-24		**Date Sampled:**	11/13/98
Matrix:	SO - Soil		**Date Received:**	11/16/98
			Percent Solids:	94.0
Project:	AWI-Athens, NY			

Metals Analysis

Analyte	Result	RDL	Units	DF	Prep	Analyzed	By	Method
Arsenic	71.7	1.1	mg/kg	1	11/24/98	12/03/98	MMC	SW846 6010B
Chromium	84.7	1.1	mg/kg	1	11/24/98	12/03/98	MMC	SW846 6010B

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Report of Analysis

Client Sample ID:	C13 1.5-2.0		
Lab Sample ID:	E42068-24	**Date Sampled:**	11/13/98
Matrix:	SO - Soil	**Date Received:**	11/16/98
		Percent Solids:	94.0
Project:	AWI-Athens, NY		

General Chemistry

Analyte	Result	RDL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	3.8	2.1	mg/kg	1	12/01/98	MET	SW846 3060A/7196A
Solids, Percent	94		%	1	11/19/98	DM	EPA 160.3 M

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Report of Analysis

Client Sample ID:	C13 2.0-2.5	**Date Sampled:**	11/13/98
Lab Sample ID:	E42068-25R	**Date Received:**	11/16/98
Matrix:	SO - Soil	**Percent Solids:**	80.5
Project:	AWI-Athens, NY		

Metals Analysis

Analyte	Result	RDL	Units	DF	Prep	Analyzed	By	Method
Arsenic	6.9	1.2	mg/kg	1	12/17/98	12/17/98	BB	SW846 6010B
Chromium	32.8	1.2	mg/kg	1	12/17/98	12/17/98	BB	SW846 6010B

RDL = Reported Detection Limit

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Report of Analysis

Client Sample ID:	C13 2.0-2.5		
Lab Sample ID:	E42068-25R	**Date Sampled:**	11/13/98
Matrix:	SO - Soil	**Date Received:**	11/16/98
		Percent Solids:	80.5
Project:	AWI-Athens, NY		

General Chemistry

Analyte	Result	RDL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	<2.5	2.5	mg/kg	1	12/17/98	MET	SW846 3060A/7196A
Solids, Percent	80.5		%	1	12/17/98	DM	EPA 160.3 M

RDL = Reported Detection Limit

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Report of Analysis

Client Sample ID:	C14 1.5-2.0		
Lab Sample ID:	E42068-26	**Date Sampled:**	11/13/98
Matrix:	SO - Soil	**Date Received:**	11/16/98
		Percent Solids:	90.3
Project:	AWI-Athens, NY		

Metals Analysis

Analyte	Result	RDL	Units	DF	Prep	Analyzed	By	Method
Arsenic	911	1.1	mg/kg	1	11/24/98	12/03/98	MMC	SW846 6010B
Chromium	120	1.1	mg/kg	1	11/24/98	12/03/98	MMC	SW846 6010B

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Report of Analysis

Client Sample ID:	C14 1.5-2.0		
Lab Sample ID:	E42068-26	**Date Sampled:**	11/13/98
Matrix:	SO - Soil	**Date Received:**	11/16/98
		Percent Solids:	90.3
Project:	AWI-Athens, NY		

General Chemistry

Analyte	Result	RDL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	30.5	2.2	mg/kg	1	12/01/98	MET	SW846 3060A/7196A
Solids, Percent	90.3		%	1	11/19/98	DM	EPA 160.3 M

RDL = Reported Detection Limit

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Report of Analysis

Client Sample ID:	C14 2.0-2.5	**Date Sampled:**	11/13/98
Lab Sample ID:	E42068-27R	**Date Received:**	11/16/98
Matrix:	SO - Soil	**Percent Solids:**	77.2
Project:	AWI-Athens, NY		

Metals Analysis

Analyte	Result	RDL	Units	DF	Prep	Analyzed	By	Method
Arsenic	23.8	1.3	mg/kg	1	12/17/98	12/17/98	BB	SW846 6010B
Chromium	48.8	1.3	mg/kg	1	12/17/98	12/17/98	BB	SW846 6010B

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Report of Analysis

Client Sample ID:	C14 2.0-2.5		
Lab Sample ID:	E42068-27R	**Date Sampled:**	11/13/98
Matrix:	SO - Soil	**Date Received:**	11/16/98
		Percent Solids:	77.2
Project:	AWI-Athens, NY		

General Chemistry

Analyte	Result	RDL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	<2.6	2.6	mg/kg	1	12/17/98	MET	SW846 3060A/7196A
Solids, Percent	77.2		%	1	12/17/98	DM	EPA 160.3 M

RDL = Reported Detection Limit

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Report of Analysis

Client Sample ID:	C15 2.5-3.0		
Lab Sample ID:	E42068-28	**Date Sampled:**	11/13/98
Matrix:	SO - Soil	**Date Received:**	11/16/98
		Percent Solids:	93.2
Project:	AWI-Athens, NY		

Metals Analysis

Analyte	Result	RDL	Units	DF	Prep	Analyzed	By	Method
Arsenic	75.0	1.1	mg/kg	1	11/24/98	12/03/98	MMC	SW846 6010B
Chromium	28.3	1.1	mg/kg	1	11/24/98	12/03/98	MMC	SW846 6010B

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Report of Analysis

Client Sample ID:	C15 2.5-3.0		
Lab Sample ID:	E42068-28	**Date Sampled:**	11/13/98
Matrix:	SO - Soil	**Date Received:**	11/16/98
		Percent Solids:	93.2
Project:	AWI-Athens, NY		

General Chemistry

Analyte	Result	RDL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	3.4	2.1	mg/kg	1	12/01/98	MET	SW846 3060A/7196A
Solids, Percent	93.2		%	1	11/19/98	DM	EPA 160.3 M

RDL = Reported Detection Limit

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ACCUTEST

Report of Analysis

Client Sample ID:	C15 3.0-3.5	**Date Sampled:**	11/13/98
Lab Sample ID:	E42068-29R	**Date Received:**	11/16/98
Matrix:	SO - Soil	**Percent Solids:**	79.0
Project:	AWI-Athens, NY		

Metals Analysis

Analyte	Result	RDL	Units	DF	Prep	Analyzed	By	Method
Arsenic	8.5	1.3	mg/kg	1	12/17/98	12/17/98	BB	SW846 6010B
Chromium	40.8	1.3	mg/kg	1	12/17/98	12/17/98	BB	SW846 6010B

RDL = Reported Detection Limit

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ACCUTEST.

Report of Analysis

Client Sample ID:	C15 3.0-3.5		
Lab Sample ID:	E42068-29R	**Date Sampled:**	11/13/98
Matrix:	SO - Soil	**Date Received:**	11/16/98
		Percent Solids:	79.0
Project:	AWI-Athens, NY		

General Chemistry

Analyte	Result	RDL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	<2.5	2.5	mg/kg	1	12/17/98	MET	SW846 3060A/7196A
Solids, Percent	79		%	1	12/17/98	DM	EPA 160.3 M

RDL = Reported Detection Limit

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ACCUTEST

Report of Analysis

Client Sample ID:	CB 3.5-4.0		
Lab Sample ID:	E42068-11	**Date Sampled:**	11/13/98
Matrix:	SO - Soil	**Date Received:**	11/16/98
		Percent Solids:	79.0
Project:	AWI-Athens, NY		

Metals Analysis

Analyte	Result	RDL	Units	DF	Prep	Analyzed	By	Method
Arsenic	6.6	1.3	mg/kg	1	11/24/98	12/03/98	MMC	SW846 6010B
Chromium	29.0	1.3	mg/kg	1	11/24/98	12/03/98	MMC	SW846 6010B

RDL = Reported Detection Limit

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ACCUTEST

Report of Analysis

Client Sample ID:	CB 3.5-4.0		
Lab Sample ID:	E42068-11	**Date Sampled:**	11/13/98
Matrix:	SO - Soil	**Date Received:**	11/16/98
		Percent Solids:	79.0
Project:	AWI-Athens, NY		

General Chemistry

Analyte	Result	RDL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	<2.5	2.5	mg/kg	1	12/01/98	MET	SW846 3060A/7196A
Solids, Percent	79		%	1	11/19/98	DM	EPA 160.3 M

RDL = Reported Detection Limit

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Attachment 7c

TestAmerica Laboratories, Inc.
July 2014, Analytical Data

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Buffalo
10 Hazelwood Drive
Amherst, NY 14228-2298
Tel: (716)691-2600

TestAmerica Job ID: 480-62517-1
Client Project/Site: NE Treater Project

For:
Sterling Environmental Engineering PC
24 Wade Road
Latham, New York 12110

Attn: Mr. Vedran Cirkovic

Authorized for release by:
7/8/2014 11:08:04 AM

Anne Pridgeon, Project Management Assistant I
anne.pridgeon@testamericainc.com

Designee for

Lisa Shaffer, Project Manager II
(716)504-9816
lisa.shaffer@testamericainc.com

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

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

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

Table of Contents

Definitions/Glossary

Qualifiers

Metals

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.

Glossary

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

Job ID: 480-62517-1

Laboratory: TestAmerica Buffalo

Narrative

Job Narrative
480-62517-1

Comments
No additional comments.

Receipt
The samples were received on 6/24/2014 1:00 AM and 6/26/2014 1:30 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 2.4° C and 3.1° C.

Metals
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Organic Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

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Client Sample ID: S-1A — Lab Sample ID: 480-62517-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	1430		7.5	1.5	mg/Kg	5	☼	6010C	Total/NA
Chromium	1060		1.0	0.20	mg/Kg	1	☼	6010C	Total/NA
Arsenic	0.85	B	0.50	0.0032	mg/L	1		6010C	TCLP
Chromium	0.054	J B	0.50	0.0022	mg/L	1		6010C	TCLP

Client Sample ID: S-1B — Lab Sample ID: 480-62517-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	95.3		1.7	0.33	mg/Kg	1	☼	6010C	Total/NA
Chromium	316		1.1	0.22	mg/Kg	1	☼	6010C	Total/NA
Arsenic	0.059	J B	0.50	0.0032	mg/L	1		6010C	TCLP
Chromium	0.080	J B	0.50	0.0022	mg/L	1		6010C	TCLP

Client Sample ID: S-1C — Lab Sample ID: 480-62517-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	6.7		1.7	0.34	mg/Kg	1	☼	6010C	Total/NA
Chromium	20.6		1.1	0.23	mg/Kg	1	☼	6010C	Total/NA
Arsenic	0.0077	J B	0.50	0.0032	mg/L	1		6010C	TCLP
Chromium	0.0084	J B	0.50	0.0022	mg/L	1		6010C	TCLP

Client Sample ID: S-1D — Lab Sample ID: 480-62517-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	17.1		1.8	0.37	mg/Kg	1	☼	6010C	Total/NA
Chromium	37.3		1.2	0.24	mg/Kg	1	☼	6010C	Total/NA
Arsenic	0.019	J B	0.50	0.0032	mg/L	1		6010C	TCLP
Chromium	0.0073	J B	0.50	0.0022	mg/L	1		6010C	TCLP

Client Sample ID: S-1E — Lab Sample ID: 480-62517-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	9.2		1.6	0.32	mg/Kg	1	☼	6010C	Total/NA
Chromium	25.6		1.1	0.21	mg/Kg	1	☼	6010C	Total/NA
Arsenic	0.010	J B	0.50	0.0032	mg/L	1		6010C	TCLP
Chromium	0.0069	J B	0.50	0.0022	mg/L	1		6010C	TCLP

Client Sample ID: S-2A — Lab Sample ID: 480-62517-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	26.0		1.3	0.27	mg/Kg	1	☼	6010C	Total/NA
Chromium	11.7		0.90	0.18	mg/Kg	1	☼	6010C	Total/NA
Arsenic	0.011	J B	0.50	0.0032	mg/L	1		6010C	TCLP
Chromium	0.0068	J B	0.50	0.0022	mg/L	1		6010C	TCLP

Client Sample ID: S-2B — Lab Sample ID: 480-62517-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	10.1		1.6	0.33	mg/Kg	1	☼	6010C	Total/NA
Chromium	20.8		1.1	0.22	mg/Kg	1	☼	6010C	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: S-2B (Continued) — Lab Sample ID: 480-62517-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.0078	J B	0.50	0.0032	mg/L	1		6010C	TCLP
Chromium	0.0072	J B	0.50	0.0022	mg/L	1		6010C	TCLP

Client Sample ID: S-2C — Lab Sample ID: 480-62517-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	8.0		1.6	0.32	mg/Kg	1	☼	6010C	Total/NA
Chromium	17.3		1.1	0.22	mg/Kg	1	☼	6010C	Total/NA
Arsenic	0.0094	J B	0.50	0.0032	mg/L	1		6010C	TCLP
Chromium	0.0067	J B	0.50	0.0022	mg/L	1		6010C	TCLP

Client Sample ID: S-2D — Lab Sample ID: 480-62517-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	7.2		1.7	0.34	mg/Kg	1	☼	6010C	Total/NA
Chromium	17.3		1.1	0.23	mg/Kg	1	☼	6010C	Total/NA
Arsenic	0.0075	J B	0.50	0.0032	mg/L	1		6010C	TCLP
Chromium	0.014	J B	0.50	0.0022	mg/L	1		6010C	TCLP

Client Sample ID: S-2E — Lab Sample ID: 480-62517-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	8.4		1.6	0.32	mg/Kg	1	☼	6010C	Total/NA
Chromium	16.7		1.1	0.21	mg/Kg	1	☼	6010C	Total/NA
Arsenic	0.0068	J B	0.50	0.0032	mg/L	1		6010C	TCLP
Chromium	0.0064	J B	0.50	0.0022	mg/L	1		6010C	TCLP

Client Sample ID: S-3A — Lab Sample ID: 480-62517-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	56.8		1.5	0.31	mg/Kg	1	☼	6010C	Total/NA
Chromium	76.5		1.0	0.21	mg/Kg	1	☼	6010C	Total/NA
Arsenic	0.011	J B	0.50	0.0032	mg/L	1		6010C	TCLP
Chromium	0.018	J B	0.50	0.0022	mg/L	1		6010C	TCLP

Client Sample ID: S-3B — Lab Sample ID: 480-62517-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	7.5		1.9	0.38	mg/Kg	1	☼	6010C	Total/NA
Chromium	24.9		1.3	0.26	mg/Kg	1	☼	6010C	Total/NA
Arsenic	0.0047	J B	0.50	0.0032	mg/L	1		6010C	TCLP
Chromium	0.0074	J B	0.50	0.0022	mg/L	1		6010C	TCLP

Client Sample ID: S-3C — Lab Sample ID: 480-62517-13

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	9.0		2.1	0.42	mg/Kg	1	☼	6010C	Total/NA
Chromium	29.8		1.4	0.28	mg/Kg	1	☼	6010C	Total/NA
Arsenic	0.0062	J B	0.50	0.0032	mg/L	1		6010C	TCLP
Chromium	0.0066	J B	0.50	0.0022	mg/L	1		6010C	TCLP

This Detection Summary does not include radiochemical test results.

Client Sample ID: S-3D — Lab Sample ID: 480-62517-14

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	6.7		2.0	0.41	mg/Kg	1	☼	6010C	Total/NA
Chromium	19.9		1.4	0.27	mg/Kg	1	☼	6010C	Total/NA
Arsenic	0.0083	J B	0.50	0.0032	mg/L	1		6010C	TCLP
Chromium	0.0074	J B	0.50	0.0022	mg/L	1		6010C	TCLP

Client Sample ID: S-3E — Lab Sample ID: 480-62517-15

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	7.0		1.9	0.38	mg/Kg	1	☼	6010C	Total/NA
Chromium	22.9		1.3	0.25	mg/Kg	1	☼	6010C	Total/NA
Arsenic	0.0095	J B	0.50	0.0032	mg/L	1		6010C	TCLP
Chromium	0.0086	J B	0.50	0.0022	mg/L	1		6010C	TCLP

Client Sample ID: S-4A — Lab Sample ID: 480-62517-16

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	78.0		1.2	0.24	mg/Kg	1	☼	6010C	Total/NA
Chromium	55.0		0.81	0.16	mg/Kg	1	☼	6010C	Total/NA
Arsenic	0.016	J B	0.50	0.0032	mg/L	1		6010C	TCLP
Chromium	0.0077	J B	0.50	0.0022	mg/L	1		6010C	TCLP

Client Sample ID: S-4B — Lab Sample ID: 480-62517-17

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	39.7		1.7	0.34	mg/Kg	1	☼	6010C	Total/NA
Chromium	66.8		1.1	0.23	mg/Kg	1	☼	6010C	Total/NA
Arsenic	0.25	J B	0.50	0.0032	mg/L	1		6010C	TCLP
Chromium	0.032	J B	0.50	0.0022	mg/L	1		6010C	TCLP

Client Sample ID: S-4C — Lab Sample ID: 480-62517-18

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	53.2		1.2	0.24	mg/Kg	1	☼	6010C	Total/NA
Chromium	46.2		0.81	0.16	mg/Kg	1	☼	6010C	Total/NA
Arsenic	0.17	J B	0.50	0.0032	mg/L	1		6010C	TCLP
Chromium	0.010	J B	0.50	0.0022	mg/L	1		6010C	TCLP

Client Sample ID: S-4D — Lab Sample ID: 480-62517-19

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	64.1		1.5	0.30	mg/Kg	1	☼	6010C	Total/NA
Chromium	40.7		0.99	0.20	mg/Kg	1	☼	6010C	Total/NA
Arsenic	0.21	J B	0.50	0.0032	mg/L	1		6010C	TCLP
Chromium	0.013	J B	0.50	0.0022	mg/L	1		6010C	TCLP

Client Sample ID: S-4E — Lab Sample ID: 480-62517-20

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	52.6		1.3	0.25	mg/Kg	1	☼	6010C	Total/NA
Chromium	47.3		0.85	0.17	mg/Kg	1	☼	6010C	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: Sterling Environmental Engineering PC
Project/Site: NE Treater Project

TestAmerica Job ID: 480-62517-1

Client Sample ID: S-4E (Continued) — Lab Sample ID: 480-62517-20

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.27	J B	0.50	0.0032	mg/L	1		6010C	TCLP
Chromium	0.015	J B	0.50	0.0022	mg/L	1		6010C	TCLP

Client Sample ID: C-1A — Lab Sample ID: 480-62701-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	7.6		1.3	0.26	mg/Kg	1	☼	6010C	Total/NA
Chromium	262		0.88	0.18	mg/Kg	1	☼	6010C	Total/NA
Arsenic	0.0062	J B	0.50	0.0032	mg/L	1		6010C	TCLP
Chromium	5.7	B	0.50	0.0022	mg/L	1		6010C	TCLP

Client Sample ID: C-1B — Lab Sample ID: 480-62701-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	740		2.6	0.53	mg/Kg	2	☼	6010C	Total/NA
Chromium	1610		0.88	0.18	mg/Kg	1	☼	6010C	Total/NA
Arsenic	0.015	J B	0.50	0.0032	mg/L	1		6010C	TCLP
Chromium	5.3	B	0.50	0.0022	mg/L	1		6010C	TCLP

Client Sample ID: C-1C — Lab Sample ID: 480-62701-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	1290		7.2	1.4	mg/Kg	5	☼	6010C	Total/NA
Chromium	726		0.96	0.19	mg/Kg	1	☼	6010C	Total/NA
Arsenic	0.034	J B	0.50	0.0032	mg/L	1		6010C	TCLP
Chromium	0.83	B	0.50	0.0022	mg/L	1		6010C	TCLP

Client Sample ID: C-2A — Lab Sample ID: 480-62701-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	7.4		1.5	0.30	mg/Kg	1	☼	6010C	Total/NA
Chromium	20.0		1.0	0.20	mg/Kg	1	☼	6010C	Total/NA
Arsenic	0.0054	J B	0.50	0.0032	mg/L	1		6010C	TCLP
Chromium	0.14	J B	0.50	0.0022	mg/L	1		6010C	TCLP

Client Sample ID: C-2B — Lab Sample ID: 480-62701-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	8.6		1.5	0.29	mg/Kg	1	☼	6010C	Total/NA
Chromium	15.5		0.98	0.20	mg/Kg	1	☼	6010C	Total/NA
Arsenic	0.0069	J B	0.50	0.0032	mg/L	1		6010C	TCLP
Chromium	0.058	J B	0.50	0.0022	mg/L	1		6010C	TCLP

Client Sample ID: C-2C — Lab Sample ID: 480-62701-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	6.7		1.4	0.28	mg/Kg	1	☼	6010C	Total/NA
Chromium	13.1		0.94	0.19	mg/Kg	1	☼	6010C	Total/NA
Arsenic	0.0073	J	0.50	0.0032	mg/L	1		6010C	TCLP
Chromium	0.077	J B	0.50	0.0022	mg/L	1		6010C	TCLP

This Detection Summary does not include radiochemical test results.

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Client Sample ID: C-3A

Lab Sample ID: 480-62701-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	9.1		1.5	0.29	mg/Kg	1	☼	6010C	Total/NA
Chromium	257		0.97	0.19	mg/Kg	1	☼	6010C	Total/NA
Arsenic	0.0058	J B	0.50	0.0032	mg/L	1		6010C	TCLP
Chromium	4.3	B	0.50	0.0022	mg/L	1		6010C	TCLP

Client Sample ID: C-3B

Lab Sample ID: 480-62701-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	48.7		1.3	0.26	mg/Kg	1	☼	6010C	Total/NA
Chromium	61.0		0.87	0.17	mg/Kg	1	☼	6010C	Total/NA
Arsenic	0.0060	J B	0.50	0.0032	mg/L	1		6010C	TCLP
Chromium	0.25	J B	0.50	0.0022	mg/L	1		6010C	TCLP

Client Sample ID: C-3C

Lab Sample ID: 480-62701-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	88.5		1.6	0.31	mg/Kg	1	☼	6010C	Total/NA
Chromium	96.0		1.0	0.21	mg/Kg	1	☼	6010C	Total/NA
Arsenic	0.013	J B	0.50	0.0032	mg/L	1		6010C	TCLP
Chromium	0.88	B	0.50	0.0022	mg/L	1		6010C	TCLP

Client Sample ID: C-4A

Lab Sample ID: 480-62701-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	8.5		1.4	0.29	mg/Kg	1	☼	6010C	Total/NA
Chromium	299		0.95	0.19	mg/Kg	1	☼	6010C	Total/NA
Arsenic	0.0063	J B	0.50	0.0032	mg/L	1		6010C	TCLP
Chromium	6.9	B	0.50	0.0022	mg/L	1		6010C	TCLP

Client Sample ID: C-4B

Lab Sample ID: 480-62701-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	198		1.3	0.26	mg/Kg	1	☼	6010C	Total/NA
Chromium	111		0.86	0.17	mg/Kg	1	☼	6010C	Total/NA
Arsenic	0.013	J B	0.50	0.0032	mg/L	1		6010C	TCLP
Chromium	0.073	J B	0.50	0.0022	mg/L	1		6010C	TCLP

Client Sample ID: C-4C

Lab Sample ID: 480-62701-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	448		1.4	0.29	mg/Kg	1	☼	6010C	Total/NA
Chromium	237		0.96	0.19	mg/Kg	1	☼	6010C	Total/NA
Arsenic	0.037	J B	0.50	0.0032	mg/L	1		6010C	TCLP
Chromium	0.12	J B	0.50	0.0022	mg/L	1		6010C	TCLP

This Detection Summary does not include radiochemical test results.

Client Sample ID: S-1A

Lab Sample ID: 480-62517-1

Date Collected: 06/23/14 09:30
Matrix: Solid
Date Received: 06/24/14 01:00
Percent Solids: 96.5

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	1430		7.5	1.5	mg/Kg	☼	06/26/14 13:15	06/30/14 14:21	5
Chromium	1060		1.0	0.20	mg/Kg	☼	06/26/14 13:15	06/30/14 12:29	1

Method: 6010C - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.85	B	0.50	0.0032	mg/L		07/01/14 11:18	07/02/14 17:05	1
Chromium	0.054	J B	0.50	0.0022	mg/L		07/01/14 11:18	07/02/14 17:05	1

Client Sample ID: S-1B

Lab Sample ID: 480-62517-2

Date Collected: 06/23/14 09:35
Matrix: Solid
Date Received: 06/24/14 01:00
Percent Solids: 81.9

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	95.3		1.7	0.33	mg/Kg	☼	06/26/14 13:15	06/30/14 12:49	1
Chromium	316		1.1	0.22	mg/Kg	☼	06/26/14 13:15	06/30/14 12:49	1

Method: 6010C - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.059	J B	0.50	0.0032	mg/L		07/01/14 11:18	07/02/14 17:09	1
Chromium	0.080	J B	0.50	0.0022	mg/L		07/01/14 11:18	07/02/14 17:09	1

Client Sample ID: S-1C

Lab Sample ID: 480-62517-3

Date Collected: 06/23/14 09:40
Matrix: Solid
Date Received: 06/24/14 01:00
Percent Solids: 78.7

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	6.7		1.7	0.34	mg/Kg	☼	06/26/14 13:15	06/30/14 12:53	1
Chromium	20.6		1.1	0.23	mg/Kg	☼	06/26/14 13:15	06/30/14 12:53	1

Method: 6010C - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0077	J B	0.50	0.0032	mg/L		07/01/14 11:11	07/02/14 15:59	1
Chromium	0.0084	J B	0.50	0.0022	mg/L		07/01/14 11:11	07/02/14 15:59	1

Client Sample ID: S-1D

Lab Sample ID: 480-62517-4

Date Collected: 06/23/14 09:45
Matrix: Solid
Date Received: 06/24/14 01:00
Percent Solids: 78.6

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	17.1		1.8	0.37	mg/Kg	☼	06/26/14 13:15	06/30/14 12:57	1
Chromium	37.3		1.2	0.24	mg/Kg	☼	06/26/14 13:15	06/30/14 12:57	1

Method: 6010C - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.019	J B	0.50	0.0032	mg/L		07/01/14 11:18	07/02/14 17:21	1
Chromium	0.0073	J B	0.50	0.0022	mg/L		07/01/14 11:18	07/02/14 17:21	1

Client Sample ID: S-1E

Lab Sample ID: 480-62517-5

Date Collected: 06/23/14 09:50

Matrix: Solid

Date Received: 06/24/14 01:00

Percent Solids: 75.1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	9.2		1.6	0.32	mg/Kg	☼	06/26/14 13:15	06/30/14 13:01	1
Chromium	25.6		1.1	0.21	mg/Kg	☼	06/26/14 13:15	06/30/14 13:01	1

Method: 6010C - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.010	J B	0.50	0.0032	mg/L		07/01/14 11:18	07/02/14 17:25	1
Chromium	0.0069	J B	0.50	0.0022	mg/L		07/01/14 11:18	07/02/14 17:25	1

Client Sample ID: S-2A

Lab Sample ID: 480-62517-6

Date Collected: 06/23/14 10:30

Matrix: Solid

Date Received: 06/24/14 01:00

Percent Solids: 90.7

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	26.0		1.3	0.27	mg/Kg	☼	06/26/14 13:15	06/30/14 13:13	1
Chromium	11.7		0.90	0.18	mg/Kg	☼	06/26/14 13:15	06/30/14 13:13	1

Method: 6010C - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.011	J B	0.50	0.0032	mg/L		07/01/14 11:18	07/02/14 17:30	1
Chromium	0.0068	J B	0.50	0.0022	mg/L		07/01/14 11:18	07/02/14 17:30	1

Client Sample ID: S-2B

Lab Sample ID: 480-62517-7

Date Collected: 06/23/14 10:35

Matrix: Solid

Date Received: 06/24/14 01:00

Percent Solids: 75.3

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	10.1		1.6	0.33	mg/Kg	☼	06/26/14 13:15	06/30/14 13:17	1
Chromium	20.8		1.1	0.22	mg/Kg	☼	06/26/14 13:15	06/30/14 13:17	1

Method: 6010C - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0078	J B	0.50	0.0032	mg/L		07/01/14 11:12	07/02/14 16:20	1
Chromium	0.0072	J B	0.50	0.0022	mg/L		07/01/14 11:12	07/02/14 16:20	1

Client Sample ID: S-2C

Lab Sample ID: 480-62517-8

Date Collected: 06/23/14 10:40

Matrix: Solid

Date Received: 06/24/14 01:00

Percent Solids: 82.3

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	8.0		1.6	0.32	mg/Kg	☼	06/26/14 13:15	06/30/14 13:21	1
Chromium	17.3		1.1	0.22	mg/Kg	☼	06/26/14 13:15	06/30/14 13:21	1

Method: 6010C - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0094	J B	0.50	0.0032	mg/L		07/01/14 11:12	07/02/14 16:32	1
Chromium	0.0067	J B	0.50	0.0022	mg/L		07/01/14 11:12	07/02/14 16:32	1

Client: Sterling Environmental Engineering PC
Project/Site: NE Treater Project

TestAmerica Job ID: 480-62517-1

Client Sample ID: S-2D

Lab Sample ID: 480-62517-9

Date Collected: 06/23/14 10:45
Date Received: 06/24/14 01:00

Matrix: Solid
Percent Solids: 79.1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	7.2		1.7	0.34	mg/Kg	☼	06/26/14 13:15	06/30/14 13:25	1
Chromium	17.3		1.1	0.23	mg/Kg	☼	06/26/14 13:15	06/30/14 13:25	1

Method: 6010C - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0075	J B	0.50	0.0032	mg/L		07/01/14 11:12	07/02/14 16:36	1
Chromium	0.014	J B	0.50	0.0022	mg/L		07/01/14 11:12	07/02/14 16:36	1

Client Sample ID: S-2E

Lab Sample ID: 480-62517-10

Date Collected: 06/23/14 10:50
Date Received: 06/24/14 01:00

Matrix: Solid
Percent Solids: 75.2

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	8.4		1.6	0.32	mg/Kg	☼	06/26/14 13:15	06/30/14 13:29	1
Chromium	16.7		1.1	0.21	mg/Kg	☼	06/26/14 13:15	06/30/14 13:29	1

Method: 6010C - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0068	J B	0.50	0.0032	mg/L		07/01/14 11:18	07/02/14 17:34	1
Chromium	0.0064	J B	0.50	0.0022	mg/L		07/01/14 11:18	07/02/14 17:34	1

Client Sample ID: S-3A

Lab Sample ID: 480-62517-11

Date Collected: 06/23/14 11:30
Date Received: 06/24/14 01:00

Matrix: Solid
Percent Solids: 95.1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	56.8		1.5	0.31	mg/Kg	☼	06/26/14 13:15	06/30/14 13:33	1
Chromium	76.5		1.0	0.21	mg/Kg	☼	06/26/14 13:15	06/30/14 13:33	1

Method: 6010C - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.011	J B	0.50	0.0032	mg/L		07/01/14 11:18	07/02/14 17:38	1
Chromium	0.018	J B	0.50	0.0022	mg/L		07/01/14 11:18	07/02/14 17:38	1

Client Sample ID: S-3B

Lab Sample ID: 480-62517-12

Date Collected: 06/23/14 11:35
Date Received: 06/24/14 01:00

Matrix: Solid
Percent Solids: 76.8

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	7.5		1.9	0.38	mg/Kg	☼	06/26/14 13:15	06/30/14 13:37	1
Chromium	24.9		1.3	0.26	mg/Kg	☼	06/26/14 13:15	06/30/14 13:37	1

Method: 6010C - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0047	J B	0.50	0.0032	mg/L		07/01/14 11:18	07/02/14 17:47	1
Chromium	0.0074	J B	0.50	0.0022	mg/L		07/01/14 11:18	07/02/14 17:47	1

Client Sample ID: S-3C

Date Collected: 06/23/14 11:40
Date Received: 06/24/14 01:00

Lab Sample ID: 480-62517-13
Matrix: Solid
Percent Solids: 65.5

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	9.0		2.1	0.42	mg/Kg	☼	06/26/14 13:15	06/30/14 13:41	1
Chromium	29.8		1.4	0.28	mg/Kg	☼	06/26/14 13:15	06/30/14 13:41	1

Method: 6010C - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0062	J B	0.50	0.0032	mg/L		07/01/14 11:18	07/02/14 17:51	1
Chromium	0.0066	J B	0.50	0.0022	mg/L		07/01/14 11:18	07/02/14 17:51	1

Client Sample ID: S-3D

Date Collected: 06/23/14 11:45
Date Received: 06/24/14 01:00

Lab Sample ID: 480-62517-14
Matrix: Solid
Percent Solids: 69.7

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	6.7		2.0	0.41	mg/Kg	☼	06/26/14 13:15	06/30/14 13:45	1
Chromium	19.9		1.4	0.27	mg/Kg	☼	06/26/14 13:15	06/30/14 13:45	1

Method: 6010C - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0083	J B	0.50	0.0032	mg/L		07/01/14 11:12	07/02/14 16:40	1
Chromium	0.0074	J B	0.50	0.0022	mg/L		07/01/14 11:12	07/02/14 16:40	1

Client Sample ID: S-3E

Date Collected: 06/23/14 11:50
Date Received: 06/24/14 01:00

Lab Sample ID: 480-62517-15
Matrix: Solid
Percent Solids: 77.8

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	7.0		1.9	0.38	mg/Kg	☼	06/26/14 13:15	06/30/14 13:50	1
Chromium	22.9		1.3	0.25	mg/Kg	☼	06/26/14 13:15	06/30/14 13:50	1

Method: 6010C - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0095	J B	0.50	0.0032	mg/L		07/01/14 11:12	07/02/14 16:44	1
Chromium	0.0086	J B	0.50	0.0022	mg/L		07/01/14 11:12	07/02/14 16:44	1

Client Sample ID: S-4A

Date Collected: 06/23/14 12:15
Date Received: 06/24/14 01:00

Lab Sample ID: 480-62517-16
Matrix: Solid
Percent Solids: 94.9

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	78.0		1.2	0.24	mg/Kg	☼	06/26/14 13:15	06/30/14 14:01	1
Chromium	55.0		0.81	0.16	mg/Kg	☼	06/26/14 13:15	06/30/14 14:01	1

Method: 6010C - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.016	J B	0.50	0.0032	mg/L		07/01/14 11:18	07/02/14 17:55	1
Chromium	0.0077	J B	0.50	0.0022	mg/L		07/01/14 11:18	07/02/14 17:55	1

Client Sample ID: S-4B

Lab Sample ID: 480-62517-17
Date Collected: 06/23/14 12:20
Matrix: Solid
Date Received: 06/24/14 01:00
Percent Solids: 73.6

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	39.7		1.7	0.34	mg/Kg	☼	06/26/14 13:15	06/30/14 14:05	1
Chromium	66.8		1.1	0.23	mg/Kg	☼	06/26/14 13:15	06/30/14 14:05	1

Method: 6010C - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.25	J B	0.50	0.0032	mg/L		07/01/14 11:18	07/02/14 17:43	1
Chromium	0.032	J B	0.50	0.0022	mg/L		07/01/14 11:18	07/02/14 17:43	1

Client Sample ID: S-4C

Lab Sample ID: 480-62517-18
Date Collected: 06/23/14 12:25
Matrix: Solid
Date Received: 06/24/14 01:00
Percent Solids: 92.5

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	53.2		1.2	0.24	mg/Kg	☼	06/26/14 13:15	06/30/14 14:09	1
Chromium	46.2		0.81	0.16	mg/Kg	☼	06/26/14 13:15	06/30/14 14:09	1

Method: 6010C - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.17	J B	0.50	0.0032	mg/L		07/01/14 11:18	07/02/14 18:00	1
Chromium	0.010	J B	0.50	0.0022	mg/L		07/01/14 11:18	07/02/14 18:00	1

Client Sample ID: S-4D

Lab Sample ID: 480-62517-19
Date Collected: 06/23/14 12:30
Matrix: Solid
Date Received: 06/24/14 01:00
Percent Solids: 95.5

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	64.1		1.5	0.30	mg/Kg	☼	06/26/14 13:15	06/30/14 14:13	1
Chromium	40.7		0.99	0.20	mg/Kg	☼	06/26/14 13:15	06/30/14 14:13	1

Method: 6010C - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.21	J B	0.50	0.0032	mg/L		07/01/14 11:18	07/02/14 18:12	1
Chromium	0.013	J B	0.50	0.0022	mg/L		07/01/14 11:18	07/02/14 18:12	1

Client Sample ID: S-4E

Lab Sample ID: 480-62517-20
Date Collected: 06/23/14 12:35
Matrix: Solid
Date Received: 06/24/14 01:00
Percent Solids: 95.9

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	52.6		1.3	0.25	mg/Kg	☼	06/26/14 13:15	06/30/14 14:17	1
Chromium	47.3		0.85	0.17	mg/Kg	☼	06/26/14 13:15	06/30/14 14:17	1

Method: 6010C - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.27	J B	0.50	0.0032	mg/L		07/01/14 11:18	07/02/14 18:16	1
Chromium	0.015	J B	0.50	0.0022	mg/L		07/01/14 11:18	07/02/14 18:16	1

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Client Sample ID: C-1A

Date Collected: 06/25/14 13:00
Date Received: 06/26/14 01:30

Lab Sample ID: 480-62701-1
Matrix: Solid
Percent Solids: 93.3

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	7.6		1.3	0.26	mg/Kg	☼	06/30/14 10:54	07/01/14 13:13	1
Chromium	262		0.88	0.18	mg/Kg	☼	06/30/14 10:54	07/01/14 13:13	1

Method: 6010C - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0062	J B	0.50	0.0032	mg/L		07/02/14 10:52	07/03/14 14:12	1
Chromium	5.7	B	0.50	0.0022	mg/L		07/02/14 10:52	07/03/14 14:12	1

Client Sample ID: C-1B

Date Collected: 06/24/14 13:00
Date Received: 06/26/14 01:30

Lab Sample ID: 480-62701-2
Matrix: Solid
Percent Solids: 89.2

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	740		2.6	0.53	mg/Kg	☼	06/30/14 10:54	07/01/14 15:03	2
Chromium	1610		0.88	0.18	mg/Kg	☼	06/30/14 10:54	07/01/14 13:17	1

Method: 6010C - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.015	J B	0.50	0.0032	mg/L		07/02/14 10:52	07/03/14 14:16	1
Chromium	5.3	B	0.50	0.0022	mg/L		07/02/14 10:52	07/03/14 14:16	1

Client Sample ID: C-1C

Date Collected: 06/24/14 13:30
Date Received: 06/26/14 01:30

Lab Sample ID: 480-62701-3
Matrix: Solid
Percent Solids: 92.9

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	1290		7.2	1.4	mg/Kg	☼	06/30/14 10:54	07/01/14 15:07	5
Chromium	726		0.96	0.19	mg/Kg	☼	06/30/14 10:54	07/01/14 13:21	1

Method: 6010C - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.034	J B	0.50	0.0032	mg/L		07/02/14 10:52	07/03/14 14:20	1
Chromium	0.83	B	0.50	0.0022	mg/L		07/02/14 10:52	07/03/14 14:20	1

Client Sample ID: C-2A

Date Collected: 06/25/14 13:30
Date Received: 06/26/14 01:30

Lab Sample ID: 480-62701-4
Matrix: Solid
Percent Solids: 93.6

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	7.4		1.5	0.30	mg/Kg	☼	06/30/14 10:54	07/01/14 13:25	1
Chromium	20.0		1.0	0.20	mg/Kg	☼	06/30/14 10:54	07/01/14 13:25	1

Method: 6010C - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0054	J B	0.50	0.0032	mg/L		07/02/14 10:52	07/03/14 14:25	1
Chromium	0.14	J B	0.50	0.0022	mg/L		07/02/14 10:52	07/03/14 14:25	1

Client Sample ID: C-2B

Lab Sample ID: 480-62701-5

Date Collected: 06/24/14 14:00
Date Received: 06/26/14 01:30

Matrix: Solid
Percent Solids: 92.4

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	8.6		1.5	0.29	mg/Kg	☼	06/30/14 10:54	07/01/14 13:30	1
Chromium	15.5		0.98	0.20	mg/Kg	☼	06/30/14 10:54	07/01/14 13:30	1

Method: 6010C - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0069	J B	0.50	0.0032	mg/L		07/02/14 10:52	07/03/14 14:29	1
Chromium	0.058	J B	0.50	0.0022	mg/L		07/02/14 10:52	07/03/14 14:29	1

Client Sample ID: C-2C

Lab Sample ID: 480-62701-6

Date Collected: 06/24/14 14:30
Date Received: 06/26/14 01:30

Matrix: Solid
Percent Solids: 94.5

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	6.7		1.4	0.28	mg/Kg	☼	06/30/14 10:54	07/01/14 13:34	1
Chromium	13.1		0.94	0.19	mg/Kg	☼	06/30/14 10:54	07/01/14 13:34	1

Method: 6010C - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0073	J	0.50	0.0032	mg/L		07/02/14 10:35	07/03/14 15:55	1
Chromium	0.077	J B	0.50	0.0022	mg/L		07/02/14 10:35	07/03/14 15:55	1

Client Sample ID: C-3A

Lab Sample ID: 480-62701-7

Date Collected: 06/25/14 14:00
Date Received: 06/26/14 01:30

Matrix: Solid
Percent Solids: 94.8

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	9.1		1.5	0.29	mg/Kg	☼	06/30/14 10:54	07/01/14 13:38	1
Chromium	257		0.97	0.19	mg/Kg	☼	06/30/14 10:54	07/01/14 13:38	1

Method: 6010C - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0058	J B	0.50	0.0032	mg/L		07/02/14 10:52	07/03/14 14:33	1
Chromium	4.3	B	0.50	0.0022	mg/L		07/02/14 10:52	07/03/14 14:33	1

Client Sample ID: C-3B

Lab Sample ID: 480-62701-8

Date Collected: 06/24/14 15:00
Date Received: 06/26/14 01:30

Matrix: Solid
Percent Solids: 90.7

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	48.7		1.3	0.26	mg/Kg	☼	06/30/14 10:54	07/01/14 13:50	1
Chromium	61.0		0.87	0.17	mg/Kg	☼	06/30/14 10:54	07/01/14 13:50	1

Method: 6010C - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0060	J B	0.50	0.0032	mg/L		07/02/14 10:52	07/03/14 14:38	1
Chromium	0.25	J B	0.50	0.0022	mg/L		07/02/14 10:52	07/03/14 14:38	1

Client: Sterling Environmental Engineering PC
Project/Site: NE Treater Project

TestAmerica Job ID: 480-62517-1

Client Sample ID: C-3C
Date Collected: 06/24/14 15:30
Date Received: 06/26/14 01:30

Lab Sample ID: 480-62701-9
Matrix: Solid
Percent Solids: 91.4

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	88.5		1.6	0.31	mg/Kg	☼	06/30/14 10:54	07/01/14 13:54	1
Chromium	96.0		1.0	0.21	mg/Kg	☼	06/30/14 10:54	07/01/14 13:54	1

Method: 6010C - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.013	J B	0.50	0.0032	mg/L		07/02/14 10:52	07/03/14 14:50	1
Chromium	0.88	B	0.50	0.0022	mg/L		07/02/14 10:52	07/03/14 14:50	1

Client Sample ID: C-4A
Date Collected: 06/25/14 14:30
Date Received: 06/26/14 01:30

Lab Sample ID: 480-62701-10
Matrix: Solid
Percent Solids: 92.9

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	8.5		1.4	0.29	mg/Kg	☼	06/30/14 10:54	07/01/14 13:58	1
Chromium	299		0.95	0.19	mg/Kg	☼	06/30/14 10:54	07/01/14 13:58	1

Method: 6010C - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0063	J B	0.50	0.0032	mg/L		07/02/14 10:52	07/03/14 14:54	1
Chromium	6.9	B	0.50	0.0022	mg/L		07/02/14 10:52	07/03/14 14:54	1

Client Sample ID: C-4B
Date Collected: 06/24/14 16:00
Date Received: 06/26/14 01:30

Lab Sample ID: 480-62701-11
Matrix: Solid
Percent Solids: 91.9

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	198		1.3	0.26	mg/Kg	☼	06/30/14 10:54	07/01/14 14:02	1
Chromium	111		0.86	0.17	mg/Kg	☼	06/30/14 10:54	07/01/14 14:02	1

Method: 6010C - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.013	J B	0.50	0.0032	mg/L		07/02/14 10:52	07/03/14 14:59	1
Chromium	0.073	J B	0.50	0.0022	mg/L		07/02/14 10:52	07/03/14 14:59	1

Client Sample ID: C-4C
Date Collected: 06/24/14 16:30
Date Received: 06/26/14 01:30

Lab Sample ID: 480-62701-12
Matrix: Solid
Percent Solids: 91.9

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	448		1.4	0.29	mg/Kg	☼	06/30/14 10:54	07/01/14 14:06	1
Chromium	237		0.96	0.19	mg/Kg	☼	06/30/14 10:54	07/01/14 14:06	1

Method: 6010C - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.037	J B	0.50	0.0032	mg/L		07/02/14 10:52	07/03/14 15:03	1
Chromium	0.12	J B	0.50	0.0022	mg/L		07/02/14 10:52	07/03/14 15:03	1

Client: Sterling Environmental Engineering PC
Project/Site: NE Treater Project

TestAmerica Job ID: 480-62517-1

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 240-136335/1-A
Matrix: Solid
Analysis Batch: 136770

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 136335

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		1.5	0.30	mg/Kg		06/26/14 13:15	06/30/14 12:13	1
Chromium	ND		1.0	0.20	mg/Kg		06/26/14 13:15	06/30/14 12:13	1

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Lab Sample ID: LCS 240-136335/2-A
Matrix: Solid
Analysis Batch: 136770

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 136335

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	200	201.6		mg/Kg		101	80 - 120
Chromium	20.0	20.19		mg/Kg		101	80 - 120

Lab Sample ID: 480-62517-1 MS
Matrix: Solid
Analysis Batch: 136770

Client Sample ID: S-1A
Prep Type: Total/NA
Prep Batch: 136335

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chromium	1060		19.7	1073	4	mg/Kg	☼	47	75 - 125

Lab Sample ID: 480-62517-1 MS
Matrix: Solid
Analysis Batch: 136770

Client Sample ID: S-1A
Prep Type: Total/NA
Prep Batch: 136335

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	1430		197	1770	4	mg/Kg	☼	175	75 - 125

Lab Sample ID: 480-62517-1 MSD
Matrix: Solid
Analysis Batch: 136770

Client Sample ID: S-1A
Prep Type: Total/NA
Prep Batch: 136335

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chromium	1060		19.7	1005	4	mg/Kg	☼	-297	75 - 125	7	20

Lab Sample ID: 480-62517-1 MSD
Matrix: Solid
Analysis Batch: 136770

Client Sample ID: S-1A
Prep Type: Total/NA
Prep Batch: 136335

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	1430		197	1521	4	mg/Kg	☼	48	75 - 125	15	20

Lab Sample ID: MB 240-136675/1-A
Matrix: Solid
Analysis Batch: 136858

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 136675

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		1.5	0.30	mg/Kg		06/30/14 10:54	07/01/14 12:14	1
Chromium	ND		1.0	0.20	mg/Kg		06/30/14 10:54	07/01/14 12:14	1

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

Lab Sample ID: LCS 240-136675/2-A
Matrix: Solid
Analysis Batch: 136858

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 136675

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	200	183.9		mg/Kg		92	80 - 120
Chromium	20.0	17.84		mg/Kg		89	80 - 120

Lab Sample ID: MB 240-136849/2-A
Matrix: Solid
Analysis Batch: 137045

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 136849

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.50	0.0032	mg/L		07/01/14 11:11	07/02/14 15:51	1
Chromium	0.00436	J	0.50	0.0022	mg/L		07/01/14 11:11	07/02/14 15:51	1

Lab Sample ID: LCS 240-136849/3-A
Matrix: Solid
Analysis Batch: 137045

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 136849

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	2.00	2.11		mg/L		106	50 - 150
Chromium	0.200	0.199	J	mg/L		100	50 - 150

Lab Sample ID: MB 240-136852/2-A
Matrix: Solid
Analysis Batch: 137045

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 136852

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.50	0.0032	mg/L		07/01/14 11:18	07/02/14 16:57	1
Chromium	0.00456	J	0.50	0.0022	mg/L		07/01/14 11:18	07/02/14 16:57	1

Lab Sample ID: LCS 240-136852/3-A
Matrix: Solid
Analysis Batch: 137045

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 136852

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	2.00	2.15		mg/L		107	50 - 150
Chromium	0.200	0.198	J	mg/L		99	50 - 150

Lab Sample ID: MB 240-137020/2-A
Matrix: Solid
Analysis Batch: 137227

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 137020

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.50	0.0032	mg/L		07/02/14 10:35	07/03/14 15:47	1
Chromium	0.00550	J	0.50	0.0022	mg/L		07/02/14 10:35	07/03/14 15:47	1

Lab Sample ID: LCS 240-137020/3-A
Matrix: Solid
Analysis Batch: 137227

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 137020

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	2.00	2.21		mg/L		111	50 - 150

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

Lab Sample ID: LCS 240-137020/3-A
Matrix: Solid
Analysis Batch: 137227

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 137020

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chromium	0.200	0.203	J	mg/L		101	50 - 150

Lab Sample ID: MB 240-137029/2-A
Matrix: Solid
Analysis Batch: 137227

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 137029

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.50	0.0032	mg/L		07/02/14 10:52	07/03/14 12:51	1
Chromium	0.00475	J	0.50	0.0022	mg/L		07/02/14 10:52	07/03/14 12:51	1

Lab Sample ID: LCS 240-137029/3-A
Matrix: Solid
Analysis Batch: 137227

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 137029

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	2.00	2.32		mg/L		116	50 - 150
Chromium	0.200	0.214	J	mg/L		107	50 - 150

Lab Sample ID: LB 240-136749/1-B
Matrix: Solid
Analysis Batch: 137045

Client Sample ID: Method Blank
Prep Type: TCLP
Prep Batch: 136849

Analyte	LB Result	LB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00369	J	0.50	0.0032	mg/L		07/01/14 11:11	07/02/14 15:47	1
Chromium	0.00627	J	0.50	0.0022	mg/L		07/01/14 11:11	07/02/14 15:47	1

Lab Sample ID: 480-62517-3 MS
Matrix: Solid
Analysis Batch: 137045

Client Sample ID: S-1C
Prep Type: TCLP
Prep Batch: 136849

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	0.0077	J B	5.00	5.15		mg/L		103	50 - 150
Chromium	0.0084	J B	5.00	4.75		mg/L		95	50 - 150

Lab Sample ID: 480-62517-3 MSD
Matrix: Solid
Analysis Batch: 137045

Client Sample ID: S-1C
Prep Type: TCLP
Prep Batch: 136849

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	0.0077	J B	5.00	5.21		mg/L		104	50 - 150	1	20
Chromium	0.0084	J B	5.00	4.84		mg/L		97	50 - 150	2	20

Lab Sample ID: LB 240-136748/1-B
Matrix: Solid
Analysis Batch: 137045

Client Sample ID: Method Blank
Prep Type: TCLP
Prep Batch: 136852

Analyte	LB Result	LB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00500	J	0.50	0.0032	mg/L		07/01/14 11:18	07/02/14 16:53	1
Chromium	0.00652	J	0.50	0.0022	mg/L		07/01/14 11:18	07/02/14 16:53	1

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

Lab Sample ID: LB 240-136920/1-C
Matrix: Solid
Analysis Batch: 137227

Client Sample ID: Method Blank
Prep Type: TCLP
Prep Batch: 137020

Analyte	LB Result	LB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.50	0.0032	mg/L		07/02/14 10:35	07/03/14 15:43	1
Chromium	0.00493	J	0.50	0.0022	mg/L		07/02/14 10:35	07/03/14 15:43	1

Lab Sample ID: LB 240-136921/1-B
Matrix: Solid
Analysis Batch: 137227

Client Sample ID: Method Blank
Prep Type: TCLP
Prep Batch: 137029

Analyte	LB Result	LB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00461	J	0.50	0.0032	mg/L		07/02/14 10:52	07/03/14 12:47	1
Chromium	0.00735	J	0.50	0.0022	mg/L		07/02/14 10:52	07/03/14 12:47	1

Metals

Prep Batch: 136335

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-62517-1	S-1A	Total/NA	Solid	3050B	
480-62517-1 MS	S-1A	Total/NA	Solid	3050B	
480-62517-1 MSD	S-1A	Total/NA	Solid	3050B	
480-62517-2	S-1B	Total/NA	Solid	3050B	
480-62517-3	S-1C	Total/NA	Solid	3050B	
480-62517-4	S-1D	Total/NA	Solid	3050B	
480-62517-5	S-1E	Total/NA	Solid	3050B	
480-62517-6	S-2A	Total/NA	Solid	3050B	
480-62517-7	S-2B	Total/NA	Solid	3050B	
480-62517-8	S-2C	Total/NA	Solid	3050B	
480-62517-9	S-2D	Total/NA	Solid	3050B	
480-62517-10	S-2E	Total/NA	Solid	3050B	
480-62517-11	S-3A	Total/NA	Solid	3050B	
480-62517-12	S-3B	Total/NA	Solid	3050B	
480-62517-13	S-3C	Total/NA	Solid	3050B	
480-62517-14	S-3D	Total/NA	Solid	3050B	
480-62517-15	S-3E	Total/NA	Solid	3050B	
480-62517-16	S-4A	Total/NA	Solid	3050B	
480-62517-17	S-4B	Total/NA	Solid	3050B	
480-62517-18	S-4C	Total/NA	Solid	3050B	
480-62517-19	S-4D	Total/NA	Solid	3050B	
480-62517-20	S-4E	Total/NA	Solid	3050B	
LCS 240-136335/2-A	Lab Control Sample	Total/NA	Solid	3050B	
MB 240-136335/1-A	Method Blank	Total/NA	Solid	3050B	

Prep Batch: 136675

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-62701-1	C-1A	Total/NA	Solid	3050B	
480-62701-2	C-1B	Total/NA	Solid	3050B	
480-62701-3	C-1C	Total/NA	Solid	3050B	
480-62701-4	C-2A	Total/NA	Solid	3050B	
480-62701-5	C-2B	Total/NA	Solid	3050B	
480-62701-6	C-2C	Total/NA	Solid	3050B	
480-62701-7	C-3A	Total/NA	Solid	3050B	
480-62701-8	C-3B	Total/NA	Solid	3050B	
480-62701-9	C-3C	Total/NA	Solid	3050B	
480-62701-10	C-4A	Total/NA	Solid	3050B	
480-62701-11	C-4B	Total/NA	Solid	3050B	
480-62701-12	C-4C	Total/NA	Solid	3050B	
LCS 240-136675/2-A	Lab Control Sample	Total/NA	Solid	3050B	
MB 240-136675/1-A	Method Blank	Total/NA	Solid	3050B	

Leach Batch: 136748

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-62517-1	S-1A	TCLP	Solid	1311	
480-62517-2	S-1B	TCLP	Solid	1311	
480-62517-4	S-1D	TCLP	Solid	1311	
480-62517-5	S-1E	TCLP	Solid	1311	
480-62517-6	S-2A	TCLP	Solid	1311	
480-62517-10	S-2E	TCLP	Solid	1311	
480-62517-11	S-3A	TCLP	Solid	1311	

Metals (Continued)

Leach Batch: 136748 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-62517-12	S-3B	TCLP	Solid	1311	
480-62517-13	S-3C	TCLP	Solid	1311	
480-62517-16	S-4A	TCLP	Solid	1311	
480-62517-17	S-4B	TCLP	Solid	1311	
480-62517-18	S-4C	TCLP	Solid	1311	
480-62517-19	S-4D	TCLP	Solid	1311	
480-62517-20	S-4E	TCLP	Solid	1311	
LB 240-136748/1-B	Method Blank	TCLP	Solid	1311	

Leach Batch: 136749

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-62517-3	S-1C	TCLP	Solid	1311	
480-62517-3 MS	S-1C	TCLP	Solid	1311	
480-62517-3 MSD	S-1C	TCLP	Solid	1311	
480-62517-7	S-2B	TCLP	Solid	1311	
480-62517-8	S-2C	TCLP	Solid	1311	
480-62517-9	S-2D	TCLP	Solid	1311	
480-62517-14	S-3D	TCLP	Solid	1311	
480-62517-15	S-3E	TCLP	Solid	1311	
LB 240-136749/1-B	Method Blank	TCLP	Solid	1311	

Analysis Batch: 136770

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-62517-1	S-1A	Total/NA	Solid	6010C	136335
480-62517-1	S-1A	Total/NA	Solid	6010C	136335
480-62517-1 MS	S-1A	Total/NA	Solid	6010C	136335
480-62517-1 MS	S-1A	Total/NA	Solid	6010C	136335
480-62517-1 MSD	S-1A	Total/NA	Solid	6010C	136335
480-62517-1 MSD	S-1A	Total/NA	Solid	6010C	136335
480-62517-2	S-1B	Total/NA	Solid	6010C	136335
480-62517-3	S-1C	Total/NA	Solid	6010C	136335
480-62517-4	S-1D	Total/NA	Solid	6010C	136335
480-62517-5	S-1E	Total/NA	Solid	6010C	136335
480-62517-6	S-2A	Total/NA	Solid	6010C	136335
480-62517-7	S-2B	Total/NA	Solid	6010C	136335
480-62517-8	S-2C	Total/NA	Solid	6010C	136335
480-62517-9	S-2D	Total/NA	Solid	6010C	136335
480-62517-10	S-2E	Total/NA	Solid	6010C	136335
480-62517-11	S-3A	Total/NA	Solid	6010C	136335
480-62517-12	S-3B	Total/NA	Solid	6010C	136335
480-62517-13	S-3C	Total/NA	Solid	6010C	136335
480-62517-14	S-3D	Total/NA	Solid	6010C	136335
480-62517-15	S-3E	Total/NA	Solid	6010C	136335
480-62517-16	S-4A	Total/NA	Solid	6010C	136335
480-62517-17	S-4B	Total/NA	Solid	6010C	136335
480-62517-18	S-4C	Total/NA	Solid	6010C	136335
480-62517-19	S-4D	Total/NA	Solid	6010C	136335
480-62517-20	S-4E	Total/NA	Solid	6010C	136335
LCS 240-136335/2-A	Lab Control Sample	Total/NA	Solid	6010C	136335
MB 240-136335/1-A	Method Blank	Total/NA	Solid	6010C	136335

Metals (Continued)

Prep Batch: 136849

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-62517-3	S-1C	TCLP	Solid	3010A	136749
480-62517-3 MS	S-1C	TCLP	Solid	3010A	136749
480-62517-3 MSD	S-1C	TCLP	Solid	3010A	136749
480-62517-7	S-2B	TCLP	Solid	3010A	136749
480-62517-8	S-2C	TCLP	Solid	3010A	136749
480-62517-9	S-2D	TCLP	Solid	3010A	136749
480-62517-14	S-3D	TCLP	Solid	3010A	136749
480-62517-15	S-3E	TCLP	Solid	3010A	136749
LB 240-136749/1-B	Method Blank	TCLP	Solid	3010A	136749
LCS 240-136849/3-A	Lab Control Sample	Total/NA	Solid	3010A	
MB 240-136849/2-A	Method Blank	Total/NA	Solid	3010A	

Prep Batch: 136852

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-62517-1	S-1A	TCLP	Solid	3010A	136748
480-62517-2	S-1B	TCLP	Solid	3010A	136748
480-62517-4	S-1D	TCLP	Solid	3010A	136748
480-62517-5	S-1E	TCLP	Solid	3010A	136748
480-62517-6	S-2A	TCLP	Solid	3010A	136748
480-62517-10	S-2E	TCLP	Solid	3010A	136748
480-62517-11	S-3A	TCLP	Solid	3010A	136748
480-62517-12	S-3B	TCLP	Solid	3010A	136748
480-62517-13	S-3C	TCLP	Solid	3010A	136748
480-62517-16	S-4A	TCLP	Solid	3010A	136748
480-62517-17	S-4B	TCLP	Solid	3010A	136748
480-62517-18	S-4C	TCLP	Solid	3010A	136748
480-62517-19	S-4D	TCLP	Solid	3010A	136748
480-62517-20	S-4E	TCLP	Solid	3010A	136748
LB 240-136748/1-B	Method Blank	TCLP	Solid	3010A	136748
LCS 240-136852/3-A	Lab Control Sample	Total/NA	Solid	3010A	
MB 240-136852/2-A	Method Blank	Total/NA	Solid	3010A	

Analysis Batch: 136858

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-62701-1	C-1A	Total/NA	Solid	6010C	136675
480-62701-2	C-1B	Total/NA	Solid	6010C	136675
480-62701-2	C-1B	Total/NA	Solid	6010C	136675
480-62701-3	C-1C	Total/NA	Solid	6010C	136675
480-62701-3	C-1C	Total/NA	Solid	6010C	136675
480-62701-4	C-2A	Total/NA	Solid	6010C	136675
480-62701-5	C-2B	Total/NA	Solid	6010C	136675
480-62701-6	C-2C	Total/NA	Solid	6010C	136675
480-62701-7	C-3A	Total/NA	Solid	6010C	136675
480-62701-8	C-3B	Total/NA	Solid	6010C	136675
480-62701-9	C-3C	Total/NA	Solid	6010C	136675
480-62701-10	C-4A	Total/NA	Solid	6010C	136675
480-62701-11	C-4B	Total/NA	Solid	6010C	136675
480-62701-12	C-4C	Total/NA	Solid	6010C	136675
LCS 240-136675/2-A	Lab Control Sample	Total/NA	Solid	6010C	136675
MB 240-136675/1-A	Method Blank	Total/NA	Solid	6010C	136675

Metals (Continued)

Leach Batch: 136920

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-62701-6	C-2C	TCLP	Solid	1311	
LB 240-136920/1-C	Method Blank	TCLP	Solid	1311	

Leach Batch: 136921

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-62701-1	C-1A	TCLP	Solid	1311	
480-62701-2	C-1B	TCLP	Solid	1311	
480-62701-3	C-1C	TCLP	Solid	1311	
480-62701-4	C-2A	TCLP	Solid	1311	
480-62701-5	C-2B	TCLP	Solid	1311	
480-62701-7	C-3A	TCLP	Solid	1311	
480-62701-8	C-3B	TCLP	Solid	1311	
480-62701-9	C-3C	TCLP	Solid	1311	
480-62701-10	C-4A	TCLP	Solid	1311	
480-62701-11	C-4B	TCLP	Solid	1311	
480-62701-12	C-4C	TCLP	Solid	1311	
LB 240-136921/1-B	Method Blank	TCLP	Solid	1311	

Prep Batch: 137020

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-62701-6	C-2C	TCLP	Solid	3010A	136920
LB 240-136920/1-C	Method Blank	TCLP	Solid	3010A	136920
LCS 240-137020/3-A	Lab Control Sample	Total/NA	Solid	3010A	
MB 240-137020/2-A	Method Blank	Total/NA	Solid	3010A	

Prep Batch: 137029

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-62701-1	C-1A	TCLP	Solid	3010A	136921
480-62701-2	C-1B	TCLP	Solid	3010A	136921
480-62701-3	C-1C	TCLP	Solid	3010A	136921
480-62701-4	C-2A	TCLP	Solid	3010A	136921
480-62701-5	C-2B	TCLP	Solid	3010A	136921
480-62701-7	C-3A	TCLP	Solid	3010A	136921
480-62701-8	C-3B	TCLP	Solid	3010A	136921
480-62701-9	C-3C	TCLP	Solid	3010A	136921
480-62701-10	C-4A	TCLP	Solid	3010A	136921
480-62701-11	C-4B	TCLP	Solid	3010A	136921
480-62701-12	C-4C	TCLP	Solid	3010A	136921
LB 240-136921/1-B	Method Blank	TCLP	Solid	3010A	136921
LCS 240-137029/3-A	Lab Control Sample	Total/NA	Solid	3010A	
MB 240-137029/2-A	Method Blank	Total/NA	Solid	3010A	

Analysis Batch: 137045

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-62517-1	S-1A	TCLP	Solid	6010C	136852
480-62517-2	S-1B	TCLP	Solid	6010C	136852
480-62517-3	S-1C	TCLP	Solid	6010C	136849
480-62517-3 MS	S-1C	TCLP	Solid	6010C	136849
480-62517-3 MSD	S-1C	TCLP	Solid	6010C	136849
480-62517-4	S-1D	TCLP	Solid	6010C	136852
480-62517-5	S-1E	TCLP	Solid	6010C	136852

Metals (Continued)

Analysis Batch: 137045 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-62517-6	S-2A	TCLP	Solid	6010C	136852
480-62517-7	S-2B	TCLP	Solid	6010C	136849
480-62517-8	S-2C	TCLP	Solid	6010C	136849
480-62517-9	S-2D	TCLP	Solid	6010C	136849
480-62517-10	S-2E	TCLP	Solid	6010C	136852
480-62517-11	S-3A	TCLP	Solid	6010C	136852
480-62517-12	S-3B	TCLP	Solid	6010C	136852
480-62517-13	S-3C	TCLP	Solid	6010C	136852
480-62517-14	S-3D	TCLP	Solid	6010C	136849
480-62517-15	S-3E	TCLP	Solid	6010C	136849
480-62517-16	S-4A	TCLP	Solid	6010C	136852
480-62517-17	S-4B	TCLP	Solid	6010C	136852
480-62517-18	S-4C	TCLP	Solid	6010C	136852
480-62517-19	S-4D	TCLP	Solid	6010C	136852
480-62517-20	S-4E	TCLP	Solid	6010C	136852
LB 240-136748/1-B	Method Blank	TCLP	Solid	6010C	136852
LB 240-136749/1-B	Method Blank	TCLP	Solid	6010C	136849
LCS 240-136849/3-A	Lab Control Sample	Total/NA	Solid	6010C	136849
LCS 240-136852/3-A	Lab Control Sample	Total/NA	Solid	6010C	136852
MB 240-136849/2-A	Method Blank	Total/NA	Solid	6010C	136849
MB 240-136852/2-A	Method Blank	Total/NA	Solid	6010C	136852

Analysis Batch: 137227

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-62701-1	C-1A	TCLP	Solid	6010C	137029
480-62701-2	C-1B	TCLP	Solid	6010C	137029
480-62701-3	C-1C	TCLP	Solid	6010C	137029
480-62701-4	C-2A	TCLP	Solid	6010C	137029
480-62701-5	C-2B	TCLP	Solid	6010C	137029
480-62701-6	C-2C	TCLP	Solid	6010C	137020
480-62701-7	C-3A	TCLP	Solid	6010C	137029
480-62701-8	C-3B	TCLP	Solid	6010C	137029
480-62701-9	C-3C	TCLP	Solid	6010C	137029
480-62701-10	C-4A	TCLP	Solid	6010C	137029
480-62701-11	C-4B	TCLP	Solid	6010C	137029
480-62701-12	C-4C	TCLP	Solid	6010C	137029
LB 240-136920/1-C	Method Blank	TCLP	Solid	6010C	137020
LB 240-136921/1-B	Method Blank	TCLP	Solid	6010C	137029
LCS 240-137020/3-A	Lab Control Sample	Total/NA	Solid	6010C	137020
LCS 240-137029/3-A	Lab Control Sample	Total/NA	Solid	6010C	137029
MB 240-137020/2-A	Method Blank	Total/NA	Solid	6010C	137020
MB 240-137029/2-A	Method Blank	Total/NA	Solid	6010C	137029

General Chemistry

Analysis Batch: 136308

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-62517-1	S-1A	Total/NA	Solid	Moisture	
480-62517-1 DU	S-1A	Total/NA	Solid	Moisture	
480-62517-2	S-1B	Total/NA	Solid	Moisture	

General Chemistry (Continued)

Analysis Batch: 136308 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-62517-3	S-1C	Total/NA	Solid	Moisture	
480-62517-4	S-1D	Total/NA	Solid	Moisture	
480-62517-5	S-1E	Total/NA	Solid	Moisture	
480-62517-6	S-2A	Total/NA	Solid	Moisture	
480-62517-7	S-2B	Total/NA	Solid	Moisture	
480-62517-8	S-2C	Total/NA	Solid	Moisture	
480-62517-9	S-2D	Total/NA	Solid	Moisture	
480-62517-10	S-2E	Total/NA	Solid	Moisture	
480-62517-11	S-3A	Total/NA	Solid	Moisture	
480-62517-11 DU	S-3A	Total/NA	Solid	Moisture	
480-62517-12	S-3B	Total/NA	Solid	Moisture	
480-62517-13	S-3C	Total/NA	Solid	Moisture	
480-62517-14	S-3D	Total/NA	Solid	Moisture	
480-62517-15	S-3E	Total/NA	Solid	Moisture	
480-62517-16	S-4A	Total/NA	Solid	Moisture	
480-62517-17	S-4B	Total/NA	Solid	Moisture	
480-62517-18	S-4C	Total/NA	Solid	Moisture	
480-62517-19	S-4D	Total/NA	Solid	Moisture	
480-62517-20	S-4E	Total/NA	Solid	Moisture	

Analysis Batch: 137041

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-62701-1	C-1A	Total/NA	Solid	Moisture	
480-62701-2	C-1B	Total/NA	Solid	Moisture	
480-62701-3	C-1C	Total/NA	Solid	Moisture	
480-62701-4	C-2A	Total/NA	Solid	Moisture	
480-62701-5	C-2B	Total/NA	Solid	Moisture	
480-62701-6	C-2C	Total/NA	Solid	Moisture	
480-62701-6 DU	C-2C	Total/NA	Solid	Moisture	
480-62701-7	C-3A	Total/NA	Solid	Moisture	
480-62701-8	C-3B	Total/NA	Solid	Moisture	
480-62701-9	C-3C	Total/NA	Solid	Moisture	
480-62701-10	C-4A	Total/NA	Solid	Moisture	
480-62701-11	C-4B	Total/NA	Solid	Moisture	
480-62701-12	C-4C	Total/NA	Solid	Moisture	

Lab Chronicle

Client: Sterling Environmental Engineering PC
Project/Site: NE Treater Project

TestAmerica Job ID: 480-62517-1

Client Sample ID: S-1A

Lab Sample ID: 480-62517-1
Matrix: Solid

Date Collected: 06/23/14 09:30
Date Received: 06/24/14 01:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
TCLP	Leach	1311			136748	06/30/14 17:50	SMH	TAL CAN
TCLP	Prep	3010A			136852	07/01/14 11:18	ADS	TAL CAN
TCLP	Analysis	6010C		1	137045	07/02/14 17:05	RKT	TAL CAN
Total/NA	Prep	3050B			136335	06/26/14 13:15	DEE	TAL CAN
Total/NA	Analysis	6010C		1	136770	06/30/14 12:29	RKT	TAL CAN
Total/NA	Prep	3050B			136335	06/26/14 13:15	DEE	TAL CAN
Total/NA	Analysis	6010C		5	136770	06/30/14 14:21	RKT	TAL CAN
Total/NA	Analysis	Moisture		1	136308	06/26/14 11:00	BLW	TAL CAN

Client Sample ID: S-1B

Lab Sample ID: 480-62517-2
Matrix: Solid

Date Collected: 06/23/14 09:35
Date Received: 06/24/14 01:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
TCLP	Leach	1311			136748	06/30/14 17:50	SMH	TAL CAN
TCLP	Prep	3010A			136852	07/01/14 11:18	ADS	TAL CAN
TCLP	Analysis	6010C		1	137045	07/02/14 17:09	RKT	TAL CAN
Total/NA	Prep	3050B			136335	06/26/14 13:15	DEE	TAL CAN
Total/NA	Analysis	6010C		1	136770	06/30/14 12:49	RKT	TAL CAN
Total/NA	Analysis	Moisture		1	136308	06/26/14 11:00	BLW	TAL CAN

Client Sample ID: S-1C

Lab Sample ID: 480-62517-3
Matrix: Solid

Date Collected: 06/23/14 09:40
Date Received: 06/24/14 01:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
TCLP	Leach	1311			136749	06/30/14 17:50	SMH	TAL CAN
TCLP	Prep	3010A			136849	07/01/14 11:11	ADS	TAL CAN
TCLP	Analysis	6010C		1	137045	07/02/14 15:59	RKT	TAL CAN
Total/NA	Prep	3050B			136335	06/26/14 13:15	DEE	TAL CAN
Total/NA	Analysis	6010C		1	136770	06/30/14 12:53	RKT	TAL CAN
Total/NA	Analysis	Moisture		1	136308	06/26/14 11:00	BLW	TAL CAN

Client Sample ID: S-1D

Lab Sample ID: 480-62517-4
Matrix: Solid

Date Collected: 06/23/14 09:45
Date Received: 06/24/14 01:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
TCLP	Leach	1311			136748	06/30/14 17:50	SMH	TAL CAN
TCLP	Prep	3010A			136852	07/01/14 11:18	ADS	TAL CAN
TCLP	Analysis	6010C		1	137045	07/02/14 17:21	RKT	TAL CAN
Total/NA	Prep	3050B			136335	06/26/14 13:15	DEE	TAL CAN
Total/NA	Analysis	6010C		1	136770	06/30/14 12:57	RKT	TAL CAN

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Client Sample ID: S-1D
Date Collected: 06/23/14 09:45
Date Received: 06/24/14 01:00

Lab Sample ID: 480-62517-4
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	136308	06/26/14 11:00	BLW	TAL CAN

Client Sample ID: S-1E
Date Collected: 06/23/14 09:50
Date Received: 06/24/14 01:00

Lab Sample ID: 480-62517-5
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
TCLP	Leach	1311			136748	06/30/14 17:50	SMH	TAL CAN
TCLP	Prep	3010A			136852	07/01/14 11:18	ADS	TAL CAN
TCLP	Analysis	6010C		1	137045	07/02/14 17:25	RKT	TAL CAN
Total/NA	Prep	3050B			136335	06/26/14 13:15	DEE	TAL CAN
Total/NA	Analysis	6010C		1	136770	06/30/14 13:01	RKT	TAL CAN
Total/NA	Analysis	Moisture		1	136308	06/26/14 11:00	BLW	TAL CAN

Client Sample ID: S-2A
Date Collected: 06/23/14 10:30
Date Received: 06/24/14 01:00

Lab Sample ID: 480-62517-6
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
TCLP	Leach	1311			136748	06/30/14 17:50	SMH	TAL CAN
TCLP	Prep	3010A			136852	07/01/14 11:18	ADS	TAL CAN
TCLP	Analysis	6010C		1	137045	07/02/14 17:30	RKT	TAL CAN
Total/NA	Prep	3050B			136335	06/26/14 13:15	DEE	TAL CAN
Total/NA	Analysis	6010C		1	136770	06/30/14 13:13	RKT	TAL CAN
Total/NA	Analysis	Moisture		1	136308	06/26/14 11:00	BLW	TAL CAN

Client Sample ID: S-2B
Date Collected: 06/23/14 10:35
Date Received: 06/24/14 01:00

Lab Sample ID: 480-62517-7
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
TCLP	Leach	1311			136749	06/30/14 17:50	SMH	TAL CAN
TCLP	Prep	3010A			136849	07/01/14 11:12	ADS	TAL CAN
TCLP	Analysis	6010C		1	137045	07/02/14 16:20	RKT	TAL CAN
Total/NA	Prep	3050B			136335	06/26/14 13:15	DEE	TAL CAN
Total/NA	Analysis	6010C		1	136770	06/30/14 13:17	RKT	TAL CAN
Total/NA	Analysis	Moisture		1	136308	06/26/14 11:00	BLW	TAL CAN

Client Sample ID: S-2C
Date Collected: 06/23/14 10:40
Date Received: 06/24/14 01:00

Lab Sample ID: 480-62517-8
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
TCLP	Leach	1311			136749	06/30/14 17:50	SMH	TAL CAN
TCLP	Prep	3010A			136849	07/01/14 11:12	ADS	TAL CAN
TCLP	Analysis	6010C		1	137045	07/02/14 16:32	RKT	TAL CAN
Total/NA	Prep	3050B			136335	06/26/14 13:15	DEE	TAL CAN
Total/NA	Analysis	6010C		1	136770	06/30/14 13:21	RKT	TAL CAN
Total/NA	Analysis	Moisture		1	136308	06/26/14 11:00	BLW	TAL CAN

Client Sample ID: S-2D
Date Collected: 06/23/14 10:45
Date Received: 06/24/14 01:00

Lab Sample ID: 480-62517-9
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
TCLP	Leach	1311			136749	06/30/14 17:50	SMH	TAL CAN
TCLP	Prep	3010A			136849	07/01/14 11:12	ADS	TAL CAN
TCLP	Analysis	6010C		1	137045	07/02/14 16:36	RKT	TAL CAN
Total/NA	Prep	3050B			136335	06/26/14 13:15	DEE	TAL CAN
Total/NA	Analysis	6010C		1	136770	06/30/14 13:25	RKT	TAL CAN
Total/NA	Analysis	Moisture		1	136308	06/26/14 11:00	BLW	TAL CAN

Client Sample ID: S-2E
Date Collected: 06/23/14 10:50
Date Received: 06/24/14 01:00

Lab Sample ID: 480-62517-10
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
TCLP	Leach	1311			136748	06/30/14 17:50	SMH	TAL CAN
TCLP	Prep	3010A			136852	07/01/14 11:18	ADS	TAL CAN
TCLP	Analysis	6010C		1	137045	07/02/14 17:34	RKT	TAL CAN
Total/NA	Prep	3050B			136335	06/26/14 13:15	DEE	TAL CAN
Total/NA	Analysis	6010C		1	136770	06/30/14 13:29	RKT	TAL CAN
Total/NA	Analysis	Moisture		1	136308	06/26/14 11:00	BLW	TAL CAN

Client Sample ID: S-3A
Date Collected: 06/23/14 11:30
Date Received: 06/24/14 01:00

Lab Sample ID: 480-62517-11
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
TCLP	Leach	1311			136748	06/30/14 17:50	SMH	TAL CAN
TCLP	Prep	3010A			136852	07/01/14 11:18	ADS	TAL CAN
TCLP	Analysis	6010C		1	137045	07/02/14 17:38	RKT	TAL CAN
Total/NA	Prep	3050B			136335	06/26/14 13:15	DEE	TAL CAN
Total/NA	Analysis	6010C		1	136770	06/30/14 13:33	RKT	TAL CAN
Total/NA	Analysis	Moisture		1	136308	06/26/14 11:00	BLW	TAL CAN

Client Sample ID: S-3B
Date Collected: 06/23/14 11:35
Date Received: 06/24/14 01:00

Lab Sample ID: 480-62517-12
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
TCLP	Leach	1311			136748	06/30/14 17:50	SMH	TAL CAN
TCLP	Prep	3010A			136852	07/01/14 11:18	ADS	TAL CAN
TCLP	Analysis	6010C		1	137045	07/02/14 17:47	RKT	TAL CAN
Total/NA	Prep	3050B			136335	06/26/14 13:15	DEE	TAL CAN
Total/NA	Analysis	6010C		1	136770	06/30/14 13:37	RKT	TAL CAN
Total/NA	Analysis	Moisture		1	136308	06/26/14 11:00	BLW	TAL CAN

Client Sample ID: S-3C
Date Collected: 06/23/14 11:40
Date Received: 06/24/14 01:00

Lab Sample ID: 480-62517-13
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
TCLP	Leach	1311			136748	06/30/14 17:50	SMH	TAL CAN
TCLP	Prep	3010A			136852	07/01/14 11:18	ADS	TAL CAN
TCLP	Analysis	6010C		1	137045	07/02/14 17:51	RKT	TAL CAN
Total/NA	Prep	3050B			136335	06/26/14 13:15	DEE	TAL CAN
Total/NA	Analysis	6010C		1	136770	06/30/14 13:41	RKT	TAL CAN
Total/NA	Analysis	Moisture		1	136308	06/26/14 11:00	BLW	TAL CAN

Client Sample ID: S-3D
Date Collected: 06/23/14 11:45
Date Received: 06/24/14 01:00

Lab Sample ID: 480-62517-14
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
TCLP	Leach	1311			136749	06/30/14 17:50	SMH	TAL CAN
TCLP	Prep	3010A			136849	07/01/14 11:12	ADS	TAL CAN
TCLP	Analysis	6010C		1	137045	07/02/14 16:40	RKT	TAL CAN
Total/NA	Prep	3050B			136335	06/26/14 13:15	DEE	TAL CAN
Total/NA	Analysis	6010C		1	136770	06/30/14 13:45	RKT	TAL CAN
Total/NA	Analysis	Moisture		1	136308	06/26/14 11:00	BLW	TAL CAN

Client Sample ID: S-3E
Date Collected: 06/23/14 11:50
Date Received: 06/24/14 01:00

Lab Sample ID: 480-62517-15
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
TCLP	Leach	1311			136749	06/30/14 17:50	SMH	TAL CAN
TCLP	Prep	3010A			136849	07/01/14 11:12	ADS	TAL CAN
TCLP	Analysis	6010C		1	137045	07/02/14 16:44	RKT	TAL CAN
Total/NA	Prep	3050B			136335	06/26/14 13:15	DEE	TAL CAN
Total/NA	Analysis	6010C		1	136770	06/30/14 13:50	RKT	TAL CAN
Total/NA	Analysis	Moisture		1	136308	06/26/14 11:00	BLW	TAL CAN

Client: Sterling Environmental Engineering PC
Project/Site: NE Treater Project

TestAmerica Job ID: 480-62517-1

Client Sample ID: S-4A
Date Collected: 06/23/14 12:15
Date Received: 06/24/14 01:00

Lab Sample ID: 480-62517-16
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
TCLP	Leach	1311			136748	06/30/14 17:50	SMH	TAL CAN
TCLP	Prep	3010A			136852	07/01/14 11:18	ADS	TAL CAN
TCLP	Analysis	6010C		1	137045	07/02/14 17:55	RKT	TAL CAN
Total/NA	Prep	3050B			136335	06/26/14 13:15	DEE	TAL CAN
Total/NA	Analysis	6010C		1	136770	06/30/14 14:01	RKT	TAL CAN
Total/NA	Analysis	Moisture		1	136308	06/26/14 11:00	BLW	TAL CAN

Client Sample ID: S-4B
Date Collected: 06/23/14 12:20
Date Received: 06/24/14 01:00

Lab Sample ID: 480-62517-17
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
TCLP	Leach	1311			136748	06/30/14 17:50	SMH	TAL CAN
TCLP	Prep	3010A			136852	07/01/14 11:18	ADS	TAL CAN
TCLP	Analysis	6010C		1	137045	07/02/14 17:43	RKT	TAL CAN
Total/NA	Prep	3050B			136335	06/26/14 13:15	DEE	TAL CAN
Total/NA	Analysis	6010C		1	136770	06/30/14 14:05	RKT	TAL CAN
Total/NA	Analysis	Moisture		1	136308	06/26/14 11:00	BLW	TAL CAN

Client Sample ID: S-4C
Date Collected: 06/23/14 12:25
Date Received: 06/24/14 01:00

Lab Sample ID: 480-62517-18
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
TCLP	Leach	1311			136748	06/30/14 17:50	SMH	TAL CAN
TCLP	Prep	3010A			136852	07/01/14 11:18	ADS	TAL CAN
TCLP	Analysis	6010C		1	137045	07/02/14 18:00	RKT	TAL CAN
Total/NA	Prep	3050B			136335	06/26/14 13:15	DEE	TAL CAN
Total/NA	Analysis	6010C		1	136770	06/30/14 14:09	RKT	TAL CAN
Total/NA	Analysis	Moisture		1	136308	06/26/14 11:00	BLW	TAL CAN

Client Sample ID: S-4D
Date Collected: 06/23/14 12:30
Date Received: 06/24/14 01:00

Lab Sample ID: 480-62517-19
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
TCLP	Leach	1311			136748	06/30/14 17:50	SMH	TAL CAN
TCLP	Prep	3010A			136852	07/01/14 11:18	ADS	TAL CAN
TCLP	Analysis	6010C		1	137045	07/02/14 18:12	RKT	TAL CAN
Total/NA	Prep	3050B			136335	06/26/14 13:15	DEE	TAL CAN
Total/NA	Analysis	6010C		1	136770	06/30/14 14:13	RKT	TAL CAN
Total/NA	Analysis	Moisture		1	136308	06/26/14 11:00	BLW	TAL CAN

Client Sample ID: S-4E
Date Collected: 06/23/14 12:35
Date Received: 06/24/14 01:00

Lab Sample ID: 480-62517-20
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
TCLP	Leach	1311			136748	06/30/14 17:50	SMH	TAL CAN
TCLP	Prep	3010A			136852	07/01/14 11:18	ADS	TAL CAN
TCLP	Analysis	6010C		1	137045	07/02/14 18:16	RKT	TAL CAN
Total/NA	Prep	3050B			136335	06/26/14 13:15	DEE	TAL CAN
Total/NA	Analysis	6010C		1	136770	06/30/14 14:17	RKT	TAL CAN
Total/NA	Analysis	Moisture		1	136308	06/26/14 11:00	BLW	TAL CAN

Client Sample ID: C-1A
Date Collected: 06/25/14 13:00
Date Received: 06/26/14 01:30

Lab Sample ID: 480-62701-1
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
TCLP	Leach	1311			136921	07/01/14 18:15	DRJ	TAL CAN
TCLP	Prep	3010A			137029	07/02/14 10:52	DEE	TAL CAN
TCLP	Analysis	6010C		1	137227	07/03/14 14:12	RKT	TAL CAN
Total/NA	Prep	3050B			136675	06/30/14 10:54	DEE	TAL CAN
Total/NA	Analysis	6010C		1	136858	07/01/14 13:13	RKT	TAL CAN
Total/NA	Analysis	Moisture		1	137041	07/02/14 11:42	AS	TAL CAN

Client Sample ID: C-1B
Date Collected: 06/24/14 13:00
Date Received: 06/26/14 01:30

Lab Sample ID: 480-62701-2
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
TCLP	Leach	1311			136921	07/01/14 18:15	DRJ	TAL CAN
TCLP	Prep	3010A			137029	07/02/14 10:52	DEE	TAL CAN
TCLP	Analysis	6010C		1	137227	07/03/14 14:16	RKT	TAL CAN
Total/NA	Prep	3050B			136675	06/30/14 10:54	DEE	TAL CAN
Total/NA	Analysis	6010C		1	136858	07/01/14 13:17	RKT	TAL CAN
Total/NA	Prep	3050B			136675	06/30/14 10:54	DEE	TAL CAN
Total/NA	Analysis	6010C		2	136858	07/01/14 15:03	RKT	TAL CAN
Total/NA	Analysis	Moisture		1	137041	07/02/14 11:42	AS	TAL CAN

Client Sample ID: C-1C
Date Collected: 06/24/14 13:30
Date Received: 06/26/14 01:30

Lab Sample ID: 480-62701-3
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
TCLP	Leach	1311			136921	07/01/14 18:15	DRJ	TAL CAN
TCLP	Prep	3010A			137029	07/02/14 10:52	DEE	TAL CAN
TCLP	Analysis	6010C		1	137227	07/03/14 14:20	RKT	TAL CAN
Total/NA	Prep	3050B			136675	06/30/14 10:54	DEE	TAL CAN
Total/NA	Analysis	6010C		1	136858	07/01/14 13:21	RKT	TAL CAN

Client Sample ID: C-1C

Lab Sample ID: 480-62701-3

Date Collected: 06/24/14 13:30
Matrix: Solid
Date Received: 06/26/14 01:30
Percent Solids: 92.9

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			136675	06/30/14 10:54	DEE	TAL CAN
Total/NA	Analysis	6010C		5	136858	07/01/14 15:07	RKT	TAL CAN
Total/NA	Analysis	Moisture		1	137041	07/02/14 11:42	AS	TAL CAN

Client Sample ID: C-2A

Lab Sample ID: 480-62701-4

Date Collected: 06/25/14 13:30
Matrix: Solid
Date Received: 06/26/14 01:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
TCLP	Leach	1311			136921	07/01/14 18:15	DRJ	TAL CAN
TCLP	Prep	3010A			137029	07/02/14 10:52	DEE	TAL CAN
TCLP	Analysis	6010C		1	137227	07/03/14 14:25	RKT	TAL CAN
Total/NA	Prep	3050B			136675	06/30/14 10:54	DEE	TAL CAN
Total/NA	Analysis	6010C		1	136858	07/01/14 13:25	RKT	TAL CAN
Total/NA	Analysis	Moisture		1	137041	07/02/14 11:42	AS	TAL CAN

Client Sample ID: C-2B

Lab Sample ID: 480-62701-5

Date Collected: 06/24/14 14:00
Matrix: Solid
Date Received: 06/26/14 01:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
TCLP	Leach	1311			136921	07/01/14 18:15	DRJ	TAL CAN
TCLP	Prep	3010A			137029	07/02/14 10:52	DEE	TAL CAN
TCLP	Analysis	6010C		1	137227	07/03/14 14:29	RKT	TAL CAN
Total/NA	Prep	3050B			136675	06/30/14 10:54	DEE	TAL CAN
Total/NA	Analysis	6010C		1	136858	07/01/14 13:30	RKT	TAL CAN
Total/NA	Analysis	Moisture		1	137041	07/02/14 11:42	AS	TAL CAN

Client Sample ID: C-2C

Lab Sample ID: 480-62701-6

Date Collected: 06/24/14 14:30
Matrix: Solid
Date Received: 06/26/14 01:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
TCLP	Leach	1311			136920	07/01/14 18:15	DRJ	TAL CAN
TCLP	Prep	3010A			137020	07/02/14 10:35	DEE	TAL CAN
TCLP	Analysis	6010C		1	137227	07/03/14 15:55	RKT	TAL CAN
Total/NA	Prep	3050B			136675	06/30/14 10:54	DEE	TAL CAN
Total/NA	Analysis	6010C		1	136858	07/01/14 13:34	RKT	TAL CAN
Total/NA	Analysis	Moisture		1	137041	07/02/14 11:42	AS	TAL CAN

Client Sample ID: C-3A
Date Collected: 06/25/14 14:00
Date Received: 06/26/14 01:30

Lab Sample ID: 480-62701-7
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
TCLP	Leach	1311			136921	07/01/14 18:15	DRJ	TAL CAN
TCLP	Prep	3010A			137029	07/02/14 10:52	DEE	TAL CAN
TCLP	Analysis	6010C		1	137227	07/03/14 14:33	RKT	TAL CAN
Total/NA	Prep	3050B			136675	06/30/14 10:54	DEE	TAL CAN
Total/NA	Analysis	6010C		1	136858	07/01/14 13:38	RKT	TAL CAN
Total/NA	Analysis	Moisture		1	137041	07/02/14 11:42	AS	TAL CAN

Client Sample ID: C-3B
Date Collected: 06/24/14 15:00
Date Received: 06/26/14 01:30

Lab Sample ID: 480-62701-8
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
TCLP	Leach	1311			136921	07/01/14 18:15	DRJ	TAL CAN
TCLP	Prep	3010A			137029	07/02/14 10:52	DEE	TAL CAN
TCLP	Analysis	6010C		1	137227	07/03/14 14:38	RKT	TAL CAN
Total/NA	Prep	3050B			136675	06/30/14 10:54	DEE	TAL CAN
Total/NA	Analysis	6010C		1	136858	07/01/14 13:50	RKT	TAL CAN
Total/NA	Analysis	Moisture		1	137041	07/02/14 11:42	AS	TAL CAN

Client Sample ID: C-3C
Date Collected: 06/24/14 15:30
Date Received: 06/26/14 01:30

Lab Sample ID: 480-62701-9
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
TCLP	Leach	1311			136921	07/01/14 18:15	DRJ	TAL CAN
TCLP	Prep	3010A			137029	07/02/14 10:52	DEE	TAL CAN
TCLP	Analysis	6010C		1	137227	07/03/14 14:50	RKT	TAL CAN
Total/NA	Prep	3050B			136675	06/30/14 10:54	DEE	TAL CAN
Total/NA	Analysis	6010C		1	136858	07/01/14 13:54	RKT	TAL CAN
Total/NA	Analysis	Moisture		1	137041	07/02/14 11:42	AS	TAL CAN

Client Sample ID: C-4A
Date Collected: 06/25/14 14:30
Date Received: 06/26/14 01:30

Lab Sample ID: 480-62701-10
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
TCLP	Leach	1311			136921	07/01/14 18:15	DRJ	TAL CAN
TCLP	Prep	3010A			137029	07/02/14 10:52	DEE	TAL CAN
TCLP	Analysis	6010C		1	137227	07/03/14 14:54	RKT	TAL CAN
Total/NA	Prep	3050B			136675	06/30/14 10:54	DEE	TAL CAN
Total/NA	Analysis	6010C		1	136858	07/01/14 13:58	RKT	TAL CAN
Total/NA	Analysis	Moisture		1	137041	07/02/14 11:42	AS	TAL CAN

Client Sample ID: C-4B
Date Collected: 06/24/14 16:00
Date Received: 06/26/14 01:30

Lab Sample ID: 480-62701-11
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
TCLP	Leach	1311			136921	07/01/14 18:15	DRJ	TAL CAN
TCLP	Prep	3010A			137029	07/02/14 10:52	DEE	TAL CAN
TCLP	Analysis	6010C		1	137227	07/03/14 14:59	RKT	TAL CAN
Total/NA	Prep	3050B			136675	06/30/14 10:54	DEE	TAL CAN
Total/NA	Analysis	6010C		1	136858	07/01/14 14:02	RKT	TAL CAN
Total/NA	Analysis	Moisture		1	137041	07/02/14 11:42	AS	TAL CAN

Client Sample ID: C-4C
Date Collected: 06/24/14 16:30
Date Received: 06/26/14 01:30

Lab Sample ID: 480-62701-12
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
TCLP	Leach	1311			136921	07/01/14 18:15	DRJ	TAL CAN
TCLP	Prep	3010A			137029	07/02/14 10:52	DEE	TAL CAN
TCLP	Analysis	6010C		1	137227	07/03/14 15:03	RKT	TAL CAN
Total/NA	Prep	3050B			136675	06/30/14 10:54	DEE	TAL CAN
Total/NA	Analysis	6010C		1	136858	07/01/14 14:06	RKT	TAL CAN
Total/NA	Analysis	Moisture		1	137041	07/02/14 13:52	AS	TAL CAN

Laboratory References:

TAL CAN = TestAmerica Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396

Certification Summary

Client: Sterling Environmental Engineering PC
Project/Site: NE Treater Project

TestAmerica Job ID: 480-62517-1

Laboratory: TestAmerica Buffalo

The certifications listed below are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
New York	NELAP	2	10026	03-31-15

Laboratory: TestAmerica Canton

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
California	NELAP	9	01144CA	06-30-14 *
California	State Program	9	2927	04-30-15
Connecticut	State Program	1	PH-0590	12-31-14
Florida	NELAP	4	E87225	06-30-14 *
Georgia	State Program	4	N/A	06-30-14 *
Illinois	NELAP	5	200004	07-31-14 *
Kansas	NELAP	7	E-10336	01-31-15
Kentucky (UST)	State Program	4	58	06-30-15
L-A-B	DoD ELAP		L2315	07-18-16
Minnesota	NELAP	5	039-999-348	12-31-14
Nevada	State Program	9	OH-000482008A	07-31-14 *
New Jersey	NELAP	2	OH001	06-30-15
New York	NELAP	2	10975	03-31-15
Ohio VAP	State Program	5	CL0024	10-31-15
Pennsylvania	NELAP	3	68-00340	08-31-14 *
Texas	NELAP	6		08-31-14 *
USDA	Federal		P330-13-00319	11-26-16
Virginia	NELAP	3	460175	09-14-14 *
Washington	State Program	10	C971	01-12-15
West Virginia DEP	State Program	3	210	12-31-14
Wisconsin	State Program	5	999518190	08-31-14 *

* Certification renewal pending - certification considered valid.

Method Summary

Client: Sterling Environmental Engineering PC
Project/Site: NE Treater Project

TestAmerica Job ID: 480-62517-1

Method	Method Description	Protocol	Laboratory
6010C	Metals (ICP)	SW846	TAL CAN
Moisture	Percent Moisture	EPA	TAL CAN

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL CAN = TestAmerica Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396

Sample Summary

Client: Sterling Environmental Engineering PC
Project/Site: NE Treater Project

TestAmerica Job ID: 480-62517-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
480-62517-1	S-1A	Solid	06/23/14 09:30	06/24/14 01:00
480-62517-2	S-1B	Solid	06/23/14 09:35	06/24/14 01:00
480-62517-3	S-1C	Solid	06/23/14 09:40	06/24/14 01:00
480-62517-4	S-1D	Solid	06/23/14 09:45	06/24/14 01:00
480-62517-5	S-1E	Solid	06/23/14 09:50	06/24/14 01:00
480-62517-6	S-2A	Solid	06/23/14 10:30	06/24/14 01:00
480-62517-7	S-2B	Solid	06/23/14 10:35	06/24/14 01:00
480-62517-8	S-2C	Solid	06/23/14 10:40	06/24/14 01:00
480-62517-9	S-2D	Solid	06/23/14 10:45	06/24/14 01:00
480-62517-10	S-2E	Solid	06/23/14 10:50	06/24/14 01:00
480-62517-11	S-3A	Solid	06/23/14 11:30	06/24/14 01:00
480-62517-12	S-3B	Solid	06/23/14 11:35	06/24/14 01:00
480-62517-13	S-3C	Solid	06/23/14 11:40	06/24/14 01:00
480-62517-14	S-3D	Solid	06/23/14 11:45	06/24/14 01:00
480-62517-15	S-3E	Solid	06/23/14 11:50	06/24/14 01:00
480-62517-16	S-4A	Solid	06/23/14 12:15	06/24/14 01:00
480-62517-17	S-4B	Solid	06/23/14 12:20	06/24/14 01:00
480-62517-18	S-4C	Solid	06/23/14 12:25	06/24/14 01:00
480-62517-19	S-4D	Solid	06/23/14 12:30	06/24/14 01:00
480-62517-20	S-4E	Solid	06/23/14 12:35	06/24/14 01:00
480-62701-1	C-1A	Solid	06/25/14 13:00	06/26/14 01:30
480-62701-2	C-1B	Solid	06/24/14 13:00	06/26/14 01:30
480-62701-3	C-1C	Solid	06/24/14 13:30	06/26/14 01:30
480-62701-4	C-2A	Solid	06/25/14 13:30	06/26/14 01:30
480-62701-5	C-2B	Solid	06/24/14 14:00	06/26/14 01:30
480-62701-6	C-2C	Solid	06/24/14 14:30	06/26/14 01:30
480-62701-7	C-3A	Solid	06/25/14 14:00	06/26/14 01:30
480-62701-8	C-3B	Solid	06/24/14 15:00	06/26/14 01:30
480-62701-9	C-3C	Solid	06/24/14 15:30	06/26/14 01:30
480-62701-10	C-4A	Solid	06/25/14 14:30	06/26/14 01:30
480-62701-11	C-4B	Solid	06/24/14 16:00	06/26/14 01:30
480-62701-12	C-4C	Solid	06/24/14 16:30	06/26/14 01:30

12

TestAmerica Albany
25 Kraft Road
Albany, NY 12205

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler:	Lab PM:	Carrier Tracking No(s):
Client Contact: Mr. Vedran Cirkovic	Phone:	E-Mail:	
Company: Sterling Environmental Engineering PC			
Address: 24 Wade Road	Due Date Requested:		
City: Latham	TAT Requested (days): Standard		
State, Zip: NY, 12110			
Phone: 518-456-4900(Tel)	PO #: Purchase Order not required		
Email: vedran.cirkovic@sterlingenvironmental.com	WO #:		
Project Name: NE Treater Project	Project #: 48010042		
Site:	SSOW#:		

480-62517 Chain of Custody

COC No: 480-51222-13675.1
Page: Page 1 of 3
Job #:

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

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6010C - TCLP Metals ICP	6010C - Total Metals ICP	Total Number of containers	Special Instructions/Note:
				Preservation Code:			N	N		
S-1A	6/23/14	9:30am	G	Solid			X	X		
S-1B	↓	9:35am	↓	Solid			↓	↓		
S-1C	↓	9:40am	↓	Solid			↓	↓		
S-1D	↓	9:45am	↓	Solid			↓	↓		
S-1E	↓	9:50am	↓	Solid			↓	↓		
S-2A	↓	10:30am	↓	Solid			↓	↓		
S-2B	↓	10:35am	↓	Solid			↓	↓		
S-2C	↓	10:40am	↓	Solid			↓	↓		
S-2D	↓	10:45am	↓	Solid			↓	↓		
S-2E	↓	10:50am	↓	Solid			↓	↓		
				Solid						

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

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

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

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:		
Relinquished by: [signature]	Date/Time: 6/23/14 @ 2:30pm	Company	Received by: [signature]	Date/Time: 6-23-14 14:43	Company: TA
Relinquished by: [signature]	Date/Time: 6-23-14 18:00	Company: TA	Received by: [signature]	Date/Time: 6-24-14 0:00	Company: TAL
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 3 #1

TestAmerica Albany
25 Kraft Road
Albany, NY 12205

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler:	Lab PM: Shaffer, Lisa E	Carrier Tracking No(s):	COC No: 480-51222-13675.1
Client Contact: Mr. Vedran Cirkovic	Phone:	E-Mail: lisa.shaffer@testamericainc.com		Page: Page 1 of 3
Company: Sterling Environmental Engineering PC		Analysis Requested		Job #:
Address: 24 Wade Road	Due Date Requested:			Preservation Codes:
City: Latham	TAT Requested (days): Standard			
State, Zip: NY, 12110				
Phone: 518-456-4900(Tel)	PO #: Purchase Order not required			
Email: vedran.cirkovic@sterlingenvironmental.com	WO #:			
Project Name: NE Treater Project	Project #: 48010042			
Site:	SSOW#:			Other:

Preservation Codes:

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

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6010C - TCLP Metals ICP	6010C - Total Metals ICP	Total Number of containers	Special Instructions/Note:
			Preservation Code:				N	N		
S-3A	6/23/14	11:30am	G	Solid			X	X		
S-3B	↓	11:35am	↓	Solid			↓	↓		
S-3C		11:40am		Solid						
S-3D		11:45am		Solid						
S-3E		11:50am		Solid						
S-4A		12:15pm		Solid						
S-4B		12:20pm		Solid						
S-4C		12:25pm		Solid						
S-4D		12:30pm		Solid						
S-4E	↓	12:35pm	↓	Solid			↓	↓		
				Solid						

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

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

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

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:		Method of Shipment:	
Relinquished by: [signature]	Date/Time: 6/23/14 @ 2:20pm	Company	Received by: [signature]	Date/Time: 6-23-14 14:43	Company: TA
Relinquished by: [signature]	Date/Time: 6-23-14 18:00	Company: TA	Received by: [signature]	Date/Time: 6-24-14 0100	Company: TAL
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks: 3.1 #1		

13

TestAmerica Albany
25 Kraft Road
Albany, NY 12205

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

480-62701 Chain of Custody

Client Information	Sampler:	Lab PM: Shaffer, l	COC No: 480-51222-13675.1
Client Contact: Mr. Vedran Cirkovic	Phone:	E-Mail: lisa.shafl	Page: Page 1 of ~~1~~ 2
Company: Sterling Environmental Engineering PC			Job #:
Address: 24 Wade Road	Due Date Requested:		
City: Latham	TAT Requested (days):		
State, Zip: NY, 12110			
Phone: 518-456-4900(Tel)	PO #: Purchase Order not required		
Email: vedran.cirkovic@sterlingenvironmental.com	WO #:		
Project Name: NE Treater Project	Project #: 48010042		
Site:	SSOW#:		

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

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6010C - TCLP Metals ICP	6010C - Total Metals ICP	Total Number of containers	Special Instructions/Note:
			Preservation Code:				N	N		
C-1A	6/25/14	1:00pm	G	Solid			X	X		
C-1B	6/24/14	1:00pm		Solid						
C-1C	6/24/14	1:30pm		Solid						
C-2A	6/25/14	1:30pm		Solid						
C-2B	6/24/14	2:00pm		Solid						
C-2C	6/24/14	2:30pm		Solid						
C-3A	6/25/14	2:00pm		Solid						
C-3B	6/24/14	3:00pm		Solid						
C-3C	6/24/14	3:30pm		Solid						
C-4A	6/25/14	2:30pm		Solid						
C-4B	6/24/14	4:30pm		Solid						

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

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

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

Special Instructions/QC Requirements:

Empty Kit Relinquished by: | Date: | Time: | Method of Shipment:

Relinquished by	Date/Time	Company	Received by	Date/Time	Company
[signature]	4:50 6/25/14		[signature]	6-25-14 16:50	TA
[signature]	6-25-14 18:00	TA	[signature]	6-26-14 0130	TAL

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.: | Cooler Temperature(s) °C and Other Remarks: 2.4 #15

13

TestAmerica Albany
25 Kraft Road
Albany, NY 12205

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler:	Lab PM: Shaffer, Lisa E	Carrier Tracking No(s):	COC No: 480-51222-13675.2
Client Contact: Mr. Vedran Cirkovic	Phone:	E-Mail: lisa.shaffer@testamericainc.com		Page: Page 2 of 2
Company: Sterling Environmental Engineering PC				Job #:
Address: 24 Wade Road	Due Date Requested:			
City: Latham	TAT Requested (days):			
State, Zip: NY, 12110				
Phone: 518-456-4900(Tel)	PO #: Purchase Order not required			
Email: vedran.cirkovic@sterlingenvironmental.com	WO #:			
Project Name: NE Treater Project	Project #: 48010042			
Site:	SSOW#:			

Analysis Requested

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

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6010C - TCLP Metals ICP	6010C - Total Metals ICP	Total Number of containers	Special Instructions/Note:
				Preservation Code:			N	N		
C-4C	6/24/14	4:30pm	G	Solid			X	X		
				Solid						
				Solid						
				Solid						
				Solid						
				Solid						
				Solid						
				Solid						
				Solid						
				Solid						
				Solid						

6/25/14

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

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

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

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:		Time:		Method of Shipment:	
Relinquished by:	Date/Time: 4:50pm 6/25/14	Company	Received by:	Date/Time: 6-25-14 16:50	Company: TA	
Relinquished by:	Date/Time: 6-25-14 18:00	Company: TA	Received by:	Date/Time: 6-26-14 0130	Company: TA	
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company	
Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks: 2.4 #1			

13

Login Sample Receipt Checklist

Client: Sterling Environmental Engineering PC

Job Number: 480-62517-1

Login Number: 62517
List Number: 1
Creator: Wienke, Robert K

List Source: TestAmerica Buffalo

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

14

Login Sample Receipt Checklist

Client: Sterling Environmental Engineering PC

Job Number: 480-62517-1

Login Number: 62701
List Number: 1
Creator: Wienke, Robert K

List Source: TestAmerica Buffalo

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

ATTACHMENT 8

REPOSITORY LETTER

STERLING

Sterling Environmental Engineering, P.C.

October 1, 2014

Ms. Bonnie Snyder
Library Director
D. R. Evarts Library
80 Second Street
Athens, New York 12015

Subject: Document Repository
Brownfield Cleanup Program
Northeast Treaters of NY, LLC.
796 Schoharie Turnpike
Athens, New York 12015
STERLING File #2014-08

Dear Ms. Snyder,

Thank you for agreeing to act as the document repository for the Brownfield Cleanup Site located in the Town of Athens at 796 Schoharie Turnpike. As requested, we will contact you before forwarding repository documents to the D. R. Evarts Library when they become available.

As discussed, due to the limited space at your facility, we will attempt to minimize the physical space of repository documents by making project details and large documents available in CD-ROM format.

Please contact me should you have any questions or comments.

Sincerely yours,

STERLING ENVIRONMENTAL ENGINEERING, P.C.

Rodney L. Aldrich

Rodney L. Aldrich, P.E.
Director of Environmental Services
rodney.aldrich@sterlingenvironmental.com

RLA/bc
Email/First Class Mail

cc: James Quinn, P.E., NYSDEC Region 4
Robert Schick, P.E., NYSDEC Central Office
David Reed, Northeast Treaters, Athens, NY
Greg Christy, Northeast Treaters, Athens, NY
Kevin Young, Young Sommer
Beth Morss, Young Sommer

2014-08\Correspondence\Document Repository_ltr.doc

ATTACHMENT 9

CHAPTER 7: INDUSTRIAL SITES AND FACILITIES

OF

GREENE COUNTY'S COMPREHENSIVE ECONOMIC DEVELOPMENT PLAN

7. Industrial Sites and Facilities

Introduction

Greene County's "shovel-ready" business parks are one of its most important assets for economic development. As the county-sponsored business parks are built out, however, there will be a need for additional parks and sites to accommodate target industries attracted to the area as well as local businesses undergoing expansion. How and where should the County establish new business or industrial parks, and what steps will need to be taken to prepare them for future development? Are the existing parks suitable for potential target industries? And what are the criteria used by different sizes and types of companies in evaluating suitable sites?

To address these questions, this chapter of the Comprehensive Economic Development Plan examines Greene County's existing business parks, the sites that have been identified for future industrial development, and the requirements of the target industries identified earlier in the plan document. It concludes with a list of commercial and industrial development opportunities by subregion, as well as site assessment criteria to be used to establish new business and industrial parks in the County.

KEY FINDINGS

- Greene County has two county-sponsored business parks: Kalkberg Commerce Park and the Greene Business & Technology Park. Both of these parks have been approved by the State of New York as "shovel-ready," meaning that all environmental and infrastructure considerations have been fully addressed. Properties in the two parks have also received designation by the Greene County Legislature as Empire Zones.

- The Greene County Industrial Development Agency (GCIDA) has recently received as a donation the majority of sites in the Hudson Valley Business Park, located in the Town of Coxsackie. The Hudson Valley Business Park is not certified as "shovel-ready" as additional environmental studies and engineering plans are necessary. Additionally, there are significant environmental constraints within this Park which may limit the amount of viable land for development.

- Two future industrial park sites have been identified by the County: The Travco Industrial Property, located along the Schoharie Turnpike in the Town of Athens, along with lands surrounding the property including land adjacent to the New Athens Generating Facility; and the proposed Catskill Industrial Park, located along State Route 9W in the Town and Village of Catskill.

- Build Now-NY is a valuable state program that provides matching grants up to $100,000 to help local communities pay for professional services such as engineering studies, environmental

7. Industrial Sites and Facilities

assessments, legal support, and planning to bring business parks and industrial sites to shovel-ready status. The GCIDA has recently received $172,500 in Build-Now NY funds for the Hudson Valley Business Park, Travco Industrial Property and the Greene County IDA Destination Retail & Business Park expansion north of Kalkberg.

- Over the past 2 years, absorption at the IDA parks has been at 20 acres per year. The GCIDA projects a minimum absorption rate of 20 to 25 acres per year. While this projection is conservative, absorption could increase based upon aggressive target industry marketing aligned with the recommended target industries report.

- Properties within the Greene County Empire Zone encompass a total of 1,260 acres, of which 285 acres are within existing industrial parks (see *Map 2* in the Appendix). A total of 728 acres of Empire Zone-designated properties are developable for disposition. Within existing industrial parks, only a total of 70 acres of industrial sites are developable excluding portions that have been disposed, as well as environmental features such as wetlands, flood plains, hydric soils, steep slopes and other unbuildable areas. Currently, there is one 24 acre site within the Kalkberg Commerce Park and two sites within the Greene Business & Technology Park totaling 32 acres, available as shovel-ready sites.

- Using the current absorption rate of 20 to 25 acres per year, Greene County has less than 3 years of inventory of developable industrial sites and less than 2 years inventory of shovel-ready land. The use of Build-Now NY funds would help bring properties within the Empire Zones to shovel-ready status.

- The Target Industry and Resource Analysis identified business development opportunities in the 3 subregions to meet the needs of target industries. Most industrial development in the Historic River Towns would be comprised of medium- to large-sized operations ranging from 25,000 to 100,000 square feet of space. Opportunities for Valley Towns would mostly be for small- to medium-sized operations ranging from 5,000 to 50,000 square feet. Due to environmental and regulatory constraints, the Mountaintop Towns are generally not suited for mid- to large-sized operations, but could accommodate small operations with 2,000 to 5,000 square feet of space with the exception of large tourism destination type facilities.

- The majority of the existing industrial park development to date has been located in the Historic River Towns due to the availability of flat vacant land, transportation infrastructure (Route 9W and the NYS Thruway) and access to water and wastewater infrastructure. Future industrial development could be located in the Valley Towns, especially along the Route 23 and 145 corridors, but this subregion faces limitations with respect to water and wastewater infrastructure.

7. Industrial Sites and Facilities

- Property tax revenue sharing is an innovative way of funding economic development in the County, providing a source for matching funds to leverage funds without future obligation to local taxpayers. The recent business park projects sponsored by the GCIDA demonstrate a progressive use of tax revenue sharing to cover the long term costs of measures required for environmental permitting, as well as the future investment in new infrastructure and planning for additional development. These real costs associated with development often result in a long-term burden to local governmental units as these responsibilities have to be met in the future. By using Empire Zone benefits, the tax sharing agreements benefit from the fact that the business park tenants pay 100% of their real property tax to the local taxing jurisdictions, with their savings rebated by NYS. In a traditional PILOT (Payment in Lieu of Taxes) agreement, the business park tenant would normally be charged a reduced tax rate for a period of years, reducing the initial revenue available for long term management of environmental mitigation requirements that were necessary to build the project.

- Key areas targeted for future commercial and industrial development in Greene County will have significant environmental, archeological and infrastructure limitations that must be addressed prior to large-scale development. Infrastructure, specifically water, sewer and transportation, presents significant limitations to support future growth and development. Infrastructure is not only available in limited geographic areas, but in most cases elements such as filtration, storage, transmission lines and other components are currently stressed. Several municipal suppliers of water and wastewater infrastructure are under consent order with limitations on additional hookups.

- There is a general lack of recognition that stormwater management is an infrastructure issue. While most recognize elements such as water, wastewater and roads as a component of infrastructure necessary for development, there is little understanding that stormwater systems will become an increasingly important issue.

- Environmental issues related to wetlands and habitat may be the single most significant limiting factor in those areas of Greene County that present the best sites based on other considerations such as transportation, infrastructure and topography. To address these issues effectively, Greene County will need to focus less on site by site mitigation strategies and work creatively with the GCSWCD as well as state and federal regulatory agencies to further develop and implement a more regionalized mitigation plan.

7. Industrial Sites and Facilities

Summary Profile of Existing Industrial Parks in Greene County

Greene County currently has five primary areas that have been targeted for the development of industrial parks. These areas include fully shovel-ready business parks in the northeast corner of the County and former industrial areas that require various levels of redevelopment to meet current standards, as well as open, vacant, underutilized or undeveloped spaces that may or may not face significant challenges before they can be developed.

On one end of the spectrum, the County's two business parks (the Greene Business & Technology Park and the Kalkberg Commerce Park) offer completely "shovel-ready" space that has had all environmental and infrastructure considerations fully addressed. The Kalkberg Commerce Park and the Greene Business & Technology Park form part of the Greene County IDA Business Park, together with adjacent properties identified for industrial park development. In the middle of the range is the Hudson Valley Business Park, which has water, road and utility infrastructure in place, but is lacking stormwater and has extensive wetland mitigation issues that need to be addressed. In Athens, the Travco Industrial Property is anchored by a former industrial site that has some infrastructure in place, but still requires investigation of environmental issues for the development of a future Athens Industrial Park. The final site is the future Catskill Industrial Park, located in the Town and Village of Catskill, which has sewer and water infrastructure in close proximity, but may be constrained by transportation infrastructure, wetlands, topographical and other environmental issues. The site is comprised of a mix of existing development and open space.

Properties within the Greene County Empire Zone encompass a total of 1,260 acres, of which 285 acres are within existing industrial parks (see *Map 2* in the Appendix). A total of 727 acres are developable within the Empire Zone-designated properties. Within the boundaries of existing industrial sites, only a total of 70 acres are developable. This excludes sites that have been disposed, areas/footprints occupied by existing facilities or industries on-site, as well as environmental features such as wetlands, flood plains, hydric soils, steep slopes and other unbuildable areas.

Currently, only 167 acres of industrial sites in Greene County are completely shovel-ready. These are the Greene Business & Technology Park and the Kalkberg Commerce Park. Of these shovel-ready sites only 50 acres are currently available for development. Other industrial parks are in various stages of shovel-readiness, with the Hudson Valley Business Park closest to being shovel-ready and the Travco and Catskill Industrial Parks needing substantial work. Identified properties within Empire Zones that are not shovel-ready should be brought to that status to increase the County's inventory of available industrial land.

7. Industrial Sites and Facilities

The matrix below provides a summary of the Empire Zone designated sites and existing industrial parks with the shovel-ready status of each. The *Empire Zone Map (Map 2)* in the Appendix shows the Empire Zone boundaries and delineates existing industrial sites within the Empire Zones, as well as the location of environmental features. *Maps 3 through 6* provide more detailed views of each of the four zone areas.

Summary Status of Existing Empire Zones and Business/Industrial Parks in Greene County									
	Empire Zone Boundary					Existing Industrial Sites			
	Gross Acreage	Develop-able	Not Available	Environ-mental Features	Retail Uses	Gross Acreage	Develop-able	Not Available	Environ-mental Features
Shovel-Ready Parks									
Greene IDA Business Park* EZ Area 1	728	432	26	284					
Greene Business & Technology Park					24	105	21	26	48
Kalkberg Commerce Park					0	62	16	16*	29
Sub-Total	*728*	*432*	*26*	*284*	*24*	*167*	*37*	*42*	*77*
Partially Shovel-Ready									
Hudson Valley Business Park EZ Area 2	100	53	25	26	0	36	11	25	5
Sub-Total	*100*	*53*	*25*	*26*	*0*	*36*	*11*	*25*	*5*
Not Shovel-Ready									
Athens Industrial Park EZ Area 3	167	82	19	67	0	74	22	16	36
Catskill Industrial Park EZ Area 4	265	160	27	81	0	8	0	8	1
Sub-Total	*432*	*242*	*46*	*148*	*0*	*82*	*22*	*24*	*37*
Total	**1,260**	**727**	**97**	**458**	**24**	**285**	**70**	**75**	**119**

*16 acres in KCP was not included in the EZ boundary.
Note: Acreage determinations based on 2005 Empire Zone Application and Greene County Soil & Water District data. As further wetland delineation is completed, acreage numbers will be further refined.

THE GREENE COUNTY IDA BUSINESS PARK

Greene County's Empire Zone designation for the Greene County IDA Business Parks covers a total of 728 acres. Based on the GIS map layers provided by the GCDPED, the Empire Zone designation is comprised of 129 acres in the Greene Business & Technology Park (GBTP) and 62 acres in the Kalkberg Commerce Park (KCP). The Greene Business & Technology Park includes 105 acres of

7. Industrial Sites and Facilities

industrial property and 24 acres set-aside for retail uses along Route 9W; the retail portion of the industrial park is not located within the Empire Zone. The balance of developable industrial lands at the two business parks stands at 24 acres at KCP and 32 acres at GBTP. With only 56 acres of shovel-ready industrial land available in the County, steps should be taken to have most of the Empire Zone designated sites shovel-ready for development. The two business parks are adjacent to 284 acres of habitat conservation lands owned by the Greene Land Trust. The Empire Zone designated area includes developable land that could be used for expansion. The GCIDA has also identified properties outside the Empire Zone that could be developed for industrial uses in the future. These are discussed in detail later in this chapter.

The Greene County IDA Business Parks are located within ½ mile of the NYS Thruway. The northern portion of the site is located in the Town of New Baltimore, and is bordered to the west by exit 21B of the NYS Thruway. The southern portion is located in the Town of Coxsackie and fronts the 9W corridor to the west. A rail line borders the site's eastern edge at the southern portion of the site and traverses the northern portion of the property.

The area comprising the Greene County IDA Business Park is currently zoned Commercial/Industrial and is considered shovel-ready with water, sewer, gas, power, stormwater, and telecommunications infrastructure available. The southern portion of the business park has 10-inch waterpipes on-site, capable of delivering 1.8 million gallons per day (gpd), while the northern portion has a 400,000-gallon water tank. The Town of Coxsackie provides wastewater services, with treatment capacity for 1.2 million gpd. The GBTP and KCP also include stormwater infrastructure that meets or exceeds current state Phase II stormwater regulations.

The Greene IDA Business Park received Empire Zone designation in July 2006. Originally, zone benefits were accorded to businesses in the park through the Columbia County Empire Zone. With the Empire Zone designation, businesses relocating to the Greene County IDA Business Park could avail themselves of the various incentives associated with the Empire Zone. According to Greene County's 2005 Empire Zone Application, selling prices for the business park range from $75,000 to $100,000 per acre along the eastern edge to $200,000 along the 9W corridor.

Current park occupants include the Save-A-Lot Distribution Center and Bank of Greene County at the Greene Business & Technology Park and National Bedding/Serta at the Kalkberg Commerce Park. Save-A-Lot operates a 332,000 square feet warehouse and has a proposed 70,000 square foot expansion. National Bedding/Serta has a 232,000 square feet manufacturing, office administration, and shipping facility. The Town of Coxsackie Zoning Code proscribes commercial zoning along the park's western edge, facing the 9W corridor for retail uses.

7. Industrial Sites and Facilities

Operation and maintenance costs associated with the Greene Business & Technology Park and the Kalkberg Commerce Park facilities are currently funded via two mechanisms. First, the tenants in the business parks contribute to Operations & Maintenance (O&M) costs for items such as lighting and stormwater maintenance. Tenants are assessed their portion of these costs based on the percentage of shovel ready land they own in relation to the full park. The second mechanism used to fund O&M involves a Tax Revenue Sharing Agreement developed in conjunction with the local school district, the town(s) and Greene County. The agreement is based on sharing the net gain in real property taxation, and is applied to each individual development project. Under the agreement, the prior taxes paid based on the pre-development assessment are subtracted from the increase in taxes that results from the post-development assessment to determine "net" taxes. The increase in direct tax revenue is then split, with the GCIDA receiving 20% of the new tax revenue and the school, town(s) and County splitting the remaining 80%.

GCIDA revenue from the PILOT is primarily dedicated to the ongoing costs to meet the business park's mitigation requirements. Development of these business parks required substantial environmental mitigation, which carries an O&M cost in perpetuity. To meet the O&M requirements of the business park mitigation strategy, the GCIDA has taken some very creative steps to maximize cost efficiency and address mitigation O&M beyond the term of the tax sharing agreements. First, the GCIDA has partnered with the Greene County Soil & Water Conservation District (GCSWCD) to manage all environmental and stormwater requirements. The GCSWCD's involvement results in these services being provided at a very favorable cost, and the GCIDA benefits from the GCSWCD's ability to access other funding sources as well as achieve benefits from economy of scale as the GCSWCD integrates these requirements into other programs it manages.

Additionally, to manage the substantial set-aside of conservation lands required under the business park's state and federal permits, the GCIDA and GCSWCD formed an independent, non-profit land trust (Greene Land Trust) which owns and manages the conservation properties on behalf of the GCIDA. The GCIDA and Greene Land Trust (GLT) have entered into a 20-year agreement that corresponds with the term of the tax sharing agreement, and provides the mechanism by which the GCIDA utilizes shared tax revenues to fund O&M requirements. The agreement has addressed long term O&M (after the agreements end) by creating a stewardship escrow to which the GCIDA makes annual contributions. At the conclusion of the agreements after 20 years, the Stewardship Fund has been designed to provide adequate investment revenues to allow for the management of all environmental features with no future burden on the GCIDA or the municipalities. Shared tax revenue has also provided seed funding for leveraging funds and has been a source of matching funds.

It should also be noted that the GCIDA has adopted a policy of holding all municipalities harmless from property tax impacts during the development, sale and build out of the business parks. While the GCIDA is eligible for tax exempt status upon its acquisition of a parcel for development, it has voluntarily chosen not to exercise this right in order to eliminate the impact to the local taxing jurisdictions during the period it takes to get the parks permitted and the first tenants in place. Once the GCIDA completes a business park and new tenants, who pay at least equal to or exceed the taxes contributed by the property pre-GCIDA purchase, are in place, the GCIDA obtains tax exempt status on the remaining lands to be developed. To date, the increased assessments and taxes paid by the initial tenant to each business park exceeded pre-development levels by a substantial margin. The local Towns have frozen the assessments on GCIDA lands acquired for development of business park for the period when the GCIDA is voluntarily paying the local property tax.

HUDSON VALLEY BUSINESS PARK

The Hudson Valley Business Park was a privately-developed business park that is now substantially under Greene County IDA ownership. Comprised of approximately 100 acres, the business park is located in the Town of Coxsackie and is situated 2.3 miles from exit 21B of the NYS Thruway. Approximately 60 acres of land remain for development, with the GCDIDA owning 50 of these acres and private ownership of the remaining 10 acres. The northern portion of the park ends close to the intersection of Plank Road and Bailey Street, while the southern edge borders Flint Mine Road. Greene County was awarded Empire Zone designation for the business park in July 2006. DynaBil Industries, an industrial manufacturer located adjacent to the Hudson Valley Business Park but within the Empire Zone Boundary, was certified by the County's Empire Zone Administrative Board in April of 2007. The GCIDA has also been recently awarded Build-Now NY funds for the site to bring it to shovel-ready status. Working with the GCSWCD, the GCIDA will address stormwater and wetland issues in 2007.

The Hudson Valley Business Park is currently zoned Industrial. Of the 100 acres within the Empire Zone designated boundary (*Map 4*), approximately 60 acres are available for development, especially for smaller-scale development with less than 50,000 square feet. The property has water, sewer, power, and telecommunications infrastructure; gas is available on-site. A rail spur is also available on-site.

Currently, business park occupants include the Brockway-Smith Company (a 140,000 square feet privately held window and door manufacturing and regional distribution facility), and Fast Track Steel (a steel erection company) and adjacent to the park is DynaBil Industries, a privately held state-of-the art aerospace facility that manufactures aircraft parts.

FUTURE ATHENS INDUSTRIAL PARK

The future Athens Industrial Park, based on the approved Empire Zone boundary, is comprised of approximately 167 acres and is located in the Town of Athens. The park is bordered to the west by

7. Industrial Sites and Facilities

a rail line, while a portion of the park abuts Flats Road to the east. The Schoharie Turnpike runs across the business park, dividing it into two sections. The property's current zoning is a combination of Industrial, Commercial and Residential. The properties found within the boundaries of the Empire Zone (*Map 5*) are privately owned. The Greene County IDA has also received Build-Now NY funds to bring the Travco Industrial Property to shovel-ready status.

Approximately 82 gross acres of the Empire Zone designated site are potentially developable, excluding portions that are occupied by existing industries, as well as environmental features. Two buildings presently occupy the business park – an 84,000 square foot unit and a 24,250 square foot structure. The Empire Zone also includes the Northeast Treaters of New York, a pressure treating lumber company.

The property has direct access to a rail spur used by local companies under cooperative agreement. The site also has access to the Iroquois Pipeline, a major gas compression transmission facility. Water supply is available through a 10-inch water main capable of delivering 1.8 million gallons per day. While the park is not serviced by a municipal sewer system, the plan is to extend the service to the site due to failure of the on-site septic system which once had the capacity to serve a 700-person industrial park population. The GCSWCD doubts the acceptability of the system to the NYSDEC/NYSDOH and recommends the need to develop better wastewater infrastructure. GCSWCD communication with both NYSDEC and NYSDOH indicate that there are no records of any State Pollution Discharge Elimination System (SPDES) permit ever issued for the waste water system at the Travco site. Additionally, the site of the former septic system is now characterized as federal wetlands and would likely require extensive permitting and mitigation if redevelopment of the system was proposed. The lack of sewer infrastructure is also an issue that needs to be addressed to make the site shovel-ready based on Build-Now NY standards. Additionally, the presence of extensive wetlands present significant limitations at the Travco site beyond redevelopment of those areas already characterized by buildings or gravel lots. Mapping conducted in the fall of 2006, indicated that out of 60+/- acres of the parcel that comprises the Travco site, only 17+/- acres are not wetlands. This included the footprint of the two existing structures and the parking areas surrounding them. The Travco site needs to undergo the SEQRA process, secure planning board approvals, receive support from the community and elected officials as well as complete environmental assessments for the site.

FUTURE CATSKILL INDUSTRIAL PARK

The future Catskill Industrial Park is a 265-acre site located in the Town and Village of Catskill and is 2 miles from exit 21 of the NYS Thruway. Properties within the Empire Zone area (*Map 6*) are privately-owned. Unlike the other existing business parks, the Greene County IDA has to yet apply for Build-Now NY funding to begin the process of bringing the park to shovel-ready status and there is limited information gathered on environmental and physical issues.

Approximately 160 gross acres of the 265-acre Empire Zone designated site are considered potentially developable to include environmental features, as well as properties occupied by existing businesses on-site. The Catskill Industrial Park is currently zoned with a combination of Industrial, Commercial and Rural Residential. Rezoning of rural residential parcels will have to be done as a step to bring the park to shovel-ready status. The Catskill Industrial Park has the advantage of having access to a rail line which bisects the entire length of the property. Casings Inc., a tire recycling company, occupies the northern portion of the area identified for Empire Zone designation. The Catskill Industrial Park is within the viewshed of the Olana State Historic Site, and siting of heavy industrial facilities could encounter opposition from the Olana Partnership, its supporters, and other environmental groups. The site is also challenged by environmental features that render a large portion of the site unbuildable. Water, sewer, transportation access and power capacity have yet to be verified.

Industrial Park Assessment

SITE ASSESSMENT CRITERIA

A set of criteria was developed that will serve as a toolbox that the County should use in evaluating existing business and industrial parks, as well as selecting sites for business and industrial parks. These encompass two sets of criteria:

- **General Criteria.** Moran, Stahl, & Boyer developed general guidelines for the selection of business and industrial parks from a site selector's perspective.
- **Industry-Specific Site Criteria.** Saratoga Associates developed a set of industry-specific technical criteria derived from Build-Now New York requirements. These criteria by type of use are important considerations in securing New York State funding for the purpose of developing shovel-ready sites.

GENERAL SITE SELECTION CRITERIA FOR BUSINESS/INDUSTRIAL PARKS

Usability of Land

- The soil should be well-drained and structurally sound to support buildings and related infrastructure, while easily excavated for utility lines and other needs.

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- The site should not contain wetlands, or wetlands must be located such that they are not disturbed during site excavation and operation, or impact soil conditions in areas where site improvements are installed.
- The site topography should be relatively flat and require minimal excavation in preparation for construction site improvements.

Access to Utilities
- Water, sewer, power, gas (optional), and high-speed telecommunications are either at the perimeter of the site or can economically be made available within three to six months.
- Capacity of utilities is adequate to support park activities (water flow rates, size of sewer lines and treatment plan capacity, available power, level of telecommunication capacity (e.g. T1, T3, etc. lines).

Adjacent Land Uses
- Avoid siting industrial parks in close proximity to schools, hospitals, nursing homes, residential neighborhoods and other sensitive areas. Establish minimum distances and use buffer zones with such uses as retail and commercial space.
- Have access to adjacent space that may allow for future expansion (a plus for marketing the site).

Highway Access
- For significant truck and other vehicular traffic, the site should have good access to a primary highway. Access should be controlled by light or have a hand turn in the direction closest to the Thruway for ease of egress.

Community Support
- The land must be zoned for industrial and/or office use and have the support of the community at large to avoid any future uses.
- The local jurisdiction must be in agreement as to who will provide the sewer/water services, any joint development cost and other requirements.

INDUSTRY SPECIFIC SITE SELECTION CRITERIA

The matrix below provides the technical requirements that should be used to assess business/industrial parks by type of industry use. In addition to the matrix presented below, the Project Team developed forms that could be used to evaluate technical requirements for sites as well as buildings.

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Industry	Site Criteria
High-Tech Research & Development	▪ 5 acres minimum ▪ Underground utilities ▪ Telecommunications & underground cables ▪ Presence of major university ▪ Presence of technical equipment support services ▪ High-density parking ▪ Location near an existing R&D park ▪ Access to airport ▪ Labor force skills
High-Tech Manufacturing	▪ 200 acres minimum ▪ Water: 3 million gallons per day (GPD) @ 80 PSI ▪ Wastewater: 2.4 million gallons per day (GPD) ▪ Electricity: from 2 separate sources @115 KV or 20 MW continuous ▪ Natural Gas: 2,000 MCF @ 8 PSI ▪ Adequate parking ▪ Ample truck & rail access ▪ Proximity to Interstate or limited 4-lane U.S. highway
Manufacturing	▪ 50 acres minimum ▪ Adequate parking ▪ Ample truck & rail access ▪ Electricity: 25,000 KW peak demand; ▪ 13,500,000 KWH/month, 13.8 KVA service voltage ▪ Water: 585,000 GPD ▪ Gas: 90,000 MFC/month average, 115,200 MCF/ month peak ▪ Sewer: 450,000 GPD to municipal treatment facility ▪ Within 90 minutes of an airport hub or regional airport with direct service to a hub
Light Industrial	▪ 10 acres minimum ▪ Adequate parking ▪ Direct truck & rail access ▪ Electricity: 5,500 KW peak demand; 3,000,000 KWH/month, 75% demand factor ▪ Natural gas: 50,000 therms or 5,000 MCF/month ▪ Water: 20,000 to 50,000 GPD, capable of processing 4,000 GPD of potable water ▪ Sewer: 20,000 to 40,000 GPD
Back Office	▪ Human resources (quality & size of semi-skilled workforce) ▪ Telecommunications systems: T-1 to T-3; ▪ Long distance service at reduced cost – proximity to Point of Presence (POP) ▪ Presence of Local Exchange Carriers (LECs) ▪ Lower real estate costs ▪ 100 to 150 square feet per workstation; each workstation to

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Industry	Site Criteria
	accommodate 2-3 employees for facility operating 18-24 hours daily ▪ Transportation access ▪ Utilities ▪ Ample parking: 10 spaces/1,000 square feet ▪ Time Zone sensitivity
Warehousing & Distribution	▪ 50 acres minimum ▪ Within 15 miles of an Interstate or limited access to four-lane U.S. highway via truck route ▪ Access routes designated for 53-foot trucks ▪ Topography: little elevation change; outside 100-year FEMA flood plain ▪ Land parcels square to slightly rectangular with little or no outparcel intrusions affecting site utilization or traffic flows
Business Commerce Parks	▪ 60 acres minimum (could be smaller on Mountaintop) ▪ Electricity: 14,000 KWH; 6,000,000 KWH/month, dual feed ▪ Natural Gas: 75,000 therms or 7,500 MCF/month ▪ Water: 62,000 GPD ▪ Sewer Flow: 62,000 GPD
Office Parks	▪ 25 acres minimum (could be smaller on Mountaintop) ▪ Fiber SONET ring infrastructure ▪ Diverse, redundant, digital electronic Central Offices (COs) / Points of Presence (POPs) ▪ Electricity: 1,500 KWH; 810,000 KWH/month ▪ Water: 15,000 GPD ▪ Sewer: 15,000 GPD

THE GREENE COUNTY IDA MODEL

The Greene County IDA provided a set of principles that has contributed to its success in the development of industrial sites. These principles, as listed below, could serve as a model for other municipalities looking to develop industrial sites:

- Quality of community impacts quality of development;
- Quality of development impacts quality of community;
- Requiring businesses attracted to provide a "livable wage" as well as basic employee benefit package including medical insurance and retirement;
- Partnership with preservation and environmental community;

7. Industrial Sites and Facilities

- Advisory Committee: Invite all views to the table;
- Enhance the community image and overall appearance;
- Use strict architectural and design standards to chase out bad development and encourage community support;
- Use strict standards to encourage good development: quality development is attracted to higher standards: Strict standards are embraced by the community, eliminates potential areas of conflict, and are good for local businesses;
- Do not settle for any development; be patient for the right companies; and
- Develop a vision, get community buy-in, and stay loyal to your commitments and standards.

SUITABILITY FOR TARGET INDUSTRIES

As part of the Comprehensive Economic Development Plan, the Project Team identified target industries for Greene County. Business size and resource requirements were identified for each target industry. Target industries included the following:

- **Food Processing** – Dairy processing or ethnic baked goods.
- **Printing and Related Support Operations** – Print flyers, promotional literature, corporate booklets, etc.
- **Plastics and Rubber** – Molding of plastic and rubber parts, components and final products.
- **Fabricated Metals and Machinery** – Products produced from the forming, machining and finishing of metals.
- **Electronic Components and Equipment** – Production of sensors, components, subassemblies and finished equipment.
- **Medical Devices** – Production of equipment, devices and supplies (wide range of products).
- **Warehousing and Storage** – Receive/store/load or cross-dock operations operated by third party retailer/wholesaler.

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- **Financial Services** – Back office support for bank/credit card operation or insurance company.

- **Professional and Technical Services** – Legal, accounting, marketing services, management, engineering, R&D, software/systems, etc.

- **Emerging Technologies** – Biotechnology (process technology), nanotechnology (process technology), energy equipment (materials forming and process technology), microelectronics/photonics (clean room process technology).

The GCDPED and GCIDA have identified the industry focus for each of the existing industrial parks.

- The *Greene County IDA Business Park* (Kalkberg Commerce Park and the Greene Business & Technology Park) currently has warehouse and distribution tenants on-site. The industrial park with its large acreage has the ability to accommodate different types of uses such as warehouse and distribution, office, retail and flex space for traditional and advanced manufacturing, as well as light assembly. The IDA is setting aside approximately 50 acres of the park for high-technology and light manufacturing uses.

- The *Hudson Valley Business Park* is focused on attracting small-scale development that would require less than 50,000 square feet and which would be easier to site given the environmental constraints. This business park is suited to office uses that cater to professional services, back office, and light manufacturing. Additionally, the GCIDA is giving consideration to allowing for future expansion needs of current key industries such as DynaBil Industries and Brockway-Smith Company.

- The future *Athens Industrial Park* is also suitable for office uses, light industrial and manufacturing, as well as small warehousing and storage operations that could support the needs of production and assembly.

- The future *Catskill Industrial Park* is focused on targeting commercial and office uses, manufacturing and a mix of other uses. Small warehousing and storage needs could also be allowed to support the needs of producers/manufacturers on site. The Catskill Industrial Park site is within the Olana viewshed and could possibly encounter opposition regarding siting heavy industrial uses on site. Site challenges such as the ravine within the identified Empire Zone boundaries may also limit the buildable area.

An assessment was conducted on the five existing business and industrial parks and their suitability for identified target industries. The process involved matching target industry requirements identified in

7. Industrial Sites and Facilities

the Target Industry report, Build Now-NY Site Criteria, and existing site attributes in terms of acreage, location, Empire Zone benefits, zoning, site options, facility options, utilities, transportation access, and other considerations that include stormwater, wetlands, habitat, and existing tenants. A more detailed Industrial Park Assessment to determine suitability for target industries is found in the end of this chapter. The assessment found target industry suitability by park as follows:

<table>
<tr><th colspan="2">Greene County IDA Business Park</th><th rowspan="2">Hudson Valley Business Park</th><th rowspan="2">Athens Industrial Park</th><th rowspan="2">Catskill Industrial Park</th></tr>
<tr><th>Kalkberg Commerce Park</th><th>Greene Business & Tech Park</th></tr>
<tr><td colspan="2">• Printing & Related Support Operations
• Fabricated Metals & Machinery
• Electronic Components & Equipment
• Medical Devices
• Warehousing & Storage
• Financial Services
• Professional & Technical Services
• Emerging Technologies
• Supply Chains
• Retail</td><td>• Printing & Related Support Operations
• Fabricated Metals & Machinery
• Electronic Components & Equipment
• Medical Devices
• Warehousing & storage
• Financial Services
• Professional & Technical Services
• Emerging Technologies (small scale)
• Supply Chains</td><td>• Food Processing
• Printing & Related Support Operations
• Plastics & Rubber
• Fabricated Metals & Machinery
• Electronic Components & Equipment
• Medical Devices
• Warehousing & storage (small scale)
• Financial Services
• Professional & Technical Services
• Emerging Technologies (small scale)
• Supply Chains</td><td>• Food Processing
• Printing & Related Support Operations
• Plastics & Rubber
• Fabricated Metals & Machinery
• Electronic Components & Equipment
• Medical Devices
• Warehousing & storage (small scale)
• Financial Services
• Professional & Technical Services
• Emerging Technologies (small scale)
• Supply Chains</td></tr>
</table>

7. Industrial Sites and Facilities

Getting Sites Shovel-Ready

Part of the industrial park assessment involved determining the shovel-readiness of existing business and industrial parks, as well as the steps that need to be completed to bring other sites to shovel-ready status. The assessment indicated that only Kalkberg Commerce Park and the Greene Business & Technology Park are shovel-ready and available to receive additional tenants and/or buyers, while the rest (Hudson Valley, Future Athens and Catskill Industrial Parks) are in various stages of shovel-readiness. All business parks have access to water and sewer, except for the Future Athens Industrial Park, which currently relies on on-site septic tanks. Approximately 7,136 lineal feet of sewer lines would be needed to connect the Future Athens Industrial Park to municipal sewer. An initial concept-level estimate indicates that approximately $360,000 in funds would be needed to extend municipal sewer lines to the Travco site, based on 2006 prices.

Additionally, at all currently identified potential industrial sites, environmental constraints are likely to be the single most significant limiting factor to new development. In addition to the limitations resulting from the cost of site assessment and permitting, environmental mitigation is also very expensive. Greene County would substantially benefit from an aggressive strategy that deals with environmental issues on a broader, perhaps even county wide scale with less focus on the traditional site by site assessment and mitigation. While individual sites would still require appropriate due diligence on a project by project basis, by working on a broader scale, and fully integrating key partners such as the GCSWCD and local environmental interests, the county can expect to have a far more positive impact on future development. Additionally, working regionally and with experienced partners, can greatly improve the cost effectiveness of environmental assessment and mitigation. Greene County needs to take full advantage of the reputation of the GCSWCD and needs to work with the GCSWCD, GCIDA, GCDPED, GLT and the environmental community to build upon the successful model used by the GCIDA and GCSWCD at the GBTP and KCP sites.

Steps to bring these parks to shovel-ready status can be summarized as follows:

Hudson Valley Business Park

- Gas line has to be downsized to the Station.
- Stormwater Plan needed.
- Verify the presence of wetlands in the park and prepare a Wetlands Mitigation Plan.
- Confirm habitat with NYS Department of Environmental Conservation and prepare a habitat mitigation plan.

Athens Industrial Park

- Reconfigure potential park boundaries to include land adjacent to the Athens Generating Facility and then rezone Residential to Commercial/Industrial where needed.

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- Needs Planning Board approval.
- Needs SEQRA review.
- Needs Environmental Assessment.
- Stormwater Plan needed.
- Confirm gas and power capacity.
- Provide municipal sewer; extend sewer lines to the park.
- Install T-1 lines (telecom fiber).
- Verify the presence of wetlands in the park and prepare a Wetlands Mitigation Plan.
- Confirm habitat with NYS Department of Environmental Conservation and prepare a habitat mitigation plan.
- Build community consensus for the project with local government support.

<u>Catskill Industrial Park</u>

- Rezone Residential to Commercial/Industrial.
- Needs Planning Board approval.
- Needs SEQRA review.
- Needs Environmental Assessment.
- Stormwater Plan needed.
- Confirm water, sewer, gas and water capacity.
- Verify the presence of wetlands in the park.
- Prepare a Wetlands Mitigation Plan.
- Confirm habitat with NYS Department of Environmental Conservation.
- Apply for Build-Now NY funds.
- Build community consensus for the project with local government support.

The Industrial Park Assessment is summarized in the following matrix:

	Greene County IDA Business Park		Hudson Valley Business Park	Athens Industrial Park	Catskill Industrial Park
	Kalkberg Commerce Park	Greene Business & Tech Park			
General Information					
Total EZ Designated Site	728 acres		100 acres	167 acres	265 acres
Total Developable (EZ)	432 acres		53 acres	82 acres	160 acres
Shovel-Ready	105 (excludes retail set-aside)	-	-	-	-
Developable within Existing Industrial Site	21 (excludes retail set-aside)				

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	Greene County IDA Business Park		Hudson Valley Business Park	Athens Industrial Park	Catskill Industrial Park
	Kalkberg Commerce Park	Greene Business & Tech Park			
Location	T. New Baltimore & Coxsackie	T. Coxsackie	T. Coxsackie	T. Athens	T. & V. Catskill
Ownership	Greene County IDA	Private/ Greene County IDA Controlled	Private/ Greene County IDA Controlled	Private	Private
Empire Zone Benefits	EZ Designation Granted	EZ Designation Granted	EZ Designation Granted	EZ Designation Granted	EZ Designation Granted
Zoning	Commercial/ Industrial	Industrial	Industrial	Partially zoned Industrial, Commercial & Residential	Partially zoned Industrial, Commercial & Rural Residential
Current Target Markets	Larger development 200,000-300,000 SF; Technology, light manufacturing, commercial, data center, retail	Small-scale development <50,000 SF; Professional, light Manufacturing, data center, back office	Small-scale development <50,000 SF; Professional, light manufacturing, data center, back office	Commercial, light industrial, small warehousing & distribution, light industrial back office	Commercial, light industrial, Manufacturing, mixed-use small warehousing & distribution
Shovel-Ready	Y	Y	N	N	N
Build Now-NY	Y	Y	Y	Y	N
Target Industry Suitability					
Food Processing	N	N	N	Y	Y
Printing & Related Support Operations	Y	Y	Y	Y	Y
Plastics & Rubber	N	N	N	Y	Y
Fabricated Metals & Machinery	Y	Y	Y	Y	Y
Electronic Components & Equipment	Y	Y	Y	Y	Y
Medical Devices	Y	Y	Y	Y	Y
Warehousing & Storage	Y	Y	N	Y (small scale)	Y (small scale)
Financial Services	Y	Y	Y	Y	Y
Professional & Technical Services	Y	Y	Y	Y	Y
Emerging	Y	Y	Y (small scale)	Y (small scale)	Y

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	Greene County IDA Business Park		Hudson Valley Business Park	Athens Industrial Park	Catskill Industrial Park
	Kalkberg Commerce Park	Greene Business & Tech Park			
Technologies					
Supply Chains	Y	Y	Y	Y	Y
Retail	Y	Y	N	N	N
Shovel-Ready Requirements					
Zoning	Y	Y	Y	Partly zoned Industrial, Commercial & Residential	Partly zoned Industrial, Commercial & Rural Residential
SEQRA	Y	Y	N	N	N
Water	Y	Y	Y	Capacity unknown	Capacity unknown
Sewer	Y	Y	Y	On-site septic systems only	Unknown
Telecom/Internet	Y	Y	Y	Y	Y
Gas	Y	Y	Gas/main distribution to site; needs to be downsized to station	Y	Unknown
Power	Y	Y	Y	Capacity unknown	Capacity unknown
Storm water	Y	Y	Stormwater Plan Required	Stormwater Plan Required	Stormwater Plan Required
Wetlands	Y	Y	Delineation & Management Plan required	Delineation & Management Plan required	Delineation & Management Plan required
Habitat	Y	Y	Mapped; management plan underway	Mapped; management plan underway	Confirm endangered species w/ NYSDEC
Transportation					
Interstate	0.5 miles to I-87; fronts Rt. 9W	0.5 miles to I-87; fronts Rt. 9W	2.3 miles to Exit 21B, I-87	3.4 miles to Exit 21, I-87	2 miles to Exit 21, I-87
Rail	No rail spur; adjacent to line	No rail spur; adjacent to line	Rail spur on-site	Direct access to rail line	Direct access to rail line
Air	40 minutes to Albany International Airport	40 minutes to Albany International Airport	40 minutes to Albany International Airport	40 minutes to Albany International Airport	40 minutes to Albany International Airport
Next Steps					
Zoning	Y	Y	Y	Rezone all residential to C/I	Rezone all rural residential to C/I
SEQRA	Y	Y	Required	Required	Required

7. Industrial Sites and Facilities

	Greene County IDA Business Park		Hudson Valley Business Park	Athens Industrial Park	Catskill Industrial Park
	Kalkberg Commerce Park	Greene Business & Tech Park			
Water	Y	Y	Y	Confirm water capacity	Confirm water capacity
Sewer	Y	Y	Y	Municipal sewer preferred	Confirm sewer capacity
Telecom/Internet	Y	Y	Y	Install T-1	Install T-1
Gas	Y	Y	Gas line needs to be downsized to Station	Confirm gas capacity	Confirm gas line
Power	Y	Y	Y	Confirm power capacity	Confirm power capacity
Storm water	Y	Y	Stormwater plan needed	Stormwater Plan needed	Stormwater Plan Needed
Wetlands	Y	Y	Delineation & Management Plan required	Delineation & Management Plan required	Delineation & Management Plan required
Habitat	Y	Y	Confirm habitat w/ NYSDEC	Confirm habitat w/ NYSDEC	Confirm habitat w/ NYSDEC
Build-Now NY Funds	Y	Y	Y	Y	Submit application

The Need For Additional Industrial Park Inventory

Greene County has a total inventory of approximately 1,260 acres of property in Empire Zone designated sites. Of this total gross acreage, approximately 727 are not developable, considering environmental features such as wetlands, streams, steep slopes, and hydric soils, and excluding property that has already been disposed. Within the Empire Zone designated areas, only 167 acres of industrial land are considered shovel-ready, particularly those within the Greene Business & Technology Park and the Kalkberg Commerce Park. Only 50+/- acres of shovel-ready land are available for development and disposition. With the current absorption of approximately 20 to 25 acres per year according to the GCIDA, the County has between 1½ and 2 years of shovel-ready land in its inventory.

7. Industrial Sites and Facilities

	Total Acreage	Total Developable	Absorption Rate	# Years Inventory
Total Empire Zones	1,260	727	20 – 25 acres/year	29
Shovel-Ready				
Greene Business & Tech Park	105	21	20 – 25 acres/year	.8
Kalkberg Industrial Park	62	16	20 – 25 acres/year	.6
Sub-Total	167	37		1.5
Partially Shovel-Ready				
Hudson Valley Business Park	100	53	20 – 25 acres/year	2.1
Sub-Total	100	53		2.1
Not Shovel-Ready				
Athens Industrial Park	167	82	20 – 25 acres/year	3.2
Catskill Industrial Park	265	160	20 – 25 acres/year	6.4
Sub-Total	432	242		9.6

The Greene County IDA has identified additional properties for industrial development in the future. These properties are located close to existing industrial parks, particularly the Greene IDA Business Parks (Greene Business & Technology and Kalkberg), as well as the future Athens Industrial Park. These identified sites are located in the Towns of New Baltimore, Coxsackie and Athens. Approximately 330 acres have been identified in addition to properties with Empire Zone designated sites (see *Map 19* in the appendices for more detail). It is expected that all of these sites may present significant limitations due to the presence of wetlands.

While currently the market could absorb approximately 20 to 25 acres per year of industrial land, demand could increase should Greene County become successful in attracting new businesses in identified target industries. For example, Build-Now NY site selection criteria require a minimum of 50 acres for sites dedicated to manufacturing. There are several target industries identified in the Target Industry and Resource Analysis that might require larger sites. These include traditional manufacturing operations such as plastics injection molding, as well as advanced manufacturing industries, such as fabricated metal products, medical devices, and electronic components manufacturing.

Should the County experience success in attracting emerging technology industries, demand would likely come from nanotechnology-related industries than from other emerging industry clusters such as biotechnology, advanced materials, renewable energy, and information technology.

Although existing industrial parks are currently sited in the Historic River Town communities due to their proximity to the 9W corridor and the I-87 Thruway, the Greene County Target Industry and Resource Analysis identified industrial development opportunities for the Valley and Mountaintop Towns. Within the Valley subregion, potential industrial development could be sited in the

7. Industrial Sites and Facilities

Cairo/Greenville/Durham areas and along the Route 23, 32 and 145 corridors. The type of industrial development suitable for the Valley subregion would be business/office park settings that are lower-impact and lower-traffic in character, and would mainly be small to mid-size operations.

Any type of commercial and industrial development in the Mountaintop subregion will have to be of smaller scale and have smaller footprints of around 5,000 to 10,000 square feet due to limitations on flatter, developable land and the mountainous terrain of the region. The use of green technology is also recommended in keeping with the character of the Mountaintop Towns. Such development could be located in the communities of Windham and Hunter where water and sewer infrastructure exists. The NYC Watershed regulations also limit the type of development to those that would not in any way be a threat to drinking water. These regulations are discussed in the Land Use chapter of the Greene County Comprehensive Economic Development Plan. The following matrix summarizes the industrial development opportunities for the three subregions.

7. Industrial Sites and Facilities

Business and Industrial Development Opportunities by Subregion			
	Historic River Towns	Valley Towns	Mountaintop Towns
Tier I: Warehousing	Should need arise & labor force is available, additional parcels could be identified for warehousing & distribution.	Possible along the Catskill to Cairo corridor; need to modify zoning; Route 23 & Route 145 corridors.	Not suitable due to terrain; possibly small-scale for storage to support other uses.
Tier III: Traditional Manufacturing Operations	Mid- to large-size operations (25,000 - 50,000 SF with 50-300 employees).	Small- to mid-size operations (5,000 - 50,000 SF with 10-100 employees).	Small operations (2,000 – 5,000 SF with 5-10 employees).
Tier III: Advanced Manufacturing Operations	Mid-size operations (25,000 - 50,000 SF with 50-100 employees)	Small- to mid-size operations (5,000 - 25,000 SF with 10-50 employees).	Small operations (2,000 – 5,000 SF with 5-10 employees).
Tier IV: Emerging Technologies	Mid- to large-size operations (25,000 - 100,000 SF with 50-200 employees).	Small- to mid-size operations (5,000 - 25,000 SF with 10-50 employees).	Small operations (2,000 – 5,000 SF with 5-10 employees).
Tier V: Technical/Professional Services and Financial Services	Park dedicated to office.	Small- to mid-size operations (5,000 - 25,000 SF for 25-125 employees).	Small operations (2,000 – 5,000 SF for 10-25 employees).

FOOD PROCESSING								
Considerations	Target Industry Requirements		Build Now-NY Site Criteria	Existing Business/ Industrial Parks				
				Kalkberg Commerce Park	Greene Business & Tech Park	Hudson Valley Business Park	Athens Industrial Park	Catskill Industrial Park
	<5 Employees	10 – 25 Employees	Light Industrial					
Total Empire Zone				728		100	167	265
Developable within EZ				432		53	82	160
Total Acreage			10 acres min.	62	105			
Total Available within Industrial Site				16	21			
Location				T. New Baltimore & Coxsackie	T. Coxsackie	T. Coxsackie	T. Athens	T. & V. Catskill
Ownership				Greene County IDA	Greene County IDA	Private/ Greene County IDA	Private	Private
Empire Zone Benefits				Application Approved	Application Approved	Application Approved	Application Approved	Application Approved
Zoning			Must be zoned Light Industrial	Commercial/ Industrial	Commercial/ Industrial	Industrial; Town Comprehensive Plan in process	Partly zoned Industrial, Commercial & Residential	Partly zoned Industrial, Commercial & Rural Residential
Current Target Markets				Larger Development 200,000 – 300,000 SF; Technology; Light Manufacturing; Commercial; Back Office; Data Center; Retail	Technology; Light Manufacturing; Commercial; Back Office; Data Center; Retail	Small-scale devt. <50,000 SF; Professional; Light Manufacturing; Data Center; Back Office	Commercial; Light Industrial; Small Warehousing/ Distribution; Back Office	Commercial; Light Industrial; Manufacturing; Mixed-use Small Warehousing/ Distribution
Shovel Ready				Y	Y	N	N	N
Site Options								
Stand-Alone Site		Y						
Industrial Park	Y	Y		Y (mix)	Y (mix)	Y (mix)	Y	Y
Office Park				Y (mix)	Y (mix)	Y (mix)		

FOOD PROCESSING								
				Existing Business/ Industrial Parks				
Considerations	**Target Industry Requirements**		**Build Now-NY Site Criteria**	**Kalkberg Commerce Park**	**Greene Business & Tech Park**	**Hudson Valley Business Park**	**Athens Industrial Park**	**Catskill Industrial Park**
Facility Options								
Industrial Building	1,500 – 5,000 SF	10,000 – 15,000 SF		BTS	BTS	BTS	84,000 SF 24,520 SF	BTS
Office Building				BTS	BTS	BTS		
Rehab Space	Only if certified for food handling	Only if certified for food handling		NA	NA	NA	NA	NA
Work from Home			NA	NA	NA	NA	NA	NA
Utilities								
Water	Y	Y	20,000 – 50,000 GPD, capable of processing 4,000 GPD potable water	1.8 Million GPD	1.8 Million GPD	10" line/ 800,000 GPD excess capacity	1.8 Million GPD	Capacity Unknown
Sewer	Y	Y	20,000 – 40,000 GPD	1.2 Million GPD	1.2 Million GPD	3" forced main/ 600,000 GPD excess capacity	On-site septic systems	Unknown
Telecom/Internet	Y	Y	T-1 desirable	T-1 State Tel	T-1 State Tel	Fiber to site/ DSL at site/ T1 & DA-3 at site	Fiber backbone available along I-87 & Conrail line; T-1 available on need basis	Fiber backbone available along I-87 & Conrail line; T-1 available on need basis
Gas	Y	Y	50,000 therms or 5,000 mcf/mo.	Y (on-site) Capacity Unknown	Y (on-site) Capacity Unknown	Gas/Main distribution line to site/ needs to be downsized w/ station	Y Capacity Unknown	Y Capacity Unknown
Power	Y	Y	5,500 KW peak demand; 3.0 million	13,200 kVa	13,200 kVa	13,200 kVa	Y Capacity Unknown	Y Capacity Unknown

FOOD PROCESSING								
Considerations	**Target Industry Requirements**		**Build Now-NY Site Criteria**	**Existing Business/ Industrial Parks**				
				Kalkberg Commerce Park	**Greene Business & Tech Park**	**Hudson Valley Business Park**	**Athens Industrial Park**	**Catskill Industrial Park**
			KWH/mo.					
Transportation								
Interstate	Access to courier service	Within 10 miles	Within 20 miles of Interstate	Y 0.5 mile to I-87 State Route 9W	Y 0.5 mile to I-87 State Route 9W	Y 2.3 miles from Exit 21B, I-87	Y 3.4 miles from Exit 21, I-87	Y 2 miles from Exit 21, I-87
Rail			Rail access not required but desirable	Y Adjacent to Rail	Y Adjacent to Rail	Y Adjacent to Rail	Y Direct Access	Y Direct Access
Air			Should be within 1.5 hour-drive of airport	40 min. from Albany International Airport	40 min. from Albany International Airport	40 min. from Albany International Airport	48 min. from Albany International Airport	48 min. from Albany International Airport
Other								
Stormwater				Stormwater & Retention plan in place	Stormwater & Retention plan in place	Stormwater Plan needed	Stormwater Plan needed	Stormwater Plan needed
SEQRA				Completed	Completed	Required	Required	Required
Wetlands			Outside 100-year FEMA Floodplain	Wetland Mitigation Strategy Completed	Wetland Mitigation Strategy Completed	Confirm wetlands; Prepare Wetlands Mitigation Plan (if applicable)	Confirm wetlands; Prepare Wetlands Mitigation Plan (if applicable)	Confirm wetlands; Prepare Wetlands Mitigation Plan (if applicable)
Habitat				Habitat Mitigation Strategy Completed	Habitat Mitigation Strategy Completed	Confirm Endangered Species w/ NYSDEC	Confirm Endangered Species w/ NYSDEC	Confirm Endangered Species w/ NYSDEC
Existing Tenants				Serta/National Bedding	Save-a-Lot Distribution Center; Bank of Greene County	Dynabil (aerospace); Brockway-Smith Co. (window mfg)	Northeast Treaters (pressure treating lumber)	Casings, Inc. (tire recycling)

PRINTING & RELATED SUPPORT OPERATIONS

Considerations	Target Industry Requirements		Build Now-NY Site Criteria	Existing Business/ Industrial Parks				
				Kalkberg Commerce Park	Greene Business & Tech Park	Hudson Valley Business Park	Athens Industrial Park	Catskill Industrial Park
	<5 Employees	10 – 25 Employees	Light Industrial					
Total Empire Zone				728		100	167	265
Developable within EZ				432		53	82	160
Total Acreage			10 acres min.	62	105			
Total Available within Industrial Site				16	21			
Location				T. New Baltimore & Coxsackie	T. Coxsackie	T. Coxsackie	T. Athens	T. & V. Catskill
Ownership				Greene County IDA	Greene County IDA	Private/ Greene County IDA	Private	Private
Empire Zone Benefits				Application Approved	Application Approved	Application Approved	Application Approved	Application Approved
Zoning			Must be zoned Light Industrial	Commercial/ Industrial	Commercial/ Industrial	Industrial; Town Comprehensive Plan in process	Partly zoned Industrial, Commercial & Residential	Partly zoned Industrial, Commercial & Rural Residential
Target Markets				Larger Development 200,000 – 300,000 SF; Technology; Light Manufacturing; Commercial; Back Office; Data Center; Retail	Technology; Light Manufacturing; Commercial; Back Office; Data Center; Retail	Small-scale devt. <50,000 SF; Professional; Light Manufacturing; Data Center; Back Office	Commercial; Light Industrial; Small Warehousing/ Distribution; Back Office	Commercial; Light Industrial; Manufacturing; Mixed-use Small Warehousing/ Distribution
Shovel Ready				Y	Y	N	N	N
Site Options								
Stand-Alone Site		Y						
Industrial Park	Y	Y		Y (mix)	Y (mix)	Y (mix)	Y	Y

PRINTING & RELATED SUPPORT OPERATIONS								
Considerations	Target Industry Requirements		Build Now-NY Site Criteria	Existing Business/ Industrial Parks				
				Kalkberg Commerce Park	Greene Business & Tech Park	Hudson Valley Business Park	Athens Industrial Park	Catskill Industrial Park
Office Park	Y	Y		Y (mix)	Y (mix)	Y (mix)		
Facility Options								
Industrial Building	1,500 – 2,500 SF	10,000 – 20,000 SF		BTS	BTS	BTS	84,000 SF 24,520 SF	BTS
Office Building				BTS	BTS	BTS		
Rehab Space	Make sure of floor loading capacity for equipment	Make sure of floor loading capacity for equipment		NA	NA	NA	NA	NA
Work from Home	NA	NA	NA	NA	NA	NA	NA	NA
Utilities								
Water	Y	Y	20,000 – 50,000 GPD, capable of processing 4,000 GPD potable water	1.8 Million GPD	1.8 Million GPD	10" line/ 800,000 GPD excess capacity	1.8 Million GPD	Capacity Unknown
Sewer	Y	Y	20,000 – 40,000 GPD	1.2 Million GPD	1.2 Million GPD	3" forced main/ 600,000 GPD excess capacity	On-site septic systems	Unknown
Telecom/Internet	Y	Y	T-1 desirable	T-1 State Tel	T-1 State Tel	Fiber to site/ DSL at site/ T1 & DA-3 at site	Fiber backbone available along I-87 & Conrail line; T-1 available on need basis	Fiber backbone available along I-87 & Conrail line; T-1 available on need basis
Gas	Y	Y	50,000 therms or 5,000 mcf/mo.	Y (on-site) Capacity Unknown	Y (on-site) Capacity Unknown	Gas/Main distribution line to site/ needs to be downsized w/ station	Y Capacity Unknown	Y Capacity Unknown
Power	Y	Y	5,500 KW peak	13,200 kVa	13,200 kVa	13,200 kVa	Y	Y

PRINTING & RELATED SUPPORT OPERATIONS								
				Existing Business/ Industrial Parks				
Considerations	**Target Industry Requirements**		**Build Now-NY Site Criteria**	**Kalkberg Commerce Park**	**Greene Business & Tech Park**	**Hudson Valley Business Park**	**Athens Industrial Park**	**Catskill Industrial Park**
			demand; 3.0 million KWH/mo.				Capacity Unknown	Capacity Unknown
Transportation								
Interstate	Access to courier service	Within 10 miles	Within 20 miles of Interstate	Y 0.5 mile to I-87 State Route 9W	Y 0.5 mile to I-87 State Route 9W	Y 2.3 miles from Exit 21B, I-87	Y 3.4 miles from Exit 21, I-87	Y 2 miles from Exit 21, I-87
Rail			Rail access not required but desirable	Y Adjacent to Rail	Y Adjacent to Rail	Y Adjacent to Rail	Y Direct Access	Y Direct Access
Air			Should be within 1.5 hour-drive of airport	30 min. from Albany International Airport	30 min. from Albany International Airport	30 min. from Albany International Airport	38 min. from Albany International Airport	38 min. from Albany International Airport
Other								
Stormwater				Stormwater & Retention plan in place	Stormwater & Retention plan in place	Stormwater Plan needed	Stormwater Plan needed	Stormwater Plan needed
SEQRA				Completed	Completed	Required	Required	Required
Wetlands			Outside 100-year FEMA Floodplain	Wetland Mitigation Strategy Completed	Wetland Mitigation Strategy Completed	Confirm wetlands; Prepare Wetlands Mitigation Plan (if applicable)	Confirm wetlands; Prepare Wetlands Mitigation Plan (if applicable)	Confirm wetlands; Prepare Wetlands Mitigation Plan (if applicable)
Habitat				Habitat Mitigation Strategy Completed	Habitat Mitigation Strategy Completed	Confirm Endangered Species w/ NYSDEC	Confirm Endangered Species w/ NYSDEC	Confirm Endangered Species w/ NYSDEC
Existing Tenants				Serta/National Bedding	Save-a-Lot Distribution Center; Bank of Greene County	Dynabil (aerospace); Brockway-Smith Co. (window mfg)	Northeast Treaters (pressure treating lumber)	Casings, Inc. (tire recycling)

PLASTICS & RUBBER: MOLDING OF PLASTIC & RUBBER PARTS, COMPONENTS & FINAL PRODUCTS

Considerations	Target Industry Requirements		Build Now-NY Site Criteria	Existing Business/ Industrial Parks				
				Kalkberg Commerce Park	Greene Business & Tech Park	Hudson Valley Business Park	Athens Industrial Park	Catskill Industrial Park
	5 - 10 Employees	25 – 50+ Employees	Light Industrial					
Total Empire Zone				728		100	167	265
Developable within EZ				432		53	82	160
Total Acreage			10 acres min.	62	105			
Total Available within Industrial Site				16	21			
Location				T. New Baltimore & Coxsackie	T. Coxsackie	T. Coxsackie	T. Athens	
Ownership				Greene County IDA	Greene County IDA	Private/ Greene County IDA	Private	
Empire Zone Benefits				Application Approved	Application Approved	Application Approved	Application Approved	
Zoning			Must be zoned Light Industrial	Commercial/ Industrial	Commercial/ Industrial	Industrial; Town Comprehensive Plan in process	Partly zoned Industrial, Commercial & Residential	
Target Markets				Larger Development 200,000 – 300,000 SF; Technology; Light Manufacturing; Commercial; Back Office; Data Center; Retail	Technology; Light Manufacturing; Commercial; Back Office; Data Center; Retail	Small-scale devt. <50,000 SF; Professional; Light Manufacturing; Data Center; Back Office	Commercial; Light Industrial; Small Warehousing/ Distribution; Back Office	
Shovel Ready				Y	Y	N	N	
Site Options								
Stand-Alone Site		Y						
Industrial Park	Y	Y		Y (mix)	Y (mix)	Y (mix)	Y	Y
Office Park				Y (mix)	Y (mix)	Y (mix)		

PLASTICS & RUBBER: MOLDING OF PLASTIC & RUBBER PARTS, COMPONENTS & FINAL PRODUCTS								
Considerations	**Target Industry Requirements**		**Build Now-NY Site Criteria**	**Existing Business/ Industrial Parks**				
				Kalkberg Commerce Park	**Greene Business & Tech Park**	**Hudson Valley Business Park**	**Athens Industrial Park**	**Catskill Industrial Park**
Facility Options								
Industrial Building	2,500 – 5,000 SF	10,000 – 25,000 SF		BTS	BTS	BTS	84,000 SF 24,520 SF	BTS
Office Building				BTS	BTS	BTS		
Rehab Space	Make sure of floor loading capacity for equipment	Make sure of floor loading capacity for equipment		NA	NA	NA	NA	NA
Work from Home	NA	NA	NA	NA	NA	NA	NA	NA
Utilities								
Water	Y	Y	20,000 – 50,000 GPD, capable of processing 4,000 GPD potable water	1.8 Million GPD	1.8 Million GPD	10" line/ 800,000 GPD excess capacity	1.8 Million GPD	Capacity Unknown
Sewer	Y	Y	20,000 – 40,000 GPD	1.2 Million GPD	1.2 Million GPD	3" forced main/ 600,000 GPD excess capacity	On-site septic systems	Unknown
Telecom/Internet	Y	Y	T-1 desirable	T-1 State Tel	T-1 State Tel	Fiber to site/ DSL at site/ T1 & DA-3 at site	Fiber backbone available along I-87 & Conrail line; T-1 available on need basis	Fiber backbone available along I-87 & Conrail line; T-1 available on need basis
Gas	Y	Y	50,000 therms or 5,000 mcf/mo.	Y (on-site) Capacity Unknown	Y (on-site) Capacity Unknown	Gas/Main distribution line to site/ needs to be downsized w/ station	Y Capacity Unknown	Y Capacity Unknown
Power	Y	Y	5,500 KW peak demand;	13,200 kVa	13,200 kVa	13,200 kVa	Y Capacity	Y Capacity

PLASTICS & RUBBER: MOLDING OF PLASTIC & RUBBER PARTS, COMPONENTS & FINAL PRODUCTS

Considerations	Target Industry Requirements		Build Now-NY Site Criteria	Existing Business/ Industrial Parks				
				Kalkberg Commerce Park	Greene Business & Tech Park	Hudson Valley Business Park	Athens Industrial Park	Catskill Industrial Park
			3.0 million KWH/mo.				Unknown	Unknown
Transportation								
Interstate	Within 10 miles	Within 10 miles	Within 20 miles of Interstate	Y 0.5 mile to I-87 State Route 9W	Y 0.5 mile to I-87 State Route 9W	Y 2.3 miles from Exit 21B, I-87	Y 3.4 miles from Exit 21, I-87	Y 2 miles from Exit 21, I-87
Rail		Y For raw material transport	Rail access not required but desirable	Y Adjacent to Rail	Y Adjacent to Rail	Y Adjacent to Rail	Y Direct Access	Y Direct Access
Air			Should be within 1.5 hour-drive of airport	30 min. from Albany International Airport	30 min. from Albany International Airport	30 min. from Albany International Airport	38 min. from Albany International Airport	38 min. from Albany International Airport
Other								
Stormwater				Stormwater & Retention plan in place	Stormwater & Retention plan in place	Stormwater Plan needed	Stormwater Plan needed	Stormwater Plan needed
SEQRA				Completed	Completed	Required	Required	Required
Wetlands			Outside 100-year FEMA Floodplain	Wetland Mitigation Strategy Completed	Wetland Mitigation Strategy Completed	Confirm wetlands; Prepare Wetlands Mitigation Plan (if applicable)	Confirm wetlands; Prepare Wetlands Mitigation Plan (if applicable)	Confirm wetlands; Prepare Wetlands Mitigation Plan (if applicable)
Habitat				Habitat Mitigation Strategy Completed	Habitat Mitigation Strategy Completed	Confirm Endangered Species w/ NYSDEC	Confirm Endangered Species w/ NYSDEC	Confirm Endangered Species w/ NYSDEC
Existing Tenants				Serta/National Bedding	Save-a-Lot Distribution Center; Bank of Greene County	Dynabil (aerospace); Brockway-Smith Co. (window mfg)	Northeast Treaters (pressure treating lumber)	Casings, Inc. (tire recycling)

FABRICATED METALS & MACHINERY: PRODUCTS PRODUCED FROM THE FORMING, MACHINING & FINISHING OF METALS								
				Existing Business/ Industrial Parks				
Considerations	**Target Industry Requirements**		**Build Now-NY Site Criteria**	**Kalkberg Commerce Park**	**Greene Business & Tech Park**	**Hudson Valley Business Park**	**Athens Industrial Park**	**Catskill Industrial Park**
	<5 Employees	**20 – 50+ Employees**	Light Industrial					
Total Empire Zone				728		100	167	265
Developable within EZ				432		53	82	160
Total Acreage			10 acres min.	62	105			
Total Available within Industrial Site				16	21			
Location				T. New Baltimore & Coxsackie	T. Coxsackie	T. Coxsackie	T. Athens	T. & V. Catskill
Ownership				Greene County IDA	Greene County IDA	Private/ Greene County IDA	Private	Private
Empire Zone Benefits				Application Approved	Application Approved	Application Approved	Application Approved	Application Approved
Zoning			Must be zoned Light Industrial	Commercial/ Industrial	Commercial/ Industrial	Industrial; Town Comprehensive Plan in process	Partly zoned Industrial, Commercial & Residential	Partly zoned Industrial, Commercial & Rural Residential
Target Markets				Larger Development 200,000 – 300,000 SF; Technology; Light Manufacturing; Commercial; Back Office; Data Center; Retail	Technology; Light Manufacturing; Commercial; Back Office; Data Center; Retail	Small-scale devt. <50,000 SF; Professional; Light Manufacturing; Data Center; Back Office	Commercial; Light Industrial; Small Warehousing/ Distribution; Back Office	Commercial; Light Industrial; Manufacturing; Mixed-use Small Warehousing/ Distribution
Shovel Ready				Y	Y	N	N	N
Site Options								
Stand-Alone Site								
Industrial Park	Y	Y		Y (mix)	Y (mix)	Y (mix)	Y	Y
Office Park				Y (mix)	Y (mix)	Y (mix)		

FABRICATED METALS & MACHINERY: PRODUCTS PRODUCED FROM THE FORMING, MACHINING & FINISHING OF METALS								
Considerations	Target Industry Requirements		Build Now-NY Site Criteria	Existing Business/ Industrial Parks				
				Kalkberg Commerce Park	Greene Business & Tech Park	Hudson Valley Business Park	Athens Industrial Park	Catskill Industrial Park
Facility Options								
Industrial Building	2,500 – 5,000 SF	10,000 – 25,000 SF		BTS	BTS	BTS	84,000 SF 24,520 SF	BTS
Office Building				BTS	BTS	BTS		
Rehab Space	Make sure of floor loading capacity for equipment	Make sure of floor loading capacity for equipment		NA	NA	NA	NA	NA
Work from Home	NA	NA	NA	NA	NA	NA	NA	NA
Utilities								
Water	Y	Y	20,000 – 50,000 GPD, capable of processing 4,000 GPD potable water	1.8 Million GPD	1.8 Million GPD	10" line/ 800,000 GPD excess capacity	1.8 Million GPD	Capacity Unknown
Sewer	Y	Y	20,000 – 40,000 GPD	1.2 Million GPD	1.2 Million GPD	3" forced main/ 600,000 GPD excess capacity	On-site septic systems	Unknown
Telecom/Internet	Y	Y	T-1 desirable	T-1 State Tel	T-1 State Tel	Fiber to site/ DSL at site/ T1 & DA-3 at site	Fiber backbone available along I-87 & Conrail line; T-1 available on need basis	Fiber backbone available along I-87 & Conrail line; T-1 available on need basis
Gas	Y (Optional)	Y (Optional)	50,000 therms or 5,000 mcf/mo.	Y (on-site) Capacity Unknown	Y (on-site) Capacity Unknown	Gas/Main distribution line to site/ needs to be downsized w/ station	Y Capacity Unknown	Y Capacity Unknown
Power	Y	Y	5,500 KW peak demand;	13,200 kVa	13,200 kVa	13,200 kVa	Y Capacity	Y Capacity

FABRICATED METALS & MACHINERY: PRODUCTS PRODUCED FROM THE FORMING, MACHINING & FINISHING OF METALS

Considerations	Target Industry Requirements		Build Now-NY Site Criteria	Existing Business/ Industrial Parks				
				Kalkberg Commerce Park	Greene Business & Tech Park	Hudson Valley Business Park	Athens Industrial Park	Catskill Industrial Park
			3.0 million KWH/mo.				Unknown	Unknown
Transportation								
Interstate	Within 10 miles	Within 5 miles	Within 20 miles of Interstate	Y 0.5 mile to I-87 State Route 9W	Y 0.5 mile to I-87 State Route 9W	Y 2.3 miles from Exit 21B, I-87	Y 3.4 miles from Exit 21, I-87	Y 2 miles from Exit 21, I-87
Rail		Y For raw material transport	Rail access not required but desirable	Y Adjacent to Rail	Y Adjacent to Rail	Y Adjacent to Rail	Y Direct Access	Y Direct Access
Air			Should be within 1.5 hour-drive of airport	30 min. from Albany International Airport	30 min. from Albany International Airport	30 min. from Albany International Airport	38 min. from Albany International Airport	38 min. from Albany International Airport
Other								
Stormwater				Stormwater & Retention plan in place	Stormwater & Retention plan in place	Stormwater Plan needed	Stormwater Plan needed	Stormwater Plan needed
SEQRA				Completed	Completed	Required	Required	Required
Wetlands			Outside 100-year FEMA Floodplain	Wetland Mitigation Strategy Completed	Wetland Mitigation Strategy Completed	Confirm wetlands; Prepare Wetlands Mitigation Plan (if applicable)	Confirm wetlands; Prepare Wetlands Mitigation Plan (if applicable)	Confirm wetlands; Prepare Wetlands Mitigation Plan (if applicable)
Habitat				Habitat Mitigation Strategy Completed	Habitat Mitigation Strategy Completed	Confirm Endangered Species w/ NYSDEC	Confirm Endangered Species w/ NYSDEC	Confirm Endangered Species w/ NYSDEC
Existing Tenants				Serta/National Bedding	Save-a-Lot Distribution Center; Bank of Greene County	Dynabil (aerospace); Brockway-Smith Co. (window mfg)	Northeast Treaters (pressure treating lumber)	Casings, Inc. (tire recycling)

ELECTRONIC COMPONENTS & EQUIPMENT: PRODUCTION OF SENSORS, COMPONENTS, SUBASSEMBLIES & FINISHED EQUIPMENT								
Considerations	**Target Industry Requirements**		**Build Now-NY Site Criteria**	**Existing Business/ Industrial Parks**				
				Kalkberg Commerce Park	**Greene Business & Tech Park**	**Hudson Valley Business Park**	**Athens Industrial Park**	**Catskill Industrial Park**
	<5 Employees	**20 – 50+ Employees**	Light Industrial					
Total Empire Zone				728		100	167	265
Developable within EZ				432		53	82	160
Total Acreage			10 acres min.	62	105			
Total Available within Industrial Site				16	21			
Location				T. New Baltimore & Coxsackie	T. Coxsackie	T. Coxsackie	T. Athens	
Ownership				Greene County IDA	Greene County IDA	Private/ Greene County IDA	Private	
Empire Zone Benefits				Application Approved	Application Approved	Application Approved	Application Approved	
Zoning			Must be zoned Light Industrial	Commercial/ Industrial	Commercial/ Industrial	Industrial; Town Comprehensive Plan in process	Partly zoned Industrial, Commercial & Residential	
Target Markets				Larger Development 200,000 – 300,000 SF; Technology; Light Manufacturing; Commercial; Back Office; Data Center; Retail	Technology; Light Manufacturing; Commercial; Back Office; Data Center; Retail	Small-scale devt. <50,000 SF; Professional; Light Manufacturing; Data Center; Back Office	Commercial; Light Industrial; Small Warehousing/ Distribution; Back Office	
Shovel Ready				Y	Y	N	N	N
Site Options								
Stand-Alone Site								
Industrial Park	Y	Y		Y (mix)	Y (mix)	Y (mix)	Y	Y

ELECTRONIC COMPONENTS & EQUIPMENT: PRODUCTION OF SENSORS, COMPONENTS, SUBASSEMBLIES & FINISHED EQUIPMENT								
Considerations	Target Industry Requirements		Build Now-NY Site Criteria	Existing Business/ Industrial Parks				
				Kalkberg Commerce Park	Greene Business & Tech Park	Hudson Valley Business Park	Athens Industrial Park	Catskill Industrial Park
Office Park				Y (mix)	Y (mix)	Y (mix)		
Facility Options								
Industrial Building	2,500 – 5,000 SF	10,000 – 25,000 SF		BTS	BTS	BTS	84,000 SF 24,520 SF	BTS
Office Building				BTS	BTS	BTS		
Rehab Space	Y	Y		NA	NA	NA	NA	NA
Work from Home	NA	NA	NA	NA	NA	NA	NA	NA
Utilities								
Water	Y	Y	20,000 – 50,000 GPD, capable of processing 4,000 GPD potable water	1.8 Million GPD	1.8 Million GPD	10" line/ 800,000 GPD excess capacity	1.8 Million GPD	Capacity Unknown
Sewer	Y	Y	20,000 – 40,000 GPD	1.2 Million GPD	1.2 Million GPD	3" forced main/ 600,000 GPD excess capacity	On-site septic systems	Unknown
Telecom/Internet	Y	Y	T-1 desirable	T-1 State Tel	T-1 State Tel	Fiber to site/ DSL at site/ T1 & DA-3 at site	Fiber backbone available along I-87 & Conrail line; T-1 available on need basis	Fiber backbone available along I-87 & Conrail line; T-1 available on need basis
Gas			50,000 therms or 5,000 mcf/mo.	Y (on-site) Capacity Unknown	Y (on-site) Capacity Unknown	Gas/Main distribution line to site/ needs to be downsized w/ station	Y Capacity Unknown	Y Capacity Unknown
Power	Y	Y	5,500 KW peak demand; 3.0 million KWH/mo.	13,200 kVa	13,200 kVa	13,200 kVa	Y Capacity Unknown	Y Capacity Unknown
Transportation								

ELECTRONIC COMPONENTS & EQUIPMENT: PRODUCTION OF SENSORS, COMPONENTS, SUBASSEMBLIES & FINISHED EQUIPMENT								
Considerations	**Target Industry Requirements**		**Build Now-NY Site Criteria**	**Existing Business/ Industrial Parks**				
				Kalkberg Commerce Park	**Greene Business & Tech Park**	**Hudson Valley Business Park**	**Athens Industrial Park**	**Catskill Industrial Park**
Interstate	Within 10 miles	Within 5 miles	Within 20 miles of Interstate	Y 0.5 mile to I-87 State Route 9W	Y 0.5 mile to I-87 State Route 9W	Y 2.3 miles from Exit 21B, I-87	Y 3.4 miles from Exit 21, I-87	Y 2 miles from Exit 21, I-87
Rail			Rail access not required but desirable	Y Adjacent to Rail	Y Adjacent to Rail	Y Adjacent to Rail	Y Direct Access	Y Direct Access
Air			Should be within 1.5 hour-drive of airport	30 min. from Albany International Airport	30 min. from Albany International Airport	30 min. from Albany International Airport	38 min. from Albany International Airport	38 min. from Albany International Airport
Other								
Stormwater				Stormwater & Retention plan in place	Stormwater & Retention plan in place	Stormwater Plan needed	Stormwater Plan needed	Stormwater Plan needed
SEQRA				Completed	Completed	Required	Required	Required
Wetlands			Outside 100-year FEMA Floodplain	Wetland Mitigation Strategy Completed	Wetland Mitigation Strategy Completed	Confirm wetlands; Prepare Wetlands Mitigation Plan (if applicable)	Confirm wetlands; Prepare Wetlands Mitigation Plan (if applicable)	Confirm wetlands; Prepare Wetlands Mitigation Plan (if applicable)
Habitat				Habitat Mitigation Strategy Completed	Habitat Mitigation Strategy Completed	Confirm Endangered Species w/ NYSDEC	Confirm Endangered Species w/ NYSDEC	Confirm Endangered Species w/ NYSDEC
Existing Tenants				Serta/National Bedding	Save-a-Lot Distribution Center; Bank of Greene County	Dynabil (aerospace); Brockway-Smith Co. (window mfg)	Northeast Treaters (pressure treating lumber)	Casings, Inc. (tire recycling)

MEDICAL DEVICES: PRODUCTION OF INSTRUMENTS, DEVICES & SUPPLIES								
Considerations	Target Industry Requirements		Build Now-NY Site Criteria	Existing Business/ Industrial Parks				
				Kalkberg Commerce Park	Greene Business & Tech Park	Hudson Valley Business Park	Athens Industrial Park	Catskill Industrial Park
	<5 Employees	20 – 50+ Employees	Light Industrial					
Total Empire Zone				728		100	167	265
Developable within EZ				432		53	82	160
Total Acreage			10 acres min.	62	105			
Total Available within Industrial Site				16	21			
Location				T. New Baltimore & Coxsackie	T. Coxsackie	T. Coxsackie	T. Athens	
Ownership				Greene County IDA	Greene County IDA	Private/ Greene County IDA	Private	
Empire Zone Benefits				Application Approved	Application Approved	Application Approved	Application Approved	
Zoning			Must be zoned Light Industrial	Commercial/ Industrial	Commercial/ Industrial	Industrial; Town Comprehensive Plan in process	?	
Target Markets				Larger Development 200,000 – 300,000 SF; Technology; Light Manufacturing; Commercial; Back Office; Data Center; Retail	Technology; Light Manufacturing; Commercial; Back Office; Data Center; Retail	Small-scale devt. <50,000 SF; Professional; Light Manufacturing; Data Center; Back Office	Commercial; Light Industrial; Small Warehousing/ Distribution; Back Office	
Shovel Ready				Y	Y	N	N	
Site Options								
Stand-Alone Site								
Industrial Park	Y	Y		Y (mix)	Y (mix)	Y (mix)	Y	Y

MEDICAL DEVICES: PRODUCTION OF INSTRUMENTS, DEVICES & SUPPLIES								
Considerations	**Target Industry Requirements**		**Build Now-NY Site Criteria**	**Existing Business/ Industrial Parks**				
				Kalkberg Commerce Park	**Greene Business & Tech Park**	**Hudson Valley Business Park**	**Athens Industrial Park**	**Catskill Industrial Park**
Office Park				Y (mix)	Y (mix)	Y (mix)		
Facility Options								
Industrial Building	2,500 – 5,000 SF	10,000 – 25,000 SF		BTS	BTS	BTS	84,000 SF 24,520 SF	BTS
Office Building				BTS	BTS	BTS		
Rehab Space	Y	Y		NA	NA	NA	NA	NA
Work from Home	NA	NA	NA	NA	NA	NA	NA	NA
Utilities								
Water	Y	Y	20,000 – 50,000 GPD, capable of processing 4,000 GPD potable water	1.8 Million GPD	1.8 Million GPD	10" line/ 800,000 GPD excess capacity	1.8 Million GPD	Capacity Unknown
Sewer	Y	Y	20,000 – 40,000 GPD	1.2 Million GPD	1.2 Million GPD	3" forced main/ 600,000 GPD excess capacity	On-site septic systems	Unknown
Telecom/Internet	Y	Y	T-1 desirable	T-1 State Tel	T-1 State Tel	Fiber to site/ DSL at site/ T1 & DA-3 at site	Fiber backbone available along I-87 & Conrail line; T-1 available on need basis	Fiber backbone available along I-87 & Conrail line; T-1 available on need basis
Gas	Y (Optional)	Y (Optional)	50,000 therms or 5,000 mcf/mo.	Y (on-site) Capacity Unknown	Y (on-site) Capacity Unknown	Gas/Main distribution line to site/ needs to be downsized w/ station	Y Capacity Unknown	Y Capacity Unknown
Power	Y	Y	5,500 KW peak demand; 3.0 million KWH/mo.	13,200 kVa	13,200 kVa	13,200 kVa	Y Capacity Unknown	Y Capacity Unknown
Transportation								

MEDICAL DEVICES: PRODUCTION OF INSTRUMENTS, DEVICES & SUPPLIES								
				Existing Business/ Industrial Parks				
Considerations	**Target Industry Requirements**		**Build Now-NY Site Criteria**	**Kalkberg Commerce Park**	**Greene Business & Tech Park**	**Hudson Valley Business Park**	**Athens Industrial Park**	**Catskill Industrial Park**
Interstate	Within 10 miles	Within 5 miles	Within 20 miles of Interstate	Y 0.5 mile to I-87 State Route 9W	Y 0.5 mile to I-87 State Route 9W	Y 2.3 miles from Exit 21B, I-87	Y 3.4 miles from Exit 21, I-87	Y 2 miles from Exit 21, I-87
Rail			Rail access not required but desirable	Y Adjacent to Rail	Y Adjacent to Rail	Y Adjacent to Rail	Y Direct Access	Y Direct Access
Air			Should be within 1.5 hour-drive of airport	30 min. from Albany International Airport	30 min. from Albany International Airport	30 min. from Albany International Airport	38 min. from Albany International Airport	38 min. from Albany International Airport
Other								
Stormwater				Stormwater & Retention plan in place	Stormwater & Retention plan in place	Stormwater Plan needed	Stormwater Plan needed	Stormwater Plan needed
SEQRA				Completed	Completed	Required	Required	Required
Wetlands			Outside 100-year FEMA Floodplain	Wetland Mitigation Strategy Completed	Wetland Mitigation Strategy Completed	Confirm wetlands; Prepare Wetlands Mitigation Plan (if applicable)	Confirm wetlands; Prepare Wetlands Mitigation Plan (if applicable)	Confirm wetlands; Prepare Wetlands Mitigation Plan (if applicable)
Habitat				Habitat Mitigation Strategy Completed	Habitat Mitigation Strategy Completed	Confirm Endangered Species w/ NYSDEC	Confirm Endangered Species w/ NYSDEC	Confirm Endangered Species w/ NYSDEC
Existing Tenants				Serta/National Bedding	Save-a-Lot Distribution Center; Bank of Greene County	Dynabil (aerospace); Brockway-Smith Co. (window mfg)	Northeast Treaters (pressure treating lumber)	Casings, Inc. (tire recycling)

WAREHOUSING & STORAGE

Considerations	Target Industry Requirements		Build Now-NY Site Criteria	Existing Business/ Industrial Parks				
				Kalkberg Commerce Park	Greene Business & Tech Park	Hudson Valley Business Park	Athens Industrial Park	Catskill Industrial Park
	75 - 100 Employees	300+ Employees	Warehouse/ Distribution					
Total Empire Zone				728		100	167	265
Developable within EZ				432		53	82	160
Total Acreage			50 acres min.; Could support up to 1.0 million SF building	62	105			
Total Available within Industrial Site				16	21			
Location				T. New Baltimore & Coxsackie	T. Coxsackie	T. Coxsackie	T. Athens	
Ownership				Greene County IDA	Greene County IDA	Private/ Greene County IDA	Private	
Empire Zone Benefits				Application Approved	Application Approved	Application Approved	Application Approved	
Zoning				Commercial/ Industrial	Commercial/ Industrial	Industrial; Town Comprehensive Plan in process	Partly zoned Industrial, Commercial & Residential	
Target Markets				Larger Development 200,000 – 300,000 SF; Technology; Light Manufacturing; Commercial; Back Office; Data Center; Retail	Technology; Light Manufacturing; Commercial; Back Office; Data Center; Retail	Small-scale devt. <50,000 SF; Professional; Light Manufacturing; Data Center; Back Office	Commercial; Light Industrial; Small Warehousing/ Distribution; Back Office	
Shovel Ready				Y	Y	N	N	

WAREHOUSING & STORAGE								
Considerations	Target Industry Requirements		Build Now-NY Site Criteria	Existing Business/ Industrial Parks				
				Kalkberg Commerce Park	Greene Business & Tech Park	Hudson Valley Business Park	Athens Industrial Park	Catskill Industrial Park
Site Options								
Stand-Alone Site								
Industrial Park	Y	Y		Y (mix)	Y (mix)	Y (mix)	Y	Y
Office Park				Y (mix)	Y (mix)	Y (mix)		
Facility Options								
Industrial Building	75,000 – 150,000+ SF	250,000+ SF		BTS	BTS	BTS	84,000 SF 24,520 SF	BTS
Office Building				BTS	BTS	BTS		
Rehab Space	Y	Y		NA	NA	NA	NA	NA
Work from Home	NA	NA	NA	NA	NA	NA	NA	NA
Utilities								
Water	Y	Y	2,500-4,000 gallons/min	1.8 Million GPD	1.8 Million GPD	10" line/ 800,000 GPD excess capacity	1.8 Million GPD	Capacity Unknown
Sewer	Y	Y	20,000 GPD min	1.2 Million GPD	1.2 Million GPD	3" forced main/ 600,000 GPD excess capacity	On-site septic systems	Unknown
Telecom/Internet	Y	Y	T-1 min.	T-1 State Tel	T-1 State Tel	Fiber to site/ DSL at site/ T1 & DA-3 at site	Fiber backbone available along I-87 & Conrail line; T-1 available on need basis	Fiber backbone available along I-87 & Conrail line; T-1 available on need basis
Gas			8,300 CF/Hr. 175,000 Therms/yr. 4-6 inch high pressure line within 3 miles	Y (on-site) Capacity Unknown	Y (on-site) Capacity Unknown	Gas/Main distribution line to site/ needs to be downsized w/ station	Y Capacity Unknown	Y Capacity Unknown
Power	Y	Y	1,350 kW; 1,000,000	13,200 kVa	13,200 kVa	13,200 kVa	Y Capacity Unknown	Y Capacity Unknown

WAREHOUSING & STORAGE								
				Existing Business/ Industrial Parks				
Considerations	**Target Industry Requirements**		**Build Now-NY Site Criteria**	**Kalkberg Commerce Park**	**Greene Business & Tech Park**	**Hudson Valley Business Park**	**Athens Industrial Park**	**Catskill Industrial Park**
			KWH/mo.; 15 kVA line; 3 miles of substation					
Transportation								
Interstate	Within a few miles	Within a few miles	Direct Access to Interstate; within 15 miles of Interchange	Y 0.5 mile to I-87 State Route 9W	Y 0.5 mile to I-87 State Route 9W	Y 2.3 miles from Exit 21B, I-87	Y 3.4 miles from Exit 21, I-87	Y 2 miles from Exit 21, I-87
Rail	Y (Potentially for some operations)	Y (Potentially for some operations)	Access to rail preferable	Y Adjacent to Rail	Y Adjacent to Rail	Y Adjacent to Rail	Y Direct Access	Y Direct Access
Air			Airport within 60 minutes	30 min. from Albany International Airport	30 min. from Albany International Airport	30 min. from Albany International Airport	38 min. from Albany International Airport	38 min. from Albany International Airport
Other								
Stormwater				Stormwater & Retention plan in place	Stormwater & Retention plan in place	Stormwater Plan needed	Stormwater Plan needed	Stormwater Plan needed
SEQRA				Completed	Completed	Required	Required	Required
Wetlands			Outside 100-year FEMA Floodplain	Wetland Mitigation Strategy Completed	Wetland Mitigation Strategy Completed	Confirm wetlands; Prepare Wetlands Mitigation Plan (if applicable)	Confirm wetlands; Prepare Wetlands Mitigation Plan (if applicable)	Confirm wetlands; Prepare Wetlands Mitigation Plan (if applicable)
Habitat				Habitat Mitigation Strategy Completed	Habitat Mitigation Strategy Completed	Confirm Endangered Species w/ NYSDEC	Confirm Endangered Species w/ NYSDEC	Confirm Endangered Species w/ NYSDEC
Existing Tenants				Serta/National Bedding	Save-a-Lot Distribution Center; Bank of Greene	Dynabil (aerospace); Brockway-Smith Co.	Northeast Treaters (pressure treating	Casings, Inc. (tire recycling)

WAREHOUSING & STORAGE								
Considerations	Target Industry Requirements		Build Now-NY Site Criteria	Existing Business/ Industrial Parks				
				Kalkberg Commerce Park	Greene Business & Tech Park	Hudson Valley Business Park	Athens Industrial Park	Catskill Industrial Park
					County	(window mfg)	lumber)	

FINANCIAL SERVICES: BACK OFFICE

Considerations	Target Industry Requirements		Build Now-NY Site Criteria	Existing Business/ Industrial Parks				
				Kalkberg Commerce Park	Greene Business & Tech Park	Hudson Valley Business Park	Athens Industrial Park	Catskill Industrial Park
	50 - 100 Employees	150+ Employees	Office Park/Back Office					
Total Empire Zone				728		100	167	265
Developable within EZ				432		53	82	160
Total Acreage			25 acres min.	62	105			
Total Available within Industrial Site				16	21			
Location				T. New Baltimore & Coxsackie	T. Coxsackie	T. Coxsackie	T. Athens	
Ownership				Greene County IDA	Greene County IDA	Private/ Greene County IDA	Private	
Empire Zone Benefits				Application Approved	Application Approved	Application Approved	Application Approved	
Zoning				Commercial/ Industrial	Commercial/ Industrial	Industrial; Town Comprehensive Plan in process	Partly zoned Industrial, Commercial & Residential	
Target Markets				Larger Development 200,000 – 300,000 SF; Technology; Light Manufacturing; Commercial; Back Office; Data Center; Retail	Technology; Light Manufacturing; Commercial; Back Office; Data Center; Retail	Small-scale devt. <50,000 SF; Professional; Light Manufacturing; Data Center; Back Office	Commercial; Light Industrial; Small Warehousing/ Distribution; Back Office	
Shovel Ready				Y	Y	N	N	
Site Options								
Stand-Alone Site	Y							

FINANCIAL SERVICES: BACK OFFICE								
Considerations	**Target Industry Requirements**		**Build Now-NY Site Criteria**	**Existing Business/ Industrial Parks**				
				Kalkberg Commerce Park	**Greene Business & Tech Park**	**Hudson Valley Business Park**	**Athens Industrial Park**	**Catskill Industrial Park**
Industrial Park				Y (mix)	Y (mix)	Y (mix)	Y	Y
Office Park	Y	Y		Y (mix)	Y (mix)	Y (mix)		
Facility Options								
Industrial Building				BTS	BTS	BTS	84,000 SF 24,520 SF	BTS
Office Building	10,000 - 20,000+ SF	30,000+ SF		BTS	BTS	BTS		
Rehab Space	Y	Y		NA	NA	NA	NA	NA
Work from Home	Y (some selected positions)	Y (some selected positions)		NA	NA	NA	NA	NA
Utilities								
Water	Y	Y	15,000 GPD	1.8 Million GPD	1.8 Million GPD	10" line/ 800,000 GPD excess capacity	1.8 Million GPD	Capacity Unknown
Sewer	Y	Y	15,000 GPD	1.2 Million GPD	1.2 Million GPD	3" forced main/ 600,000 GPD excess capacity	On-site septic systems	Unknown
Telecom/Internet	Y High Capacity	Y High Capacity	Y Fiber SONET ring infra Access to multiple T-1 lines Diverse, redundant, digital electronic Cos/PoPs	T-1 State Tel	T-1 State Tel	Fiber to site/ DSL at site/ T1 & DA-3 at site	Fiber backbone available along I-87 & Conrail line; T-1 available on need basis	Fiber backbone available along I-87 & Conrail line; T-1 available on need basis
Gas			75,000 therms or 7,500 mcf/mo	Y (on-site) Capacity Unknown	Y (on-site) Capacity Unknown	Gas/Main distribution line to site/ needs to be downsized w/ station	Y Capacity Unknown	Y Capacity Unknown

FINANCIAL SERVICES: BACK OFFICE

Considerations	Target Industry Requirements		Build Now-NY Site Criteria	Existing Business/ Industrial Parks				
				Kalkberg Commerce Park	Greene Business & Tech Park	Hudson Valley Business Park	Athens Industrial Park	Catskill Industrial Park
Power	Y	Y	1,500 kW demand 810,000 kWh/mo. Dual service	13,200 kVa	13,200 kVa	13,200 kVa	Y Capacity Unknown	Y Capacity Unknown
Transportation								
Interstate	Within a few miles (For commuters)	Within a few miles (For commuters)	Y Direct Access	Y 0.5 mile to I-87 State Route 9W	Y 0.5 mile to I-87 State Route 9W	Y 2.3 miles from Exit 21B, I-87	Y 3.4 miles from Exit 21, I-87	Y 2 miles from Exit 21, I-87
Rail			Y Direct Access	Y Adjacent to Rail	Y Adjacent to Rail	Y Adjacent to Rail	Y Direct Access	Y Direct Access
Air				30 min. from Albany International Airport	30 min. from Albany International Airport	30 min. from Albany International Airport	38 min. from Albany International Airport	38 min. from Albany International Airport
Other								
Stormwater				Stormwater & Retention plan in place	Stormwater & Retention plan in place	Stormwater Plan needed	Stormwater Plan needed	Stormwater Plan needed
SEQRA				Completed	Completed	Required	Required	Required
Wetlands			Outside 100-year FEMA Floodplain	Wetland Mitigation Strategy Completed	Wetland Mitigation Strategy Completed	Confirm wetlands; Prepare Wetlands Mitigation Plan (if applicable)	Confirm wetlands; Prepare Wetlands Mitigation Plan (if applicable)	Confirm wetlands; Prepare Wetlands Mitigation Plan (if applicable)
Habitat				Habitat Mitigation Strategy Completed	Habitat Mitigation Strategy Completed	Confirm Endangered Species w/ NYSDEC	Confirm Endangered Species w/ NYSDEC	Confirm Endangered Species w/ NYSDEC
Existing Tenants				Serta/National Bedding	Save-a-Lot Distribution Center; Bank of Greene	Dynabil (aerospace); Brockway-Smith Co.	Northeast Treaters (pressure treating	Casings, Inc. (tire recycling)

<table>
<tr><th colspan="9">FINANCIAL SERVICES: BACK OFFICE</th></tr>
<tr><th rowspan="2">Considerations</th><th rowspan="2" colspan="2">Target Industry Requirements</th><th rowspan="2">Build Now-NY Site Criteria</th><th colspan="5">Existing Business/ Industrial Parks</th></tr>
<tr><th>Kalkberg Commerce Park</th><th>Greene Business & Tech Park</th><th>Hudson Valley Business Park</th><th>Athens Industrial Park</th><th>Catskill Industrial Park</th></tr>
<tr><td></td><td></td><td></td><td></td><td></td><td>County</td><td>(window mfg)</td><td>lumber)</td><td></td></tr>
</table>

PROFESSIONAL & TECHNICAL SERVICES									
Considerations	Target Industry Requirements			Build Now-NY Site Criteria	Existing Business/ Industrial Parks				
					Kalkberg Commerce Park	Greene Business & Tech Park	Hudson Valley Business Park	Athens Industrial Park	Catskill Industrial Park
	Individual	5-10 Employees	25+ Employees	Office Park					
Total Empire Zone					728		100	167	265
Developable within EZ					432	53	82	160	
Total Acreage				25 acres min	62	105			
Total Available within Industrial Site					16	21			
Location					T. New Baltimore & Coxsackie	T. Coxsackie	T. Coxsackie	T. Athens	
Ownership					Greene County IDA	Greene County IDA	Private/ Greene County IDA	Private	
Empire Zone Benefits					Application Approved	Application Approved	Application Approved	Application Approved	
Zoning					Commercial/ Industrial	Commercial/ Industrial	Industrial; Town Comprehensive Plan in process	Partly zoned Industrial, Commercial & Residential	
Target Markets					Larger Development 200,000 – 300,000 SF; Technology; Light Manufacturing; Commercial; Back Office; Data Center; Retail	Technology; Light Manufacturing; Commercial; Back Office; Data Center; Retail	Small-scale devt. <50,000 SF; Professional; Light Manufacturing; Data Center; Back Office	Commercial; Light Industrial; Small Warehousing/ Distribution; Back Office	
Shovel Ready					Y	Y	N	N	

PROFESSIONAL & TECHNICAL SERVICES									
Considerations	Target Industry Requirements			Build Now-NY Site Criteria	Existing Business/ Industrial Parks				
					Kalkberg Commerce Park	Greene Business & Tech Park	Hudson Valley Business Park	Athens Industrial Park	Catskill Industrial Park
Site Options									
Stand-Alone Site									
Industrial Park					Y (mix)	Y (mix)	Y (mix)	Y	Y
Office Park	Y	Y	Y		Y (mix)	Y (mix)	Y (mix)		
Facility Options									
Industrial Building					BTS	BTS	BTS	84,000 SF 24,520 SF	BTS
Office Building	500 SF	1,500 – 5,000 SF	7,500+SF		BTS	BTS	BTS		
Rehab Space	Y	Y	Y		NA	NA	NA	NA	NA
Work from Home	Y	Y (some selected positions)	Y (some selected positions)		NA	NA	NA	NA	NA
Utilities									
Water	Y	Y	Y	15,000 GPD	1.8 Million GPD	1.8 Million GPD	10" line/ 800,000 GPD excess capacity	1.8 Million GPD	Capacity Unknown
Sewer	Y	Y	Y	15,000 GPD	1.2 Million GPD	1.2 Million GPD	3" forced main/ 600,000 GPD excess capacity	On-site septic systems	Unknown
Telecom/Internet	DSL	DSL/T1 (for large file transfers)	DSL/T1 (for large file transfers)	Y High Capacity/ proximity to Point of Presence	T-1 State Tel	T-1 State Tel	Fiber to site/ DSL at site/ T1 & DA-3 at site	Fiber backbone available along I-87 & Conrail line; T-1 available on need basis	Fiber backbone available along I-87 & Conrail line; T-1 available on need basis
Gas					Y (on-site) Capacity Unknown	Y (on-site) Capacity Unknown	Gas/Main distribution line to site/ needs to be downsized w/	Y Capacity Unknown	Y Capacity Unknown

PROFESSIONAL & TECHNICAL SERVICES									
Considerations	Target Industry Requirements			Build Now-NY Site Criteria	Existing Business/ Industrial Parks				
					Kalkberg Commerce Park	Greene Business & Tech Park	Hudson Valley Business Park	Athens Industrial Park	Catskill Industrial Park
							station		
Power	Y	Y	Y	1,500 KWH; 810,000 KWH/mo.	13,200 kVa	13,200 kVa	13,200 kVa	Y Capacity Unknown	Y Capacity Unknown
Transportation									
Interstate		Depends on commuter draw	Within a few miles (For commuters)		Y 0.5 mile to I-87 State Route 9W	Y 0.5 mile to I-87 State Route 9W	Y 2.3 miles from Exit 21B, I-87	Y 3.4 miles from Exit 21, I-87	Y 2 miles from Exit 21, I-87
Rail					Y Adjacent to Rail	Y Adjacent to Rail	Y Adjacent to Rail	Y Direct Access	Y Direct Access
Air					30 min. from Albany International Airport	30 min. from Albany International Airport	30 min. from Albany International Airport	38 min. from Albany International Airport	38 min. from Albany International Airport
Other									
Stormwater					Stormwater & Retention plan in place	Stormwater & Retention plan in place	Stormwater Plan needed	Stormwater Plan needed	Stormwater Plan needed
SEQRA					Completed	Completed	Required	Required	Required
Wetlands				Outside 100-year FEMA Floodplain	Wetland Mitigation Strategy Completed	Wetland Mitigation Strategy Completed	Confirm wetlands; Prepare Wetlands Mitigation Plan (if applicable)	Confirm wetlands; Prepare Wetlands Mitigation Plan (if applicable)	Confirm wetlands; Prepare Wetlands Mitigation Plan (if applicable)
Habitat					Habitat Mitigation Strategy Completed	Habitat Mitigation Strategy Completed	Confirm Endangered Species w/ NYSDEC	Confirm Endangered Species w/ NYSDEC	Confirm Endangered Species w/ NYSDEC
Existing Tenants					Serta/National Bedding	Save-a-Lot Distribution	Dynabil (aerospace);	Northeast Treaters	Casings, Inc. (tire

PROFESSIONAL & TECHNICAL SERVICES									
Considerations	Target Industry Requirements			Build Now-NY Site Criteria	Existing Business/ Industrial Parks				
					Kalkberg Commerce Park	Greene Business & Tech Park	Hudson Valley Business Park	Athens Industrial Park	Catskill Industrial Park
						Center; Bank of Greene County	Brockway-Smith Co. (window mfg)	(pressure treating lumber)	recycling)

EMERGING TECHNOLOGIES

Considerations	Target Industry Requirements		Build Now-NY Site Criteria	Existing Business/ Industrial Parks				
				Kalkberg Commerce Park	Greene Business & Tech Park	Hudson Valley Business Park	Athens Industrial Park	Catskill Industrial Park
	5 - 10 Employees	25+ Employees	High-Tech Manufacturing					
Total Empire Zone				728		100	167	265
Developable within EZ				432		53	82	160
Total Acreage			25 acres min.	62	105			
Total Available within Industrial Site				16	21			
Location				T. New Baltimore & Coxsackie	T. Coxsackie	T. Coxsackie	T. Athens	
Ownership				Greene County IDA	Greene County IDA	Private/ Greene County IDA	Private	
Empire Zone Benefits				Application Approved	Application Approved	Application Approved	Application Approved	
Zoning				Commercial/ Industrial	Commercial/ Industrial	Industrial; Town Comprehensive Plan in process	Partly zoned Industrial, Commercial & Residential	
Target Markets				Larger Development 200,000 – 300,000 SF; Technology; Light Manufacturing; Commercial; Back Office; Data Center; Retail	Technology; Light Manufacturing; Commercial; Back Office; Data Center; Retail	Small-scale devt. <50,000 SF; Professional; Light Manufacturing; Data Center; Back Office	Commercial; Light Industrial; Small Warehousing/ Distribution; Back Office	
Shovel Ready				Y	Y	N	N	
Site Options								
Stand-Alone Site								
Industrial Park	Y	Y		Y (mix)	Y (mix)	Y (mix)	Y	Y

EMERGING TECHNOLOGIES								
Considerations	Target Industry Requirements		Build Now-NY Site Criteria	Existing Business/ Industrial Parks				
				Kalkberg Commerce Park	Greene Business & Tech Park	Hudson Valley Business Park	Athens Industrial Park	Catskill Industrial Park
Office Park				Y (mix)	Y (mix)	Y (mix)		
Facility Options								
Industrial Building				BTS	BTS	BTS	84,000 SF 24,520 SF	BTS
Office Building	2,500 – 5,000 SF	12,000+ SF		BTS	BTS	BTS		
Rehab Space	Y	Y		NA	NA	NA	NA	NA
Work from Home				NA	NA	NA	NA	NA
Utilities								
Water	Y	Y	20,000 GPD min.	1.8 Million GPD	1.8 Million GPD	10" line/ 800,000 GPD excess capacity	1.8 Million GPD	Capacity Unknown
Sewer	Y	Y	20,000 GPD min.	1.2 Million GPD	1.2 Million GPD	3" forced main/ 600,000 GPD excess capacity	On-site septic systems	Unknown
Telecom/Internet	Y	Y	T-1 min.	T-1 State Tel	T-1 State Tel	Fiber to site/ DSL at site/ T1 & DA-3 at site	Fiber backbone available along I-87 & Conrail line; T-1 available on need basis	Fiber backbone available along I-87 & Conrail line; T-1 available on need basis
Gas	Optional	Optional	Optional Demand: 9,300 CF/Hr. 194,000 therms/yr.	Y (on-site) Capacity Unknown	Y (on-site) Capacity Unknown	Gas/Main distribution line to site/ needs to be downsized w/ station	Y Capacity Unknown	Y Capacity Unknown
Power	Y	Y	6,750 kW demand; within 3 miles of substation; 7,500 kVA	13,200 kVa	13,200 kVa	13,200 kVa	Y Capacity Unknown	Y Capacity Unknown
Transportation								

EMERGING TECHNOLOGIES								
				Existing Business/ Industrial Parks				
Considerations	**Target Industry Requirements**		**Build Now-NY Site Criteria**	**Kalkberg Commerce Park**	**Greene Business & Tech Park**	**Hudson Valley Business Park**	**Athens Industrial Park**	**Catskill Industrial Park**
Interstate	Y Within a few miles (For commuters)	Y Within a few miles (For commuters)	Y Within 20 miles of Interchange; 5 miles of 4-lane highway.	Y 0.5 mile to I-87 State Route 9W	Y 0.5 mile to I-87 State Route 9W	Y 2.3 miles from Exit 21B, I-87	Y 3.4 miles from Exit 21, I-87	Y 2 miles from Exit 21, I-87
Rail			Y Desirable	Y Adjacent to Rail	Y Adjacent to Rail	Y Adjacent to Rail	Y Direct Access	Y Direct Access
Air			60 min. to airport	30 min. from Albany International Airport	30 min. from Albany International Airport	30 min. from Albany International Airport	38 min. from Albany International Airport	38 min. from Albany International Airport
Other								
Stormwater				Stormwater & Retention plan in place	Stormwater & Retention plan in place	Stormwater Plan needed	Stormwater Plan needed	Stormwater Plan needed
SEQRA				Completed	Completed	Required	Required	Required
Wetlands			Outside 100-year FEMA Floodplain	Wetland Mitigation Strategy Completed	Wetland Mitigation Strategy Completed	Confirm wetlands; Prepare Wetlands Mitigation Plan (if applicable)	Confirm wetlands; Prepare Wetlands Mitigation Plan (if applicable)	Confirm wetlands; Prepare Wetlands Mitigation Plan (if applicable)
Habitat				Habitat Mitigation Strategy Completed	Habitat Mitigation Strategy Completed	Confirm Endangered Species w/ NYSDEC	Confirm Endangered Species w/ NYSDEC	Confirm Endangered Species w/ NYSDEC
Existing Tenants				Serta/National Bedding	Save-a-Lot Distribution Center; Bank of Greene County	Dynabil (aerospace); Brockway-Smith Co. (window mfg)	Northeast Treaters (pressure treating lumber)	Casings, Inc. (tire recycling)

RETAIL* *not identified in the Target Industry Analysis but targeted by the Greene County IDA for its parks								
Considerations	Target Industry Requirements		Build Now-NY Site Criteria	Existing Business/ Industrial Parks				
				Kalkberg Commerce Park	Greene Business & Tech Park	Hudson Valley Business Park	Athens Industrial Park	Catskill Industrial Park
	Not Identified	Not Identified	Retail					
Total Empire Zone				728		100	167	265
Developable within EZ				432		53	82	160
Total Acreage				62	105			
Total Available within Industrial Site				16	21			
Total Acreage for Retail Uses			15 acres min. 20 acres preferred	-	24	100	167	265
Acreage Available for Retail Uses				-	24			
Location				T. New Baltimore & Coxsackie	T. Coxsackie	T. Coxsackie	T. Athens	
Ownership				Greene County IDA	Greene County IDA	Private/ Greene County IDA	Private	
Empire Zone Benefits				Application Approved	Application Approved	Application Approved	Application Approved	
Zoning			Must be zoned retail	Commercial/ Industrial	Commercial/ Industrial	Industrial; Town Comprehensive Plan in process	Partly zoned Industrial, Commercial & Residential	
Target Markets				Larger Development 200,000 – 300,000 SF; Technology; Light Manufacturing;	Technology; Light Manufacturing; Commercial; Back Office; Data Center; Retail	Small-scale devt. <50,000 SF; Professional; Light Manufacturing; Data Center;	Commercial; Light Industrial; Small Warehousing/ Distribution; Back Office	Commercial; Light Industrial; Manufacturing; Mixed-use Small Warehousing/ Distribution

RETAIL*

*not identified in the Target Industry Analysis but targeted by the Greene County IDA for its parks

Considerations	Target Industry Requirements		Build Now-NY Site Criteria	Existing Business/ Industrial Parks				
				Kalkberg Commerce Park	Greene Business & Tech Park	Hudson Valley Business Park	Athens Industrial Park	Catskill Industrial Park
				Commercial; Back Office; Data Center; Retail		Back Office		
Shovel Ready				Y	Y	N	N	N
Site Options								
Stand-Alone Site								
Industrial Park				Y (mix)	Y (mix)	Y (mix)	Y	Y
Office Park				Y (mix)	Y (mix)	Y (mix)		
Facility Options								
Industrial Building				BTS	BTS	BTS	84,000 SF 24,520 SF	BTS
Office Building				BTS	BTS	BTS		
Rehab Space				NA	NA	NA	NA	NA
Work from Home				NA	NA	NA	NA	NA
Retail Building			Max. Bldg. Height: 55ft; Max./ Bldg. Coverage 50%	BTS	BTS	NA	NA	NA
Utilities								
Water			Not identified	1.8 Million GPD	1.8 Million GPD	10" line/ 800,000 GPD excess capacity	1.8 Million GPD	Capacity Unknown
Sewer			Not identified	1.2 Million GPD	1.2 Million GPD	3" forced main/ 600,000 GPD excess capacity	On-site septic systems	Unknown
Telecom/Internet			Not identified	T-1 State Tel	T-1 State Tel	Fiber to site/ DSL at site/ T1 & DA-3 at site	Fiber backbone available along I-87 & Conrail line; T-1 available	Fiber backbone available along I-87 & Conrail line; T-1 available on

RETAIL* *not identified in the Target Industry Analysis but targeted by the Greene County IDA for its parks								
Considerations	Target Industry Requirements		Build Now-NY Site Criteria	Existing Business/ Industrial Parks				
				Kalkberg Commerce Park	Greene Business & Tech Park	Hudson Valley Business Park	Athens Industrial Park	Catskill Industrial Park
							on need basis	need basis
Gas			Not identified	Y (on-site) Capacity Unknown	Y (on-site) Capacity Unknown	Gas/Main distribution line to site/ needs to be downsized w/ station	Y Capacity Unknown	Y Capacity Unknown
Power			Not identified	13,200 kVa	13,200 kVa	13,200 kVa	Y Capacity Unknown	Y Capacity Unknown
Transportation								
Interstate			High visibility; High traffic count	Y 0.5 mile to I-87 Fronts State Route 9W	Y 0.5 mile to I-87 Fronts State Route 9W	Y 2.3 miles from Exit 21B, I-87	Y 3.4 miles from Exit 21, I-87	Y 2 miles from Exit 21, I-87
Rail				Y Adjacent to Rail	Y Adjacent to Rail	Y Adjacent to Rail	Y Direct Access	Y Direct Access
Air				30 min. from Albany International Airport	30 min. from Albany International Airport	30 min. from Albany International Airport	38 min. from Albany International Airport	38 min. from Albany International Airport
Other								
Stormwater				Stormwater & Retention plan in place	Stormwater & Retention plan in place	Stormwater Plan needed	Stormwater Plan Needed	Stormwater Plan Required
SEQRA				Completed	Completed	Required	Required	Required
Wetlands			Outside 100-year FEMA Floodplain	Wetland Mitigation Strategy Completed	Wetland Mitigation Strategy Completed	Confirm wetlands; Prepare Wetlands Mitigation Plan	Confirm wetlands; Prepare Wetlands Mitigation Plan	Confirm wetlands; Prepare Wetlands Mitigation
Habitat				Habitat Mitigation	Habitat Mitigation	Confirm Endangered	Confirm Endangered	Confirm Endangered

RETAIL*

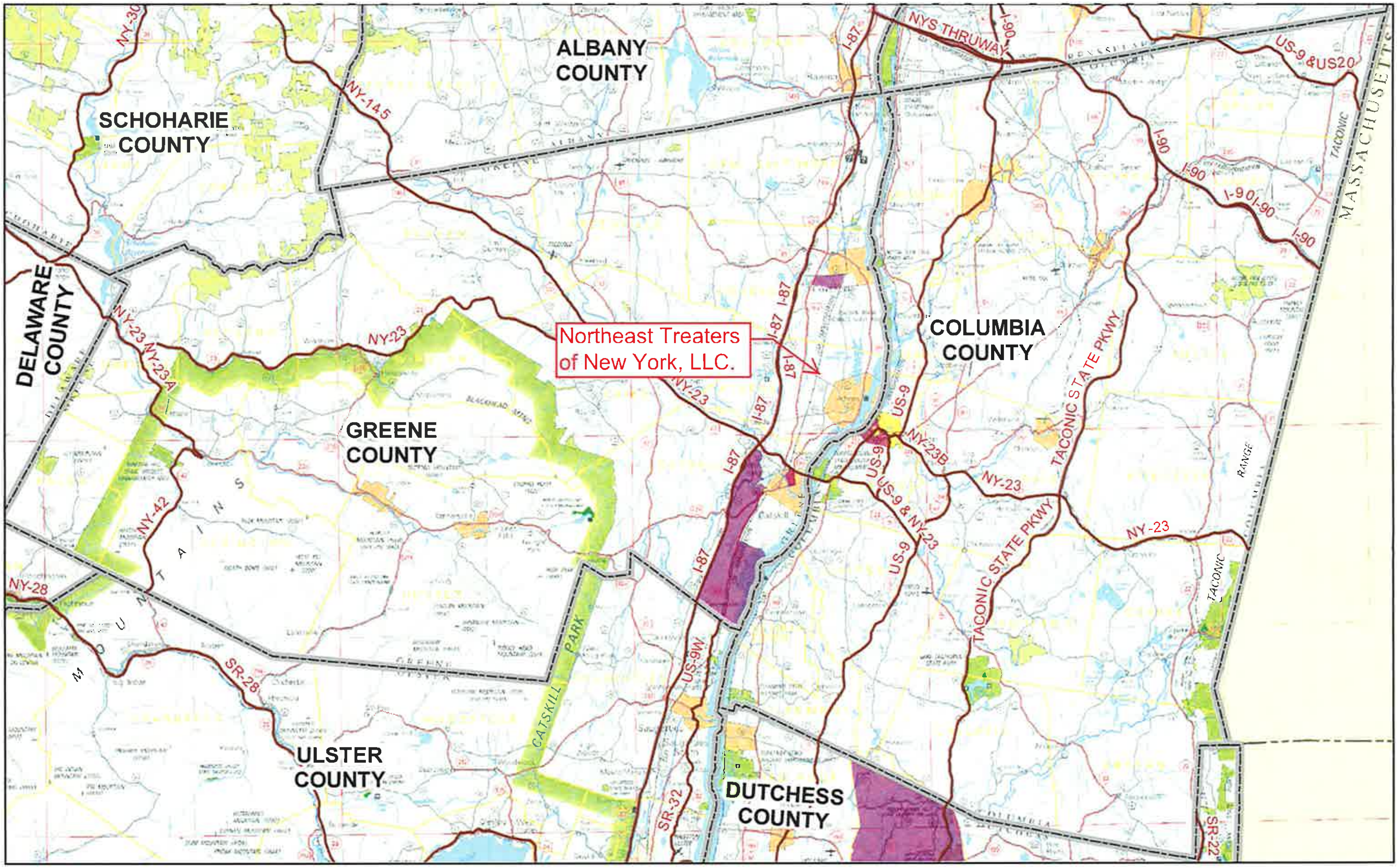
*not identified in the Target Industry Analysis but targeted by the Greene County IDA for its parks

Considerations	Target Industry Requirements		Build Now-NY Site Criteria	Existing Business/ Industrial Parks				
				Kalkberg Commerce Park	Greene Business & Tech Park	Hudson Valley Business Park	Athens Industrial Park	Catskill Industrial Park
				Strategy Completed	Strategy Completed	Species w/ NYSDEC	Species w/ NYSDEC	Species w/ NYSDEC
Site			Must be flat or slightly above grade; visible from major roads	Topography: min. 100/max. 140	Topography: min. 100/max. 140	Unknown	Unknown	Unknown
Existing Tenants				Serta/National Bedding	Save-a-Lot Distribution Center; Bank of Greene County	Dynabil (aerospace); Brockway-Smith Co. (window mfg)	Northeast Treaters (pressure treating lumber)	Casings, Inc. (tire recycling)
County Population			At least 25,000	Greene County: 49,682 (2005 U.S. Census Bureau estimates)	Greene County: 49,682 (2005 U.S. Census Bureau estimates)	Greene County: 49,682 (2005 U.S. Census Bureau estimates)	Greene County: 49,682 (2005 U.S. Census Bureau estimates)	Greene County: 49,682 (2005 U.S. Census Bureau estimates)

ATTACHMENT 10

ENVIRONMENTAL JUSTICE MAP

Potential Environmental Justice Areas in Columbia and Greene Counties, New York



This computer representation has been compiled from supplied data or information that has not been verified by EPA or NYSDEC. The data is offered here as a general representation only and is not to be used for commercial purposes without verification by an independent professional qualified to verify such data or information.

Neither EPA nor NYSDEC guarantee the accuracy, completeness, or timeliness of the information shown and shall not be liable for any loss or injury resulting from reliance.

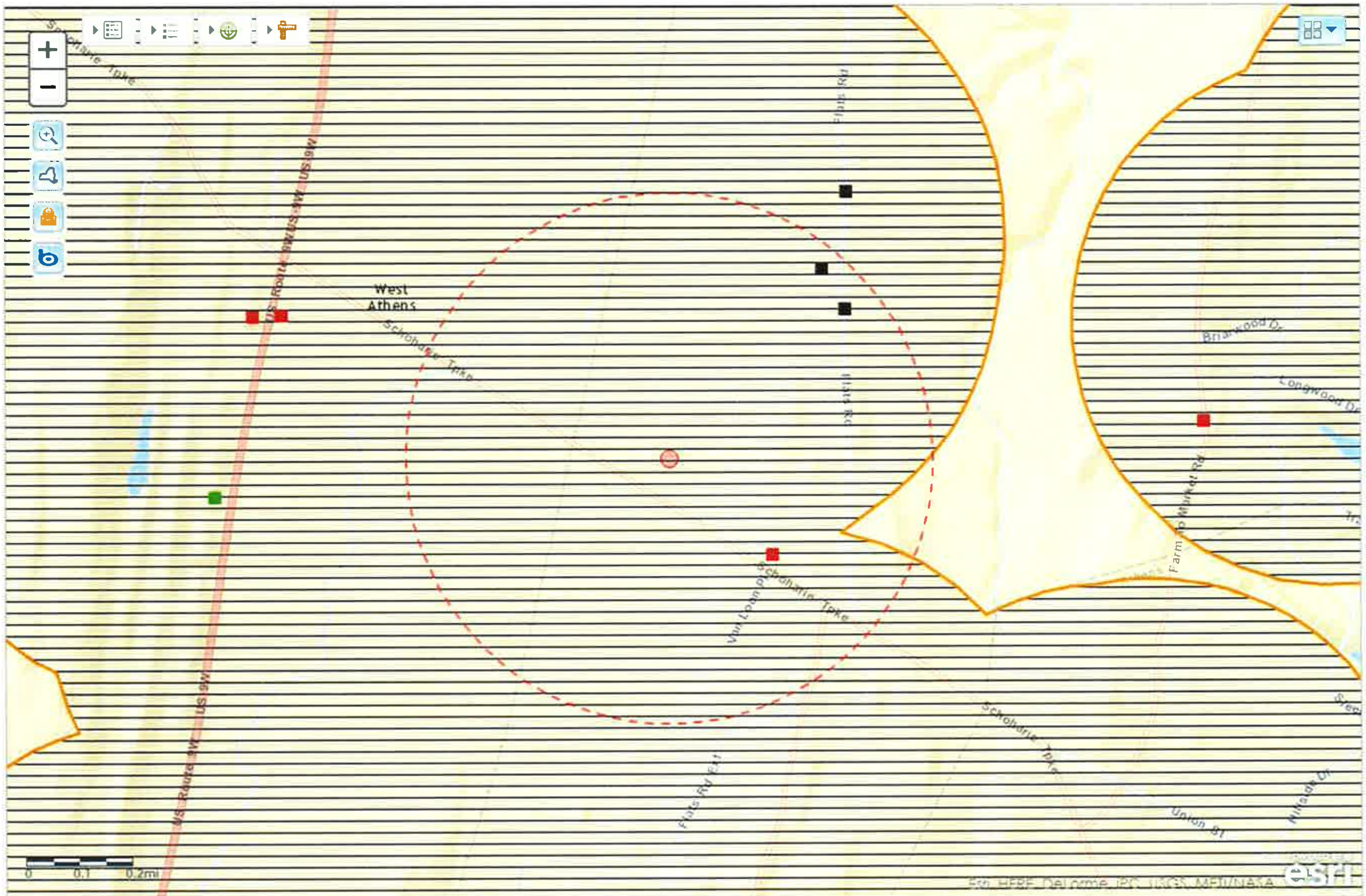
Data Source for Potential Environmental Justice Areas: U.S. Census Bureau, 2000 U.S. Census

For questions about this map contact
New York State Department of Environmental Conservation
Office of Environmental Justice
625 Broadway, 14th Floor
Albany, New York 12233-1500
(518) 402-8556
ej@gw.dec.state.ny.us

ATTACHMENT 11

CULTURAL RESOURCES INFORMATION

796 Schoharie Turnpike, Town of Athens, Greene County, New York



Screenshot captured September 26, 2014, by NYS OPRHP Digital Archive Program Assistant Matthew W. Shepherd using CRIS Release Candidate 7.0.4. Translucent red circle indicates location of 796 Schoharie Turnpike; dashed red line indicates 0.5-mile buffer. Hashed lines with goldenrod border indicate areas within 0.1 to 0.5 mi of recorded archaeological resources (distance depends on site classification). Solid squares represent built resources (green = National Register–eligible; black = eligibility undetermined; red = not eligible).

ATTACHMENT 12

NATURAL RESOURCE INFORMATION

U.S. Fish and Wildlife Service

National Wetlands Inventory

796 Schoharie Turnpike

Sep 26, 2014

Wetlands

- Freshwater Emergent
- Freshwater Forested/Shrub
- Estuarine and Marine Deepwater
- Estuarine and Marine
- Freshwater Pond
- Lake
- Riverine
- Other

Riparian

- Herbaceous
- Forested/Shrub

Riparian Status

- Digital Data

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

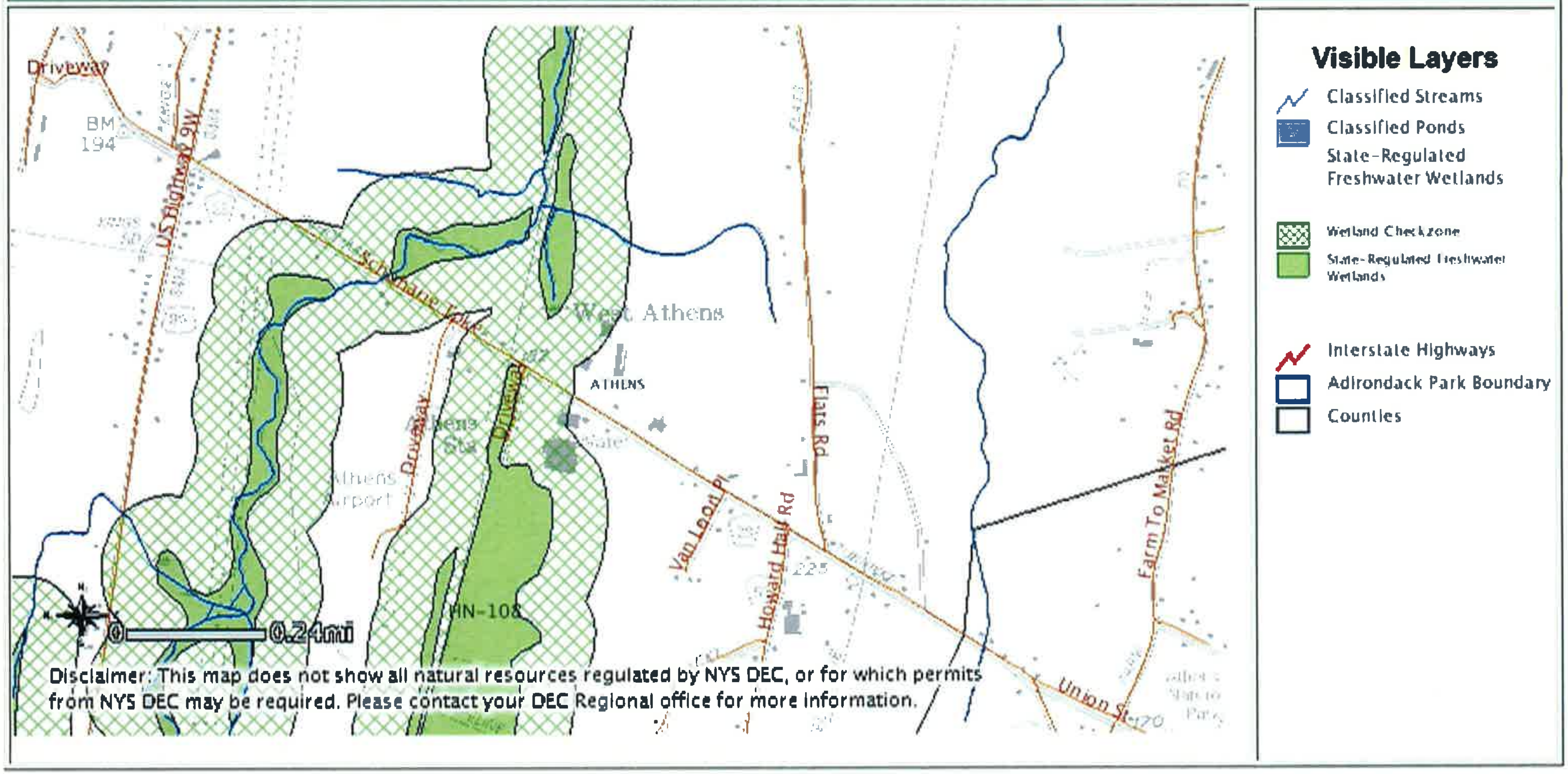
User Remarks:

Screenshot captured September 26, 2014.

New York State - Department of Environmental Conservation

Environmental Resource Mapper

796 Schoharie Turnpike, Town of Athens, New York



New York Nature Explorer
User Defined Results Report

Criteria: Selected Map Area

Common Name	Subgroup	Distribution Status	Year Last Documente	Protection Status State	Protection Status Federal	Conservation Rank State	Conservation Rank Global

Plant: Flowering Plants

Common Name	Subgroup	Distribution Status	Year Last Documente	Protection Status State	Protection Status Federal	Conservation Rank State	Conservation Rank Global
Stiff-leaf Goldenrod *Oligoneuron rigidum var. rigidum*	Asters, Goldenrods and Daisies	Recently Confirmed	2005	Threatened		S2	G5T5

Note: Restricted plants and animals may also have also been documented in one or more of the Towns or Cities in which your user-defined area is located, but are not listed in these results. This application does not provide information at the level of Town or City on state-listed animals and on other sensitive animals and plants. A list of the restricted animals and plants documented at the corresponding county level can be obtained via the County link(s) on the original User Defined Search Results page. Any individual plant or animal on this county's restricted list may or may not occur in this particular user-defined area.

This list only includes records of rare species and significant natural communities from the databases of the NY Natural Heritage Program. This list is not a definitive statement about the presence or absence of all plants and animals, including rare or state-listed species, or of all significant natural communities. For most areas, comprehensive field surveys have not been conducted, and this list should not be considered a substitute for on-site surveys.

Stiff-leaf Goldenrod

Solidago rigida

Photo credits: *Stephen M. Young*

Scientific Name *Oligoneuron rigidum var. rigidum*

Family Name Asteraceae
Aster Family

Did you know?
The genus gets its name from the Latin solidus, "whole," referring to the reputed properties of the goldenrods to heal wounds. The specific name refers to its stiff leaves. Rare in the states along the east coast, this goldenrod is very common in the midwestern and prairie states where it blankets grasslands with its showy flat-topped flower stalks.

Summary

Protection Threatened in New York State, not listed federally.

This level of state protection means: listed species are those with: 1) 6 to fewer than 20 extant sites, or 2) 1,000 to fewer than 3,000 individuals, or 3) restricted to not less than 4 or more than 7 U.S.G.S. 7 ? minute topographical maps, or 4) listed as threatened by U.S. Department of the Interior.

Rarity G5T5, S2

A global rarity rank of G5T5 means: Secure globally - Both the species as a whole and the subspecies/variety are common in the world; widespread and abundant (but may be rare in some parts of its range).
A state rarity rank of S2 means: This plant is threatened/imperiled in New York because of rarity (typically 6-20 populations or few remaining individuals) or is vulnerable to extirpation from New York due to biological factors.

Conservation Status in New York

There are nine known populations and at least ten additional hsitorical locations. This plant has been threatened by habitat conversation, mainly housing developments. Various invasive species have also had a negative impact.

Short-term Trends

There has been a short-term decrease in plant numbers because of development of some of the sites and other unknown causes. Some plants have been rescued at one site and transplanted to another area.

Long-term Trends

Long term numbers have stayed around ten populations with new discoveries offsetting the extirpation of historical records.

Conservation and Management

Threats

There have been development pressures on many of the sites. Residential development and highway construction have extirpated or fragmented some sites.

Conservation Strategies and Management Practices

This plant does very well in successional old fields and other grassland habitats. Should woody vegetation become established, the populations would likely begin to decline. This would support using a brush-hog to occassionally (i.e. once every 3-5 years) to clear the woody vegetation.

Research Needs

Research is necessary to determine which management practices are best at keeping populations healthy.

Habitat

A goldenrod of open areas on dry shaley slopes or on limestone bedrock; open areas among shrubby thickets and edge of grasslands over shallow, dry, sandy and rocky soils on limestone; dry post-agricultural successional habitats, usually on alkaline soils; successional fields on clay soils; rocky summit grasslands on alkaline and circum-neutral soils; grassland habitats on dry, clayey, stony soils; woodland edges between calcareous woodlands and successional old fields; and dry shaly hillsides and slopes (New York Natural Heritage Program 2004). Prairies, dry fields and hillsides; may spread along roadsides and railroads (Voss 1996). Prairies and other dry, open places, especially in sandy soil (Gleason and Cronquist 1991). Dry or gravelly open woods, thickets and prairies (Fernald 1970).

Associated Ecological Communities

Calcareous Talus Slope Woodland
An open or closed canopy community that occurs on talus slopes composed of calcareous bedrock such as limestone or dolomite. The soils are usually moist and loamy; there may be numerous rock outcrops.

Mowed Roadside/pathway
A narrow strip of mowed vegetation along the side of a road, or a mowed pathway through taller vegetation (e.g., meadows, old fields, woodlands, forests), or along utility right-of-way corridors (e.g., power lines, telephone lines, gas pipelines). The vegetation in these mowed strips and paths may be dominated by grasses, sedges, and rushes; or it may be dominated by forbs, vines, and low shrubs that can tolerate infrequent mowing.

Rocky Summit Grassland
A grassland community that occurs on rocky summits and exposed rocky slopes of hills. Woody plants are sparse and may be scattered near the margin of the community. Small trees and shrubs may be present at low percent cover.

Successional Old Field
A meadow dominated by forbs and grasses that occurs on sites that have been cleared and plowed (for farming or development), and then abandoned or only occasionally mowed.

Other Probable Associated Communities

Limestone woodland
Red cedar rocky summit
Shale cliff and talus community
Successional shrubland

Associated Species

Butterfly Milkweed (*Asclepias tuberosa*)
Aster sagittifolius
Hay Sedge (*Carex argyrantha*)
Fescue Sedge (*Carex brevior*)
Bitternut Hickory (*Carya cordiformis*)
Flat-top Fragrant Goldenrod (*Euthamia graminifolia*)
White Ash (*Fraxinus americana*)
Violet Bush-clover (*Lespedeza violacea*)
Hophornbeam (*Ostrya virginiana*)
Virginia Creeper (*Parthenocissus quinquefolia*)
Talus Slope Beard-tongue (*Penstemon digitalis*)
Slender Mountain-mint (*Pycnanthemum tenuifolium*)
Burr Oak (*Quercus macrocarpa*)
Pin Oak (*Quercus palustris*)
Red Oak (*Quercus rubra*)
Staghorn Sumac (*Rhus typhina*)
Native Blackeyed Susan (*Rudbeckia hirta*)

Little Bluestem (*Schizachyrium scoparium*)
Canada Goldenrod (*Solidago canadensis*)
Early Goldenrod (*Solidago juncea*)
Rough-leaf Goldenrod (*Solidago rugosa*)
Yellow Indiangrass (*Sorghastrum nutans*)
American Bladdernut (*Staphylea trifolia*)
American Basswood (*Tilia americana var. americana*)
American Elm (*Ulmus americana*)
Northern Prickly-ash (*Zanthoxylum americanum*)

Identification Comments

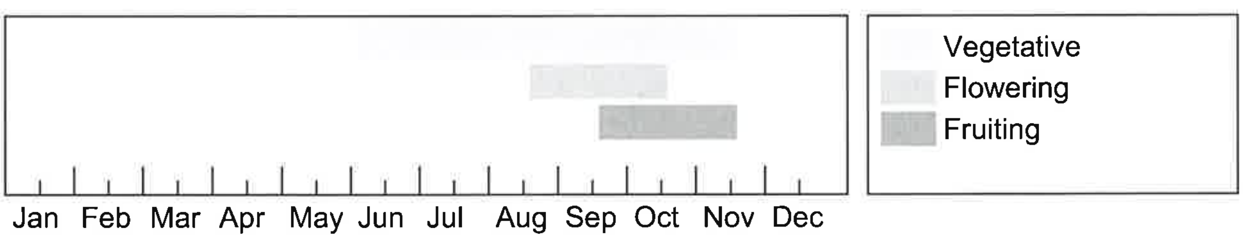
This is a tall, stiffly erect goldenrod with a thick fuzzy stem. It usually grows about 1 to 1.5 meters tall with many thick, coarse, fuzzy, gray-green, stiff leaves along the stem. The margins of the leaves have few or no teeth. The lower leaves are long and lance-shaped with long leaf stalks while the upper leaves are progressively shorter, upright, and clasp the stem. The bright yellow flower clusters at the top of the stem are more or less flat-topped.

Best Life Stage for Identifying This Species

This goldenrod may be identified from basal leaves or any vegetative portion of the plant. The best life stage for identification though is while the plants are flowering.

The Best Time to See

This goldenrod flowers between mid-August until early October with fruiting stalks persisting into late fall. While this plant can be identified vegetatively, it is easier to find when in flower. Surveys should be conducted in late summer to early fall.



The time of year you would expect to find Stiff-leaf Goldenrod in New York.

Similar Species

A unique goldenrod that is easily distinguished from other goldenrods. The key characters of stiff-leaf goldenrod (*Solidago rigida*) are the flat-topped inflorescence, with stiff leaves that are hairy and ovate to elliptical (less than 3 times as long as broad).

Taxonomy

Kingdom Plantae

└ **Phylum** Anthophyta

└

Class Dicots (Dicotyledoneae)

└─ **Order** Asterales

└─ **Family** Asteraceae (Aster Family)

Additional Common Names

Hard-leaved Goldenrod
Rigid Goldenrod
Stiff Goldenrod

Synonyms

Solidago rigida (L.)

Additional Resources

Links

New York Flora Atlas
http://www.newyork.plantatlas.usf.edu/Plant.aspx?id=286
USDA Plants Database
http://plants.usda.gov/java/profile?symbol=OLRIR
NatureServe Explorer
http://natureserve.org/explorer/servlet/NatureServe?searchName=SOLIDAGO+RIGIDA
Google Images
http://images.google.com/images?q=SOLIDAGO+RIGIDA
Illinois Wildflowers
http://www.illinoiswildflowers.info/prairie/plantx/stf_goldenrodx.htm

Best Identification Reference

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Weldy, T. and D. Werier. 2010. New York flora atlas. [S.M. Landry, K.N. Campbell, and L.D. Mabe (original application development), Florida Center for Community Design and Research http://www.fccdr.usf.edu/. University of South Florida http://www.usf.edu/

New York Natural Heritage Program
625 Broadway, 5th Floor,
Albany, NY 12233-4757
Phone: (518) 402-8935
acris@nynhp.org

This project is made possible with funding from:
- New York State Department of Environmental Conservation Hudson River Estuary Program
- Division of Lands & Forests, Department of Environmental Conservation
- New York State Office of Parks, Recreation and Historic Preservation

Information for this guide was last updated on Mar 19, 2013
This guide was authored by

ATTACHMENT 13

FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA) FLOOD INSURANCE RATE MAPS (FIRMs)

consulted for possible updated or additional flood hazard information.

To obtain more detailed information in areas where **Base Flood Elevations** (BFEs) and/or **floodways** have been determined, users are encouraged to consult the Flood Profiles and Floodway Data and/or Summary of Stillwater Elevations tables contained within the Flood Insurance Study (FIS) report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

Coastal Base Flood Elevations shown on this map apply only landward of 0.0' North American Vertical Datum of 1988 (NAVD 88). Users of this FIRM should be aware that coastal flood elevations are also provided in the Summary of Stillwater Elevations table in the Flood Insurance Study report for this jurisdiction. Elevations shown in the Summary of Stillwater Elevations table should be used for construction and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.

Boundaries of the **floodways** were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by **flood control structures**. Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study report for information on flood control structures for this jurisdiction.

The **projection** used in the preparation of this map was Universal Transverse Mercator (UTM) zone 18. The **horizontal datum** was NAD 83, GRS80 spheroid. Differences in datum, spheroid, projection or UTM zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

Flood elevations on this map are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same **vertical datum**. For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at http://www.ngs.noaa.gov or contact the National Geodetic Survey at the following address:

NGS Information Services
NOAA, N/NGS12
National Geodetic Survey
SSMC-3, #9202
1315 East-West Highway
Silver Spring, Maryland 20910-3282
(301) 713-3242

To obtain current elevation, description, and/or location information for **bench marks** shown on this map, please contact the Information Services Branch of the National Geodetic Survey at **(301) 713-3242**, or visit its website at http://www.ngs.noaa.gov.

Base map information shown on this FIRM was derived from digital orthophotography provided by the New York State Office of Cyber Security & Critical Infrastructure Coordination. This information was produced as 30-centimeter resolution natural color orthoimagery from photography dated April 2004 and 30-centimeter resolution color infrared orthoimagery from photography dated April 2001.

Based on updated topographic information, this map reflects more detailed and up-to-date **stream channel configurations and floodplain delineations** than those shown on the previous FIRM for this jurisdiction. As a result, the Flood Profiles and Floodway Data tables in the Flood Insurance Study Report (which contains authoritative hydraulic data) may reflect stream channel distances that differ from what is shown on this map. Also, the road to floodplain relationships for unrevised streams may differ from what is shown on previous maps.

Corporate limits shown on this map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

Please refer to the separately printed **Map Index** for an overview map of the county showing the layout of map panels; community map repository addresses; and a Listing of Communities table containing National Flood Insurance Program dates for each community as well as a listing of the panels on which each community is located.

Contact the **FEMA Map Service Center** at 1-800-358-9616 for information on available products associated with this FIRM. Available products may include previously issued Letters of Map Change, a Flood Insurance Study report, and/or digital versions of this map. The FEMA Map Service Center may also be reached by Fax at 1-800-358-9620 and its website at http://www.msc.fema.gov/.

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CTP Cooperating Technical Partners

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chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

ZONE A	No Base Flood Elevations determined.
ZONE AE	Base Flood Elevations determined.
ZONE AH	Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.
ZONE AO	Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
ZONE AR	Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
ZONE A99	Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.
ZONE V	Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
ZONE VE	Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X — Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE X — Areas determined to be outside the 0.2% annual chance floodplain.

ZONE D — Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

1% annual chance floodplain boundary

0.2% annual chance floodplain boundary

Floodway boundary

Zone D boundary

CBRS and OPA boundary

Boundary dividing Special Flood Hazard Area Zones and boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities.

513	Base Flood Elevation line and value; elevation in feet*
(EL 987)	Base Flood Elevation value where uniform within zone; elevation in feet*

* Referenced to the North American Vertical Datum of 1988

(A)——(A)	Cross section line
[3]——[3]	Limited detail cross section line
(23)- - - -(23)	Transect line
87°07'45", 32°22'30"	Geographic coordinates referenced to the North American Datum of 1983 (NAD 83), Western Hemisphere
76000N	1000-meter Universal Transverse Mercator grid values, zone NAD 1983 UTM Zone 18N
600000 FT	5000-foot grid ticks: New York State Plane coordinate system, central (FIPSZONE 3101), Transverse Mercator projection
DX5510 ×	Bench mark (see explanation in Notes to Users section of this FIRM panel)
• M1.5	River Mile

MAP REPOSITORY
Refer to listing of Map Repositories on Map Index

EFFECTIVE DATE OF COUNTYWIDE
FLOOD INSURANCE RATE MAP
MAY 16, 2008

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your Insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

MAP SCALE 1" = 500'

250 0 500 1000 FEET

150 0 150 300 METERS

NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0287F

FIRM
FLOOD INSURANCE RATE MAP

for GREENE COUNTY, NEW YORK
ALL JURISDICTIONS

CONTAINS:

COMMUNITY	NUMBER
ATHENS, TOWN OF	361117
ATHENS, VILLAGE OF	360285
COXSACKIE, TOWN OF	361115

PANEL 287 OF 531
MAP SUFFIX: F
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

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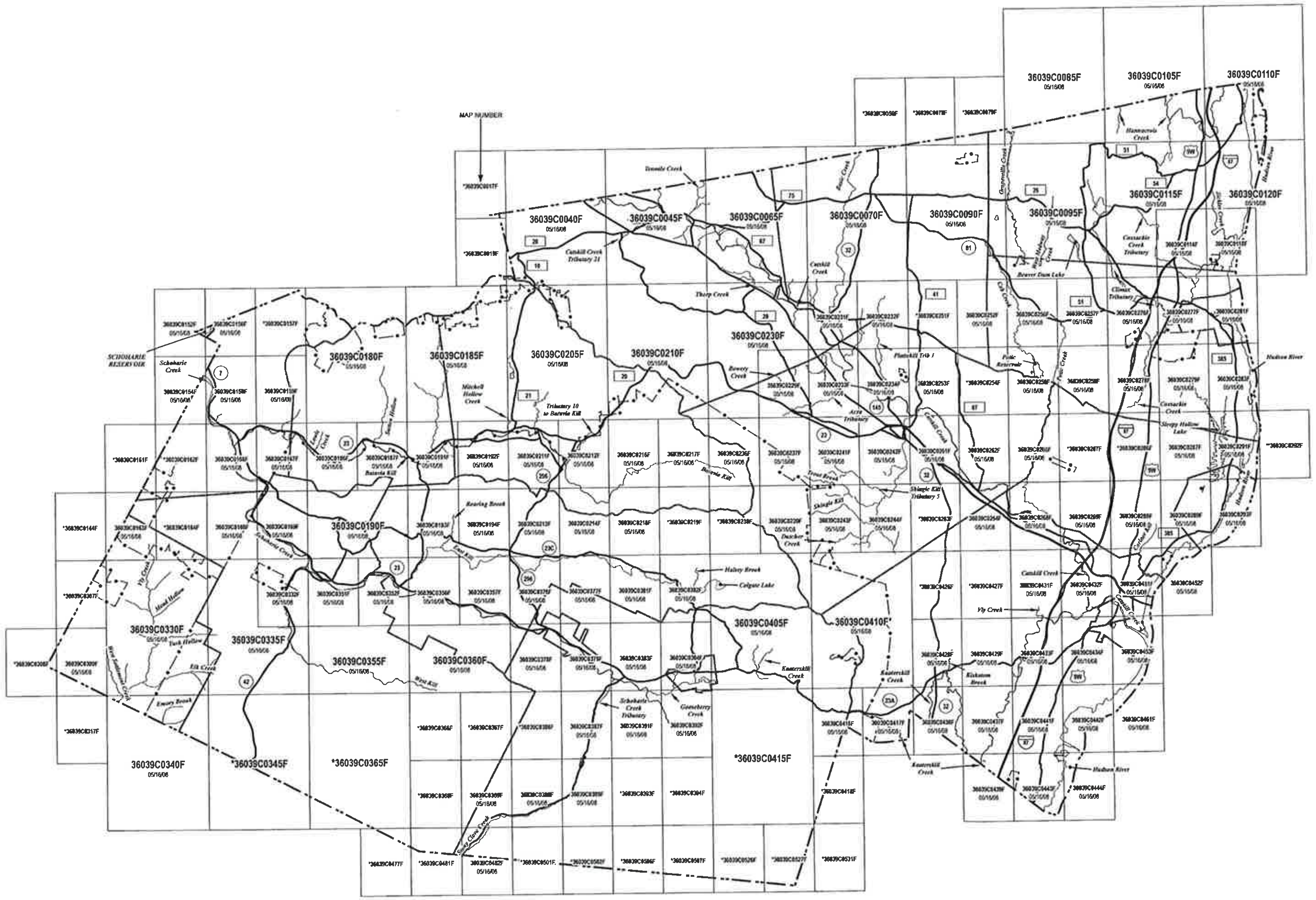
MAP NUMBER
36039C0287F

EFFECTIVE DATE



* PANEL NOT PRINTED - NO SPECIAL FLOOD HAZARD AREAS

** PANEL NOT PRINTED - OPEN WATER AREA

LISTING OF COMMUNITIES

COMMUNITY NAME	COMMUNITY NUMBER	LOCATED ON PANELS	INITIAL NFIP MAP DATE	INITIAL FIRM DATE	MOST RECENT FIRM PANEL DATE
ASHLAND, TOWN OF	360284	0157[1], 0159, 0167, 0180, 0185, 0186, 0187, 0190, 0191	NOVEMBER 1, 1974	APRIL 10, 1981	MAY 16, 2008
ATHENS, TOWN OF	361117	0258, 0259, 0264, 0266, 0267[1], 0268, 0269, 0286[1], 0287, 0288, 0289, 0291, 0292[1], 0293, 0432, 0451, 0452	AUGUST 13, 1976	SEPTEMBER 3, 1982	MAY 16, 2008
ATHENS, VILLAGE OF	360285	0287, 0289, 0291, 0293, 0452	OCTOBER 29, 1976	SEPTEMBER 6, 1989	MAY 16, 2008
CAIRO, TOWN OF	360286	0210, 0217, 0229, 0230, 0231, 0232, 0233, 0234, 0236, 0237, 0238[1], 0239, 0241, 0242, 0243, 0244, 0251[1], 0253, 0254[1], 0258, 0261, 0262, 0263[1], 0264, 0266, 0268, 0405, 0410, 0426[1]	DECEMBER 20, 1974	SEPTEMBER 6, 1989	MAY 16, 2008
CATSKILL, TOWN OF	361116	0263[1], 0264, 0268, 0269, 0410, 0416, 0417, 0426[1], 0427[1], 0428, 0429, 0431, 0432, 0433, 0434, 0436, 0437, 0439, 0441, 0442, 0443, 0444, 0451, 0452, 0453, 0461	DECEMBER 27, 1974	FEBRUARY 16, 1990	MAY 16, 2008
CATSKILL, VILLAGE OF	360287	0432, 0434, 0451, 0453	MARCH 1, 1974	SEPTEMBER 6, 1989	MAY 16, 2008
COXSACKIE, TOWN OF	361115	0090, 0095, 0114, 0115, 0118, 0252, 0254[1], 0256, 0257, 0258, 0259, 0267[1], 0276, 0277, 0278, 0279, 0281, 0283, 0286[1], 0287, 0291, 0292[1]	DECEMBER 6, 1974	SEPTEMBER 6, 1989	MAY 16, 2008
COXSACKIE, VILLAGE OF	360288	0277, 0281, 0283	MARCH 8, 1974	DECEMBER 2, 1983	MAY 16, 2008
DURHAM, TOWN OF	360289	0017[1], 0019[1], 0040, 0045, 0065, 0205, 0210, 0229, 0230, 0231, 0233	DECEMBER 13, 1974	JUNE 1, 1988	MAY 16, 2008
GREENVILLE, TOWN OF	360290	0059[1], 0065, 0070, 0078[1], 0079[1], 0090, 0230, 0231, 0232, 0251[1], 0252, 0253, 0254[1]	JULY 26, 1974	FEBRUARY 1, 1988	MAY 16, 2008
HALCOTT, TOWN OF	360291	0144[1], 0163, 0164[1], 0168, 0307[1], 0308[1], 0309, 0317[1], 0330, 0335, 0340	FEBRUARY 14, 1975	NOVEMBER 4, 1983	MAY 16, 2008
HUNTER, TOWN OF	360292	0366, 0367[1], 0369, 0376, 0377, 0378, 0379, 0381, 0382, 0383, 0384, 0386[1], 0387, 0388, 0389, 0391, 0392, 0393[1], 0394[1], 0405, 0410, 0415[1], 0416, 0418[1], 0481[1], 0482, 0501[1], 0502[1], 0506[1], 0507[1], 0526[1], 0527[1], 0531[1]	JULY 9, 1976	FEBRUARY 2, 1983	MAY 16, 2008
HUNTER, VILLAGE OF	360293	0376, 0377, 0378, 0379	AUGUST 16, 1974	DECEMBER 1, 1982	MAY 16, 2008
JEWETT, TOWN OF	361114	0187, 0190, 0191, 0192, 0193, 0194, 0211, 0213, 0214, 0218, 0219[1], 0238[1], 0239, 0352, 0355, 0356, 0357, 0360, 0376, 0377, 0378, 0381, 0382, 0405	JANUARY 17, 1974	APRIL 4, 1983	MAY 16, 2008
LEXINGTON, TOWN OF	360294	0163, 0164[1], 0167, 0168, 0169, 0186, 0187, 0190, 0330, 0332, 0335, 0340, 0345[1], 0351, 0352, 0355, 0360, 0365[1], 0366[1], 0367[1], 0368[1], 0369, 0378, 0386[1], 0477[1], 0481[1], 0482	AUGUST 23, 1974	AUGUST 1, 1983	MAY 16, 2008
NEW BALTIMORE, TOWN OF	360295	0079[1], 0085, 0090, 0095, 0105, 0110, 0114, 0115, 0118, 0120	DECEMBER 17, 1976	JULY 23, 1982	MAY 16, 2008
PRATTSVILLE, TOWN OF	360296	0152, 0154, 0156, 0157[1], 0158, 0159, 0161[1], 0162[1], 0163, 0164[1], 0166, 0167, 0168, 0169, 0180	SEPTEMBER 20, 1974	MAY 16, 1983	MAY 16, 2008
TANNERSVILLE, VILLAGE OF	360297	0384, 0392, 0405, 0415[1]	JUNE 7, 1974	APRIL 18, 1983	MAY 16, 2008
WINDHAM, TOWN OF	361401	0019[1], 0040, 0185, 0191, 0192, 0205, 0210, 0211, 0212, 0213, 0214, 0216, 0217, 0218, 0219[1], 0236, 0238[1]	NOVEMBER 4, 1977	JUNE 1, 1988	MAY 16, 2008

[1] PANEL NOT PRINTED

MAP REPOSITORIES

(Maps available for reference only, not for distribution.)

ASHLAND, TOWN OF:
Town Hall
12094 Route 23
Ashland, New York 12407

ATHENS, TOWN OF:
Town Hall
2 First Street
Athens, New York 12015

ATHENS, VILLAGE OF:
Village Hall
2 First Street
Athens, New York 12015

CAIRO, TOWN OF:
Town Hall
512 Main Street
Cairo, New York 12413

CATSKILL, TOWN OF:
Town Hall
439 Main Street
Catskill, New York 12414

CATSKILL, VILLAGE OF:
Village Hall
422 Main Street
Catskill, New York 12414

COXSACKIE, TOWN OF:
Town Hall
16 Reed Street
Coxsackie, New York 12051

COXSACKIE, VILLAGE OF:
Village Hall Clerk's Office
119 Mansion Street
Coxsackie, New York 12051

DURHAM, TOWN OF:
Town Hall
7309 Route 81
Durham, New York 12422

GREENVILLE, TOWN OF:
Town Hall Clerk's Office
73 Ida Smith Lane
Greenville, New York 12083

HALCOTT, TOWN OF:
Town Building
264 Route 3
Halcott Center, New York 12430

HUNTER, TOWN OF:
Town Hall
5748 Route 23A
Tannersville, New York 12485

HUNTER, VILLAGE OF:
Village Hall
7955 Main Street
Hunter, New York 12442

JEWETT, TOWN OF:
Municipal Building
3547 County Route 23C
Jewett, New York 12444

LEXINGTON, TOWN OF:
Municipal Building
3542 Route 42
Lexington, New York 12452

NEW BALTIMORE, TOWN OF:
Town Hall
3809 County Route 51
Hannacroix, New York 12087

PRATTSVILLE, TOWN OF:
Town Hall Supervisor's Office
14517 Main Street
Prattsville, New York 12468

TANNERSVILLE, VILLAGE OF:
Village Hall
1 Park Lane
Tannersville, New York 12485

WINDHAM, TOWN OF:
Town Hall
371 State Route 296
Hensonville, New York 12439

MAP DATES

This FIRM Index displays the map date for each FIRM panel at the time that this Index was printed. Because this Index may not be distributed to unaffected communities in subsequent revisions, users may determine the current map date for each FIRM panel by visiting the FEMA Map Service Center website at http//msc.fema.gov or by calling the Map Service Center at 1-800-358-9616.

Communities annexing land on adjacent FIRM panels must obtain a current copy of the adjacent panel as well as the current FIRM Index. These may be ordered directly from the Map Service Center at the number listed above.

NOTE TO USER

Future revisions to this FIRM Index will only be issued to communities that are located on FIRM panels being revised. This FIRM Index therefore remains valid for FIRM panels dated May 16, 2008 or earlier. Please refer to the "MOST RECENT FIRM PANEL DATE" column in the Listing of Communities tables to determine the most recent FIRM INDEX date for each community.

NFIP

NATIONAL FLOOD INSURANCE PROGRAM

MAP INDEX

FIRM

FLOOD INSURANCE RATE MAP

GREENE COUNTY, NEW YORK
(ALL JURISDICTIONS)

(SEE LISTING OF COMMUNITIES TABLE)

MAP INDEX

PANELS PRINTED: 40, 45, 65, 70, 85, 90, 95, 105, 110, 114, 115, 118, 120, 152, 154, 156, 158, 159, 163, 166, 167, 168, 169, 180, 185, 186, 187, 190, 191, 192, 193, 194, 205, 210, 211, 212, 213, 214, 216, 217, 218, 229, 230, 231, 232, 233, 234, 236, 237, 239, 241, 242, 243, 244, 252, 253, 256, 257, 258, 259, 261, 262, 264, 266, 268, 269, 276, 277, 278, 279, 281, 283, 287, 288, 289, 291, 293, 309, 330, 332, 335, 340, 351, 352, 355, 356, 357, 360, 369, 376, 377, 378, 379, 381, 382, 383, 384, 387, 388, 389, 391, 392, 405, 410, 416, 417, 428, 429, 431, 432, 433, 434, 436, 437, 439, 441, 442, 443, 444, 451, 452, 453, 461, 482

MAP NUMBER
36039CIND0A

EFFECTIVE DATE
MAY 16, 2008

Federal Emergency Management Agency

considered for possible updated or additional flood hazard information.

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NGS Information Services
NOAA, N/NGS12
National Geodetic Survey
SSMC-3, #9202
1315 East-West Highway
Silver Spring, Maryland 20910-3282
(301) 713-3242

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FLOODWAY AREAS IN ZONE AE

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0.2% annual chance floodplain boundary

Floodway boundary

Zone D boundary

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• M1.5	River Mile

MAP REPOSITORY
Refer to listing of Map Repositories on Map Index

EFFECTIVE DATE OF COUNTYWIDE
FLOOD INSURANCE RATE MAP
MAY 18, 2008

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL

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N

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250 0 500 1000 FEET

150 0 150 300 METERS

NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0289F

FIRM

FLOOD INSURANCE RATE MAP

for GREENE COUNTY, NEW YORK
ALL JURISDICTIONS

CONTAINS:

COMMUNITY	NUMBER
ATHENS, TOWN OF	361117
ATHENS, VILLAGE OF	360285

PANEL 289 OF 531
MAP SUFFIX: F

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

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MAP NUMBER
36039C0289F

EFFECTIVE DATE

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CTP Cooperating Technical Partners

This digital FIRM was produced through a unique cooperative partnership between the New York State Department of Environmental Conservation (NYSDEC) and FEMA. As part of the effort, NYSDEC has joined in a Cooperative Technical Partnership agreement to produce and maintain FEMA's digital FIRM.

chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

ZONE A	No Base Flood Elevations determined.
ZONE AE	Base Flood Elevations determined.
ZONE AH	Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.
ZONE AO	Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
ZONE AR	Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
ZONE A99	Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.
ZONE V	Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
ZONE VE	Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X — Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE X — Areas determined to be outside the 0.2% annual chance floodplain.

ZONE D — Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

1% annual chance floodplain boundary

0.2% annual chance floodplain boundary

Floodway boundary

Zone D boundary

CBRS and OPA boundary

Boundary dividing Special Flood Hazard Area Zones and boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities.

~~ 513 ~~~	Base Flood Elevation line and value; elevation in feet*
(EL 987)	Base Flood Elevation value where uniform within zone; elevation in feet*

* Referenced to the North American Vertical Datum of 1988

(A)——(A)	Cross section line
[3]——[3]	Limited detail cross section line
(23)- - - -(23)	Transect line
87°07'45", 32°22'30"	Geographic coordinates referenced to the North American Datum of 1983 (NAD 83), Western Hemisphere
76 N	1000-meter Universal Transverse Mercator grid values, zone NAD 1983 UTM Zone 18N
600000 FT	5000-foot grid ticks: New York State Plane coordinate system, central (FIPSZONE 3101), Transverse Mercator projection
DX5510 x	Bench mark (see explanation in Notes to Users section of this FIRM panel)
• M1.5	River Mile

MAP REPOSITORY
Refer to listing of Map Repositories on Map Index

EFFECTIVE DATE OF COUNTYWIDE
FLOOD INSURANCE RATE MAP
MAY 16, 2008

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your Insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

MAP SCALE 1" = 500'

250 0 500 1000 FEET

150 0 150 300 METERS

NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0288F

FIRM
FLOOD INSURANCE RATE MAP

for GREENE COUNTY, NEW YORK
ALL JURISDICTIONS

CONTAINS:

COMMUNITY	NUMBER
ATHENS, TOWN OF	361117

PANEL 288 OF 531
MAP SUFFIX: F
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
36039C0288F

EFFECTIVE DATE

ATTACHMENT 14

GREENE COUNTY SOIL RESOURCE REPORT

USDA United States Department of Agriculture

NRCS Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for

Greene County, New York

796 Schoharie Turnpike, Town of Athens, New York

September 26, 2014

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (http://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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Contents

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Soil Map

Map Scale: 1:8,620 if printed on A landscape (11" x 8.5") sheet.

Meters: 0 100 200 400 600

Feet: 0 400 800 1600 2400

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Greene County, New York
Survey Area Data: Version 12, Dec 16, 2013

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jun 19, 2010—May 12, 2011

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Greene County, New York (NY039)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
Co	Covington and Madalin soils	127.5	34.1%
KrA	Kingsbury and Rhinebeck soils, 0 to 3 percent slopes	131.6	35.2%
KrB	Kingsbury and Rhinebeck soils, 3 to 8 percent slopes	28.0	7.5%
NrC	Nassau channery silt loam, rolling, very rocky	6.6	1.8%
VdB	Valois-Nassau complex, undulating	37.2	10.0%
VdD	Valois-Nassau complex, hilly	37.5	10.0%
W	Water	3.6	1.0%
Wa	Wayland soils complex, non-calcareous substratum, 0 to 3 percent slopes, frequently flooded	1.4	0.4%
Totals for Area of Interest		**373.5**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Greene County, New York

Co—Covington and Madalin soils

Map Unit Setting

National map unit symbol: 9sg1
Elevation: 50 to 1,000 feet
Mean annual precipitation: 36 to 44 inches
Mean annual air temperature: 45 to 50 degrees F
Frost-free period: 135 to 170 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Covington and similar soils: 45 percent
Madalin and similar soils: 30 percent
Minor components: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Covington

Setting

Landform: Depressions
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Calcareous clayey glaciolacustrine deposits or glaciomarine deposits

Typical profile

H1 - 0 to 7 inches: silty clay
H2 - 7 to 28 inches: clay
H3 - 28 to 60 inches: silty clay

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: About 0 to 12 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 15 percent
Available water storage in profile: Low (about 5.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 5w
Hydrologic Soil Group: D

Description of Madalin

Setting

Landform: Depressions
Landform position (two-dimensional): Toeslope

Landform position (three-dimensional): Tread
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Clayey and silty glaciolacustrine deposits

Typical profile

H1 - 0 to 9 inches: silt loam
H2 - 9 to 30 inches: silty clay
H3 - 30 to 60 inches: silty clay

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Very poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 0 to 6 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Calcium carbonate, maximum in profile: 15 percent
Available water storage in profile: Moderate (about 8.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4w
Hydrologic Soil Group: C/D

Minor Components

Rhinebeck

Percent of map unit: 5 percent

Vergennes

Percent of map unit: 5 percent
Landform: Depressions

Canandaigua

Percent of map unit: 5 percent
Landform: Depressions

Hudson

Percent of map unit: 5 percent
Landform: Depressions

Kingsbury

Percent of map unit: 5 percent

KrA—Kingsbury and Rhinebeck soils, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 9sgx
Elevation: 80 to 1,000 feet

Mean annual precipitation: 36 to 44 inches
Mean annual air temperature: 45 to 50 degrees F
Frost-free period: 135 to 170 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Kingsbury and similar soils: 40 percent
Rhinebeck and similar soils: 30 percent
Minor components: 30 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Kingsbury

Setting

Landform: Lake plains
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Tread
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Calcareous, clayey glaciomarine deposits or glaciolacustrine deposits

Typical profile

H1 - 0 to 7 inches: clay loam
H2 - 7 to 14 inches: silty clay loam
H3 - 14 to 36 inches: clay
H4 - 36 to 70 inches: stratified silty clay loam to silt loam to very fine sandy loam

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Somewhat poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: About 6 to 18 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 10 percent
Available water storage in profile: Moderate (about 8.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: D

Description of Rhinebeck

Setting

Landform: Lake plains
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Tread
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Clayey and silty glaciolacustrine deposits

Typical profile

H1 - 0 to 7 inches: silt loam

H2 - 7 to 19 inches: silty clay loam
H3 - 19 to 32 inches: silty clay
H4 - 32 to 60 inches: silty clay

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Somewhat poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 6 to 18 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 10 percent
Available water storage in profile: Moderate (about 8.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: C/D

Minor Components

Hudson

Percent of map unit: 5 percent

Shaker

Percent of map unit: 5 percent
Landform: Depressions

Covington

Percent of map unit: 5 percent
Landform: Depressions

Madalin

Percent of map unit: 5 percent
Landform: Depressions

Elmridge

Percent of map unit: 5 percent

Vergennes

Percent of map unit: 5 percent

KrB—Kingsbury and Rhinebeck soils, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 9sgy
Elevation: 80 to 1,000 feet
Mean annual precipitation: 36 to 44 inches
Mean annual air temperature: 45 to 50 degrees F
Frost-free period: 135 to 170 days

Farmland classification: Farmland of statewide importance

Map Unit Composition

Kingsbury and similar soils: 45 percent
Rhinebeck and similar soils: 30 percent
Minor components: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Kingsbury

Setting

Landform: Lake plains
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Tread
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Calcareous, clayey glaciomarine deposits or glaciolacustrine deposits

Typical profile

H1 - 0 to 7 inches: clay loam
H2 - 7 to 14 inches: silty clay loam
H3 - 14 to 36 inches: clay
H4 - 36 to 70 inches: stratified silty clay loam to silt loam to very fine sandy loam

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Somewhat poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: About 6 to 18 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 10 percent
Available water storage in profile: Moderate (about 8.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: D

Description of Rhinebeck

Setting

Landform: Lake plains
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Tread
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Clayey and silty glaciolacustrine deposits

Typical profile

H1 - 0 to 7 inches: silt loam
H2 - 7 to 19 inches: silty clay loam
H3 - 19 to 32 inches: silty clay
H4 - 32 to 60 inches: silty clay

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Somewhat poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 6 to 18 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 10 percent
Available water storage in profile: Moderate (about 8.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: C/D

Minor Components

Elmridge

Percent of map unit: 5 percent

Covington

Percent of map unit: 5 percent
Landform: Depressions

Hudson

Percent of map unit: 5 percent

Madalin

Percent of map unit: 5 percent
Landform: Depressions

Vergennes

Percent of map unit: 5 percent

NrC—Nassau channery silt loam, rolling, very rocky

Map Unit Setting

National map unit symbol: 9sj6
Elevation: 600 to 1,800 feet
Mean annual precipitation: 36 to 44 inches
Mean annual air temperature: 45 to 50 degrees F
Frost-free period: 135 to 170 days
Farmland classification: Not prime farmland

Map Unit Composition

Nassau and similar soils: 70 percent
Minor components: 30 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Nassau

Setting

Landform: Benches, till plains, ridges
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Crest
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Channery loamy till derived mainly from local slate or shale

Typical profile

Oi - 0 to 1 inches: slightly decomposed plant material
H1 - 1 to 4 inches: channery silt loam
H2 - 4 to 19 inches: extremely channery silt loam
H3 - 19 to 23 inches: unweathered bedrock

Properties and qualities

Slope: 8 to 15 percent
Depth to restrictive feature: 10 to 20 inches to lithic bedrock
Natural drainage class: Somewhat excessively drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Very low (about 2.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: D

Minor Components

Rock outcrop

Percent of map unit: 10 percent

Lordstown

Percent of map unit: 5 percent

Arnot

Percent of map unit: 5 percent

Tuller

Percent of map unit: 5 percent

Oquaga

Percent of map unit: 5 percent

VdB—Valois-Nassau complex, undulating

Map Unit Setting

National map unit symbol: 9skq
Elevation: 600 to 1,800 feet
Mean annual precipitation: 36 to 44 inches
Mean annual air temperature: 45 to 50 degrees F
Frost-free period: 135 to 170 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Valois and similar soils: 50 percent
Nassau and similar soils: 30 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Valois

Setting

Landform: Lateral moraines, end moraines, valley sides
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Crest
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loamy till derived mainly from sandstone, siltstone, and shale

Typical profile

H1 - 0 to 8 inches: gravelly loam
H2 - 8 to 34 inches: gravelly loam
H3 - 34 to 60 inches: gravelly silt loam

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 2 percent
Available water storage in profile: Low (about 5.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: B

Description of Nassau

Setting

Landform: Benches, till plains, ridges
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Crest
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Channery loamy till derived mainly from local slate or shale

Typical profile

Oi - 0 to 1 inches: slightly decomposed plant material
H1 - 1 to 4 inches: channery silt loam
H2 - 4 to 19 inches: extremely channery silt loam
H3 - 19 to 23 inches: unweathered bedrock

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: 10 to 20 inches to lithic bedrock
Natural drainage class: Somewhat excessively drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Very low (about 2.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3s
Hydrologic Soil Group: D

Minor Components

Chenango

Percent of map unit: 5 percent

Manlius

Percent of map unit: 5 percent

Mardin

Percent of map unit: 5 percent

Wellsboro

Percent of map unit: 5 percent

VdD—Valois-Nassau complex, hilly

Map Unit Setting

National map unit symbol: 9skr
Elevation: 600 to 1,800 feet

Mean annual precipitation: 36 to 44 inches
Mean annual air temperature: 45 to 50 degrees F
Frost-free period: 135 to 170 days
Farmland classification: Not prime farmland

Map Unit Composition

Nassau and similar soils: 40 percent
Valois and similar soils: 40 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Valois

Setting

Landform: Lateral moraines, end moraines, valley sides
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loamy till derived mainly from sandstone, siltstone, and shale

Typical profile

H1 - 0 to 8 inches: gravelly loam
H2 - 8 to 34 inches: gravelly loam
H3 - 34 to 60 inches: gravelly silt loam

Properties and qualities

Slope: 15 to 25 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 2 percent
Available water storage in profile: Low (about 5.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: B

Description of Nassau

Setting

Landform: Benches, till plains, ridges
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Channery loamy till derived mainly from local slate or shale

Typical profile

Oi - 0 to 1 inches: slightly decomposed plant material
H1 - 1 to 4 inches: channery silt loam
H2 - 4 to 19 inches: extremely channery silt loam

H3 - 19 to 23 inches: unweathered bedrock

Properties and qualities

Slope: 15 to 25 percent
Depth to restrictive feature: 10 to 20 inches to lithic bedrock
Natural drainage class: Somewhat excessively drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Very low (about 2.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: D

Minor Components

Mardin

Percent of map unit: 5 percent

Rock outcrop

Percent of map unit: 5 percent

Lordstown

Percent of map unit: 5 percent

Chenango

Percent of map unit: 5 percent

W—Water

Map Unit Setting

National map unit symbol: 9sl3
Mean annual precipitation: 36 to 44 inches
Mean annual air temperature: 45 to 50 degrees F
Frost-free period: 135 to 170 days
Farmland classification: Not prime farmland

Map Unit Composition

Water: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Wa—Wayland soils complex, non-calcareous substratum, 0 to 3 percent slopes, frequently flooded

Map Unit Setting

National map unit symbol: 2srgt
Elevation: 160 to 1,970 feet
Mean annual precipitation: 31 to 70 inches
Mean annual air temperature: 43 to 52 degrees F
Frost-free period: 105 to 180 days
Farmland classification: Not prime farmland

Map Unit Composition

Wayland and similar soils: 60 percent
Wayland, very poorly drained, and similar soils: 30 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Wayland

Setting

Landform: Flood plains
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Silty and clayey alluvium derived from interbedded sedimentary rock

Typical profile

Ap - 0 to 9 inches: silt loam
Bg - 9 to 21 inches: silt loam
Cg1 - 21 to 28 inches: silt loam
Cg2 - 28 to 47 inches: silt loam
Cg3 - 47 to 54 inches: silt loam
Cg4 - 54 to 60 inches: silt loam

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: About 0 to 6 inches
Frequency of flooding: Frequent
Frequency of ponding: None
Calcium carbonate, maximum in profile: 5 percent
Salinity, maximum in profile: Nonsaline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Very high (about 13.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 5w
Hydrologic Soil Group: B/D

Description of Wayland, Very Poorly Drained

Setting

Landform: Flood plains
Landform position (three-dimensional): Tread
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Silty and clayey alluvium derived from interbedded sedimentary rock

Typical profile

A - 0 to 9 inches: mucky silt loam
Bg - 9 to 21 inches: silt loam
Cg1 - 21 to 28 inches: silt loam
Cg2 - 28 to 47 inches: silt loam
Cg3 - 47 to 54 inches: silt loam
Cg4 - 54 to 60 inches: silt loam

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Very poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: Frequent
Frequency of ponding: Frequent
Calcium carbonate, maximum in profile: 5 percent
Salinity, maximum in profile: Nonsaline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Very high (about 13.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 5w
Hydrologic Soil Group: B/D

Minor Components

Holderton

Percent of map unit: 10 percent
Landform: Flood plains
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear

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Glossary

Many of the terms relating to landforms, geology, and geomorphology are defined in more detail in the "National Soil Survey Handbook."

ABC soil

A soil having an A, a B, and a C horizon.

Ablation till

Loose, relatively permeable earthy material deposited during the downwasting of nearly static glacial ice, either contained within or accumulated on the surface of the glacier.

AC soil

A soil having only an A and a C horizon. Commonly, such soil formed in recent alluvium or on steep, rocky slopes.

Aeration, soil

The exchange of air in soil with air from the atmosphere. The air in a well aerated soil is similar to that in the atmosphere; the air in a poorly aerated soil is considerably higher in carbon dioxide and lower in oxygen.

Aggregate, soil

Many fine particles held in a single mass or cluster. Natural soil aggregates, such as granules, blocks, or prisms, are called peds. Clods are aggregates produced by tillage or logging.

Alkali (sodic) soil

A soil having so high a degree of alkalinity (pH 8.5 or higher) or so high a percentage of exchangeable sodium (15 percent or more of the total exchangeable bases), or both, that plant growth is restricted.

Alluvial cone

A semiconical type of alluvial fan having very steep slopes. It is higher, narrower, and steeper than a fan and is composed of coarser and thicker layers of material deposited by a combination of alluvial episodes and (to a much lesser degree) landslides (debris flow). The coarsest materials tend to be concentrated at the apex of the cone.

Alluvial fan

A low, outspread mass of loose materials and/or rock material, commonly with gentle slopes. It is shaped like an open fan or a segment of a cone. The material was deposited by a stream at the place where it issues from a narrow mountain valley or upland valley or where a tributary stream is near or at its junction with the main stream. The fan is steepest near its apex, which points upstream, and slopes gently and convexly outward (downstream) with a gradual decrease in gradient.

Alluvium

Unconsolidated material, such as gravel, sand, silt, clay, and various mixtures of these, deposited on land by running water.

Alpha,alpha-dipyridyl

A compound that when dissolved in ammonium acetate is used to detect the presence of reduced iron (Fe II) in the soil. A positive reaction implies reducing conditions and the likely presence of redoximorphic features.

Animal unit month (AUM)

The amount of forage required by one mature cow of approximately 1,000 pounds weight, with or without a calf, for 1 month.

Aquic conditions

Current soil wetness characterized by saturation, reduction, and redoximorphic features.

Argillic horizon

A subsoil horizon characterized by an accumulation of illuvial clay.

Arroyo

The flat-floored channel of an ephemeral stream, commonly with very steep to vertical banks cut in unconsolidated material. It is usually dry but can be transformed into a temporary watercourse or short-lived torrent after heavy rain within the watershed.

Aspect

The direction toward which a slope faces. Also called slope aspect.

Association, soil

A group of soils or miscellaneous areas geographically associated in a characteristic repeating pattern and defined and delineated as a single map unit.

Available water capacity (available moisture capacity)

The capacity of soils to hold water available for use by most plants. It is commonly defined as the difference between the amount of soil water at field moisture capacity and the amount at wilting point. It is commonly expressed as inches of water per inch of soil. The capacity, in inches, in a 60-inch profile or to a limiting layer is expressed as:

Very low: 0 to 3
Low: 3 to 6
Moderate: 6 to 9
High: 9 to 12
Very high: More than 12

Backslope

The position that forms the steepest and generally linear, middle portion of a hillslope. In profile, backslopes are commonly bounded by a convex shoulder above and a concave footslope below.

Backswamp

A flood-plain landform. Extensive, marshy or swampy, depressed areas of flood plains between natural levees and valley sides or terraces.

Badland

A landscape that is intricately dissected and characterized by a very fine drainage network with high drainage densities and short, steep slopes and narrow interfluves. Badlands develop on surfaces that have little or no vegetative cover overlying unconsolidated or poorly cemented materials (clays, silts, or sandstones) with, in some cases, soluble minerals, such as gypsum or halite.

Bajada

A broad, gently inclined alluvial piedmont slope extending from the base of a mountain range out into a basin and formed by the lateral coalescence of a series of alluvial fans. Typically, it has a broadly undulating transverse profile, parallel to the mountain front, resulting from the convexities of component fans. The term is generally restricted to constructional slopes of intermontane basins.

Basal area

The area of a cross section of a tree, generally referring to the section at breast height and measured outside the bark. It is a measure of stand density, commonly expressed in square feet.

Base saturation

The degree to which material having cation-exchange properties is saturated with exchangeable bases (sum of Ca, Mg, Na, and K), expressed as a percentage of the total cation-exchange capacity.

Base slope (geomorphology)

A geomorphic component of hills consisting of the concave to linear (perpendicular to the contour) slope that, regardless of the lateral shape, forms an apron or wedge at the bottom of a hillside dominated by colluvium and slope-wash sediments (for example, slope alluvium).

Bedding plane

A planar or nearly planar bedding surface that visibly separates each successive layer of stratified sediment or rock (of the same or different lithology) from the preceding or following layer; a plane of deposition. It commonly marks a change in the circumstances of deposition and may show a parting, a color difference, a change in particle size, or various combinations of these. The term is commonly applied to any bedding surface, even one that is conspicuously bent or deformed by folding.

Bedding system

A drainage system made by plowing, grading, or otherwise shaping the surface of a flat field. It consists of a series of low ridges separated by shallow, parallel dead furrows.

Bedrock

The solid rock that underlies the soil and other unconsolidated material or that is exposed at the surface.

Bedrock-controlled topography

A landscape where the configuration and relief of the landforms are determined or strongly influenced by the underlying bedrock.

Bench terrace

A raised, level or nearly level strip of earth constructed on or nearly on a contour, supported by a barrier of rocks or similar material, and designed to make the soil suitable for tillage and to prevent accelerated erosion.

Bisequum

Two sequences of soil horizons, each of which consists of an illuvial horizon and the overlying eluvial horizons.

Blowout (map symbol)

A saucer-, cup-, or trough-shaped depression formed by wind erosion on a preexisting dune or other sand deposit, especially in an area of shifting sand or loose soil or where protective vegetation is disturbed or destroyed. The adjoining accumulation of sand derived from the depression, where recognizable, is commonly included. Blowouts are commonly small.

Borrow pit (map symbol)

An open excavation from which soil and underlying material have been removed, usually for construction purposes.

Bottom land

An informal term loosely applied to various portions of a flood plain.

Boulders

Rock fragments larger than 2 feet (60 centimeters) in diameter.

Breaks

A landscape or tract of steep, rough or broken land dissected by ravines and gullies and marking a sudden change in topography.

Breast height

An average height of 4.5 feet above the ground surface; the point on a tree where diameter measurements are ordinarily taken.

Brush management

Use of mechanical, chemical, or biological methods to make conditions favorable for reseeding or to reduce or eliminate competition from woody vegetation and thus allow understory grasses and forbs to recover. Brush management increases forage production and thus reduces the hazard of erosion. It can improve the habitat for some species of wildlife.

Butte

An isolated, generally flat-topped hill or mountain with relatively steep slopes and talus or precipitous cliffs and characterized by summit width that is less than the height of bounding escarpments; commonly topped by a caprock of resistant material and representing an erosion remnant carved from flat-lying rocks.

Cable yarding

A method of moving felled trees to a nearby central area for transport to a processing facility. Most cable yarding systems involve use of a drum, a pole, and wire cables in an arrangement similar to that of a rod and reel used for fishing. To reduce friction and soil disturbance, felled trees generally are reeled in while one end is lifted or the entire log is suspended.

Calcareous soil

A soil containing enough calcium carbonate (commonly combined with magnesium carbonate) to effervesce visibly when treated with cold, dilute hydrochloric acid.

Caliche

A general term for a prominent zone of secondary carbonate accumulation in surficial materials in warm, subhumid to arid areas. Caliche is formed by both geologic and pedologic processes. Finely crystalline calcium carbonate forms a nearly continuous surface-coating and void-filling medium in geologic (parent) materials. Cementation ranges from weak in nonindurated forms to very strong in indurated forms. Other minerals (e.g., carbonates, silicate, and sulfate) may occur as accessory cements. Most petrocalcic horizons and some calcic horizons are caliche.

California bearing ratio (CBR)

The load-supporting capacity of a soil as compared to that of standard crushed limestone, expressed as a ratio. First standardized in California. A soil having a CBR of 16 supports 16 percent of the load that would be supported by standard crushed limestone, per unit area, with the same degree of distortion.

Canopy

The leafy crown of trees or shrubs. (See Crown.)

Canyon

A long, deep, narrow valley with high, precipitous walls in an area of high local relief.

Capillary water

Water held as a film around soil particles and in tiny spaces between particles. Surface tension is the adhesive force that holds capillary water in the soil.

Catena

A sequence, or "chain," of soils on a landscape that formed in similar kinds of parent material and under similar climatic conditions but that have different characteristics as a result of differences in relief and drainage.

Cation

An ion carrying a positive charge of electricity. The common soil cations are calcium, potassium, magnesium, sodium, and hydrogen.

Cation-exchange capacity

The total amount of exchangeable cations that can be held by the soil, expressed in terms of milliequivalents per 100 grams of soil at neutrality (pH 7.0) or at some other stated pH value. The term, as applied to soils, is synonymous with base-exchange capacity but is more precise in meaning.

Catsteps

See Terracettes.

Cement rock

Shaly limestone used in the manufacture of cement.

Channery soil material

Soil material that has, by volume, 15 to 35 percent thin, flat fragments of sandstone, shale, slate, limestone, or schist as much as 6 inches (15 centimeters) along the longest axis. A single piece is called a channer.

Chemical treatment

Control of unwanted vegetation through the use of chemicals.

Chiseling

Tillage with an implement having one or more soil-penetrating points that shatter or loosen hard, compacted layers to a depth below normal plow depth.

Cirque

A steep-walled, semicircular or crescent-shaped, half-bowl-like recess or hollow, commonly situated at the head of a glaciated mountain valley or high on the side of a mountain. It was produced by the erosive activity of a mountain glacier. It commonly contains a small round lake (tarn).

Clay

As a soil separate, the mineral soil particles less than 0.002 millimeter in diameter. As a soil textural class, soil material that is 40 percent or more clay, less than 45 percent sand, and less than 40 percent silt.

Clay depletions

See Redoximorphic features.

Clay film

A thin coating of oriented clay on the surface of a soil aggregate or lining pores or root channels. Synonyms: clay coating, clay skin.

Clay spot (map symbol)

A spot where the surface texture is silty clay or clay in areas where the surface layer of the soils in the surrounding map unit is sandy loam, loam, silt loam, or coarser.

Claypan

A dense, compact subsoil layer that contains much more clay than the overlying materials, from which it is separated by a sharply defined boundary. The layer restricts the downward movement of water through the soil. A claypan is commonly hard when dry and plastic and sticky when wet.

Climax plant community

The stabilized plant community on a particular site. The plant cover reproduces itself and does not change so long as the environment remains the same.

Coarse textured soil

Sand or loamy sand.

Cobble (or cobblestone)

A rounded or partly rounded fragment of rock 3 to 10 inches (7.6 to 25 centimeters) in diameter.

Cobbly soil material

Material that has 15 to 35 percent, by volume, rounded or partially rounded rock fragments 3 to 10 inches (7.6 to 25 centimeters) in diameter. Very cobbly soil material has 35 to 60 percent of these rock fragments, and extremely cobbly soil material has more than 60 percent.

COLE (coefficient of linear extensibility)

See Linear extensibility.

Colluvium

Unconsolidated, unsorted earth material being transported or deposited on side slopes and/or at the base of slopes by mass movement (e.g., direct gravitational action) and by local, unconcentrated runoff.

Complex slope

Irregular or variable slope. Planning or establishing terraces, diversions, and other water-control structures on a complex slope is difficult.

Complex, soil

A map unit of two or more kinds of soil or miscellaneous areas in such an intricate pattern or so small in area that it is not practical to map them separately at the selected scale of mapping. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas.

Concretions

See Redoximorphic features.

Conglomerate

A coarse grained, clastic sedimentary rock composed of rounded or subangular rock fragments more than 2 millimeters in diameter. It commonly has a matrix of sand and finer textured material. Conglomerate is the consolidated equivalent of gravel.

Conservation cropping system

Growing crops in combination with needed cultural and management practices. In a good conservation cropping system, the soil-improving crops and practices more than offset the effects of the soil-depleting crops and practices. Cropping systems are needed on all tilled soils. Soil-improving practices in a conservation cropping system include the use of rotations that contain grasses and legumes and the return of crop residue to the soil. Other practices include the use of green manure crops of grasses and legumes, proper tillage, adequate fertilization, and weed and pest control.

Conservation tillage

A tillage system that does not invert the soil and that leaves a protective amount of crop residue on the surface throughout the year.

Consistence, soil

Refers to the degree of cohesion and adhesion of soil material and its resistance to deformation when ruptured. Consistence includes resistance of soil material to rupture and to penetration; plasticity, toughness, and stickiness of puddled soil material; and the manner in which the soil material behaves when subject to compression. Terms describing consistence are defined in the "Soil Survey Manual."

Contour stripcropping

Growing crops in strips that follow the contour. Strips of grass or close-growing crops are alternated with strips of clean-tilled crops or summer fallow.

Control section

The part of the soil on which classification is based. The thickness varies among different kinds of soil, but for many it is that part of the soil profile between depths of 10 inches and 40 or 80 inches.

Coprogenous earth (sedimentary peat)

A type of limnic layer composed predominantly of fecal material derived from aquatic animals.

Corrosion (geomorphology)

A process of erosion whereby rocks and soil are removed or worn away by natural chemical processes, especially by the solvent action of running water, but also by other reactions, such as hydrolysis, hydration, carbonation, and oxidation.

Corrosion (soil survey interpretations)

Soil-induced electrochemical or chemical action that dissolves or weakens concrete or uncoated steel.

Cover crop

A close-growing crop grown primarily to improve and protect the soil between periods of regular crop production, or a crop grown between trees and vines in orchards and vineyards.

Crop residue management

Returning crop residue to the soil, which helps to maintain soil structure, organic matter content, and fertility and helps to control erosion.

Cropping system

Growing crops according to a planned system of rotation and management practices.

Cross-slope farming

Deliberately conducting farming operations on sloping farmland in such a way that tillage is across the general slope.

Crown

The upper part of a tree or shrub, including the living branches and their foliage.

Cryoturbate

A mass of soil or other unconsolidated earthy material moved or disturbed by frost action. It is typically coarser than the underlying material.

Cuesta

An asymmetric ridge capped by resistant rock layers of slight or moderate dip (commonly less than 15 percent slopes); a type of homocline produced by differential erosion of interbedded resistant and weak rocks. A cuesta has a long, gentle slope on one side (dip slope) that roughly parallels the inclined beds; on the other side, it has a relatively short and steep or clifflike slope (scarp) that cuts through the tilted rocks.

Culmination of the mean annual increment (CMAI)

The average annual increase per acre in the volume of a stand. Computed by dividing the total volume of the stand by its age. As the stand increases in age, the mean annual increment continues to increase until mortality begins to reduce the rate of increase. The point where the stand reaches its maximum annual rate of growth is called the culmination of the mean annual increment.

Cutbanks cave

The walls of excavations tend to cave in or slough.

Decreasers

The most heavily grazed climax range plants. Because they are the most palatable, they are the first to be destroyed by overgrazing.

Deferred grazing

Postponing grazing or resting grazing land for a prescribed period.

Delta

A body of alluvium having a surface that is fan shaped and nearly flat; deposited at or near the mouth of a river or stream where it enters a body of relatively quiet water, generally a sea or lake.

Dense layer

A very firm, massive layer that has a bulk density of more than 1.8 grams per cubic centimeter. Such a layer affects the ease of digging and can affect filling and compacting.

Depression, closed (map symbol)

A shallow, saucer-shaped area that is slightly lower on the landscape than the surrounding area and that does not have a natural outlet for surface drainage.

Depth, soil

Generally, the thickness of the soil over bedrock. Very deep soils are more than 60 inches deep over bedrock; deep soils, 40 to 60 inches; moderately deep, 20 to 40 inches; shallow, 10 to 20 inches; and very shallow, less than 10 inches.

Desert pavement

A natural, residual concentration or layer of wind-polished, closely packed gravel, boulders, and other rock fragments mantling a desert surface. It forms where wind action and sheetwash have removed all smaller particles or where rock fragments have migrated upward through sediments to the surface. It typically protects the finer grained underlying material from further erosion.

Diatomaceous earth

A geologic deposit of fine, grayish siliceous material composed chiefly or entirely of the remains of diatoms.

Dip slope

A slope of the land surface, roughly determined by and approximately conforming to the dip of the underlying bedrock.

Diversion (or diversion terrace)

A ridge of earth, generally a terrace, built to protect downslope areas by diverting runoff from its natural course.

Divided-slope farming

A form of field stripcropping in which crops are grown in a systematic arrangement of two strips, or bands, across the slope to reduce the hazard of water erosion. One strip is in a close-growing crop that provides protection from erosion, and the other strip is in a crop that provides less protection from erosion. This practice is used where slopes are not long enough to permit a full stripcropping pattern to be used.

Drainage class (natural)

Refers to the frequency and duration of wet periods under conditions similar to those under which the soil formed. Alterations of the water regime by human activities, either through drainage or irrigation, are not a consideration unless they have significantly changed the morphology of the soil. Seven classes of natural soil drainage are recognized—*excessively drained, somewhat excessively drained, well drained, moderately well drained, somewhat poorly drained, poorly drained,* and *very poorly drained.* These classes are defined in the "Soil Survey Manual."

Drainage, surface

Runoff, or surface flow of water, from an area.

Drainageway

A general term for a course or channel along which water moves in draining an area. A term restricted to relatively small, linear depressions that at some time move concentrated water and either do not have a defined channel or have only a small defined channel.

Draw

A small stream valley that generally is shallower and more open than a ravine or gulch and that has a broader bottom. The present stream channel may appear inadequate to have cut the drainageway that it occupies.

Drift

A general term applied to all mineral material (clay, silt, sand, gravel, and boulders) transported by a glacier and deposited directly by or from the ice or transported by running water emanating from a glacier. Drift includes unstratified material (till) that forms moraines and stratified deposits that form outwash plains, eskers, kames, varves, and glaciofluvial sediments. The term is generally applied to Pleistocene glacial deposits in areas that no longer contain glaciers.

Drumlin

A low, smooth, elongated oval hill, mound, or ridge of compact till that has a core of bedrock or drift. It commonly has a blunt nose facing the direction from which the ice approached and a gentler slope tapering in the other direction. The longer axis is parallel to the general direction of glacier flow. Drumlins are products of streamline (laminar) flow of glaciers, which molded the subglacial floor through a combination of erosion and deposition.

Duff

A generally firm organic layer on the surface of mineral soils. It consists of fallen plant material that is in the process of decomposition and includes everything from the litter on the surface to underlying pure humus.

Dune

A low mound, ridge, bank, or hill of loose, windblown granular material (generally sand), either barren and capable of movement from place to place or covered and stabilized with vegetation but retaining its characteristic shape.

Earthy fill

See Mine spoil.

Ecological site

An area where climate, soil, and relief are sufficiently uniform to produce a distinct natural plant community. An ecological site is the product of all the environmental factors responsible for its development. It is typified by an association of species that differ from those on other ecological sites in kind and/or proportion of species or in total production.

Eluviation

The movement of material in true solution or colloidal suspension from one place to another within the soil. Soil horizons that have lost material through eluviation are eluvial; those that have received material are illuvial.

Endosaturation

A type of saturation of the soil in which all horizons between the upper boundary of saturation and a depth of 2 meters are saturated.

Eolian deposit

Sand-, silt-, or clay-sized clastic material transported and deposited primarily by wind, commonly in the form of a dune or a sheet of sand or loess.

Ephemeral stream

A stream, or reach of a stream, that flows only in direct response to precipitation. It receives no long-continued supply from melting snow or other source, and its channel is above the water table at all times.

Episaturation

A type of saturation indicating a perched water table in a soil in which saturated layers are underlain by one or more unsaturated layers within 2 meters of the surface.

Erosion

The wearing away of the land surface by water, wind, ice, or other geologic agents and by such processes as gravitational creep.

Erosion (accelerated)

Erosion much more rapid than geologic erosion, mainly as a result of human or animal activities or of a catastrophe in nature, such as a fire, that exposes the surface.

Erosion (geologic)

Erosion caused by geologic processes acting over long geologic periods and resulting in the wearing away of mountains and the building up of such landscape features as flood plains and coastal plains. Synonym: natural erosion.

Erosion pavement

A surficial lag concentration or layer of gravel and other rock fragments that remains on the soil surface after sheet or rill erosion or wind has removed the finer soil particles and that tends to protect the underlying soil from further erosion.

Erosion surface

A land surface shaped by the action of erosion, especially by running water.

Escarpment

A relatively continuous and steep slope or cliff breaking the general continuity of more gently sloping land surfaces and resulting from erosion or faulting. Most commonly applied to cliffs produced by differential erosion. Synonym: scarp.

Escarpment, bedrock (map symbol)

A relatively continuous and steep slope or cliff, produced by erosion or faulting, that breaks the general continuity of more gently sloping land surfaces. Exposed material is hard or soft bedrock.

Escarpment, nonbedrock (map symbol)

A relatively continuous and steep slope or cliff, generally produced by erosion but in some places produced by faulting, that breaks the continuity of more gently sloping land surfaces. Exposed earthy material is nonsoil or very shallow soil.

Esker

A long, narrow, sinuous, steep-sided ridge of stratified sand and gravel deposited as the bed of a stream flowing in an ice tunnel within or below the ice (subglacial) or between ice walls on top of the ice of a wasting glacier and left behind as high ground when the ice melted. Eskers range in length from less than a kilometer to more than 160 kilometers and in height from 3 to 30 meters.

Extrusive rock

Igneous rock derived from deep-seated molten matter (magma) deposited and cooled on the earth's surface.

Fallow

Cropland left idle in order to restore productivity through accumulation of moisture. Summer fallow is common in regions of limited rainfall where cereal grain is grown.

The soil is tilled for at least one growing season for weed control and decomposition of plant residue.

Fan remnant

A general term for landforms that are the remaining parts of older fan landforms, such as alluvial fans, that have been either dissected or partially buried.

Fertility, soil

The quality that enables a soil to provide plant nutrients, in adequate amounts and in proper balance, for the growth of specified plants when light, moisture, temperature, tilth, and other growth factors are favorable.

Fibric soil material (peat)

The least decomposed of all organic soil material. Peat contains a large amount of well preserved fiber that is readily identifiable according to botanical origin. Peat has the lowest bulk density and the highest water content at saturation of all organic soil material.

Field moisture capacity

The moisture content of a soil, expressed as a percentage of the ovendry weight, after the gravitational, or free, water has drained away; the field moisture content 2 or 3 days after a soaking rain; also called *normal field capacity, normal moisture capacity,* or *capillary capacity.*

Fill slope

A sloping surface consisting of excavated soil material from a road cut. It commonly is on the downhill side of the road.

Fine textured soil

Sandy clay, silty clay, or clay.

Firebreak

An area cleared of flammable material to stop or help control creeping or running fires. It also serves as a line from which to work and to facilitate the movement of firefighters and equipment. Designated roads also serve as firebreaks.

First bottom

An obsolete, informal term loosely applied to the lowest flood-plain steps that are subject to regular flooding.

Flaggy soil material

Material that has, by volume, 15 to 35 percent flagstones. Very flaggy soil material has 35 to 60 percent flagstones, and extremely flaggy soil material has more than 60 percent flagstones.

Flagstone

A thin fragment of sandstone, limestone, slate, shale, or (rarely) schist 6 to 15 inches (15 to 38 centimeters) long.

Flood plain

The nearly level plain that borders a stream and is subject to flooding unless protected artificially.

Flood-plain landforms

A variety of constructional and erosional features produced by stream channel migration and flooding. Examples include backswamps, flood-plain splays, meanders, meander belts, meander scrolls, oxbow lakes, and natural levees.

Flood-plain splay

A fan-shaped deposit or other outspread deposit formed where an overloaded stream breaks through a levee (natural or artificial) and deposits its material (commonly coarse grained) on the flood plain.

Flood-plain step

An essentially flat, terrace-like alluvial surface within a valley that is frequently covered by floodwater from the present stream; any approximately horizontal surface still actively modified by fluvial scour and/or deposition. May occur individually or as a series of steps.

Fluvial

Of or pertaining to rivers or streams; produced by stream or river action.

Foothills

A region of steeply sloping hills that fringes a mountain range or high-plateau escarpment. The hills have relief of as much as 1,000 feet (300 meters).

Footslope

The concave surface at the base of a hillslope. A footslope is a transition zone between upslope sites of erosion and transport (shoulders and backslopes) and downslope sites of deposition (toeslopes).

Forb

Any herbaceous plant not a grass or a sedge.

Forest cover

All trees and other woody plants (underbrush) covering the ground in a forest.

Forest type

A stand of trees similar in composition and development because of given physical and biological factors by which it may be differentiated from other stands.

Fragipan

A loamy, brittle subsurface horizon low in porosity and content of organic matter and low or moderate in clay but high in silt or very fine sand. A fragipan appears cemented and restricts roots. When dry, it is hard or very hard and has a higher bulk density than the horizon or horizons above. When moist, it tends to rupture suddenly under pressure rather than to deform slowly.

Genesis, soil

The mode of origin of the soil. Refers especially to the processes or soil-forming factors responsible for the formation of the solum, or true soil, from the unconsolidated parent material.

Gilgai

Commonly, a succession of microbasins and microknolls in nearly level areas or of microvalleys and microridges parallel with the slope. Typically, the microrelief of clayey soils that shrink and swell considerably with changes in moisture content.

Glaciofluvial deposits

Material moved by glaciers and subsequently sorted and deposited by streams flowing from the melting ice. The deposits are stratified and occur in the form of outwash plains, valley trains, deltas, kames, eskers, and kame terraces.

Glaciolacustrine deposits

Material ranging from fine clay to sand derived from glaciers and deposited in glacial lakes mainly by glacial meltwater. Many deposits are bedded or laminated.

Gleyed soil

Soil that formed under poor drainage, resulting in the reduction of iron and other elements in the profile and in gray colors.

Graded stripcropping

Growing crops in strips that grade toward a protected waterway.

Grassed waterway

A natural or constructed waterway, typically broad and shallow, seeded to grass as protection against erosion. Conducts surface water away from cropland.

Gravel

Rounded or angular fragments of rock as much as 3 inches (2 millimeters to 7.6 centimeters) in diameter. An individual piece is a pebble.

Gravel pit (map symbol)

An open excavation from which soil and underlying material have been removed and used, without crushing, as a source of sand or gravel.

Gravelly soil material

Material that has 15 to 35 percent, by volume, rounded or angular rock fragments, not prominently flattened, as much as 3 inches (7.6 centimeters) in diameter.

Gravelly spot (map symbol)

A spot where the surface layer has more than 35 percent, by volume, rock fragments that are mostly less than 3 inches in diameter in an area that has less than 15 percent rock fragments.

Green manure crop (agronomy)

A soil-improving crop grown to be plowed under in an early stage of maturity or soon after maturity.

Ground water

Water filling all the unblocked pores of the material below the water table.

Gully (map symbol)

A small, steep-sided channel caused by erosion and cut in unconsolidated materials by concentrated but intermittent flow of water. The distinction between a gully and a rill is one of depth. A gully generally is an obstacle to farm machinery and is too deep to be obliterated by ordinary tillage whereas a rill is of lesser depth and can be smoothed over by ordinary tillage.

Hard bedrock

Bedrock that cannot be excavated except by blasting or by the use of special equipment that is not commonly used in construction.

Hard to reclaim

Reclamation is difficult after the removal of soil for construction and other uses. Revegetation and erosion control are extremely difficult.

Hardpan

A hardened or cemented soil horizon, or layer. The soil material is sandy, loamy, or clayey and is cemented by iron oxide, silica, calcium carbonate, or other substance.

Head slope (geomorphology)

A geomorphic component of hills consisting of a laterally concave area of a hillside, especially at the head of a drainageway. The overland waterflow is converging.

Hemic soil material (mucky peat)

Organic soil material intermediate in degree of decomposition between the less decomposed fibric material and the more decomposed sapric material.

High-residue crops

Such crops as small grain and corn used for grain. If properly managed, residue from these crops can be used to control erosion until the next crop in the rotation is established. These crops return large amounts of organic matter to the soil.

Hill

A generic term for an elevated area of the land surface, rising as much as 1,000 feet above surrounding lowlands, commonly of limited summit area and having a well defined outline. Slopes are generally more than 15 percent. The distinction between a hill and a mountain is arbitrary and may depend on local usage.

Hillslope

A generic term for the steeper part of a hill between its summit and the drainage line, valley flat, or depression floor at the base of a hill.

Horizon, soil

A layer of soil, approximately parallel to the surface, having distinct characteristics produced by soil-forming processes. In the identification of soil horizons, an uppercase letter represents the major horizons. Numbers or lowercase letters that follow represent subdivisions of the major horizons. An explanation of the subdivisions is given in the "Soil Survey Manual." The major horizons of mineral soil are as follows:

O horizon: An organic layer of fresh and decaying plant residue.

L horizon: A layer of organic and mineral limnic materials, including coprogenous earth (sedimentary peat), diatomaceous earth, and marl.

A horizon: The mineral horizon at or near the surface in which an accumulation of humified organic matter is mixed with the mineral material. Also, a plowed surface horizon, most of which was originally part of a B horizon.

E horizon: The mineral horizon in which the main feature is loss of silicate clay, iron, aluminum, or some combination of these.

B horizon: The mineral horizon below an A horizon. The B horizon is in part a layer of transition from the overlying A to the underlying C horizon. The B horizon also has distinctive characteristics, such as (1) accumulation of clay, sesquioxides, humus, or a combination of these; (2) prismatic or blocky structure; (3) redder or browner colors than those in the A horizon; or (4) a combination of these.

C horizon: The mineral horizon or layer, excluding indurated bedrock, that is little affected by soil-forming processes and does not have the properties typical of the overlying soil material. The material of a C horizon may be either like or unlike that in which the solum formed. If the material is known to differ from that in the solum, an Arabic numeral, commonly a 2, precedes the letter C.

Cr horizon: Soft, consolidated bedrock beneath the soil.

R layer: Consolidated bedrock beneath the soil. The bedrock commonly underlies a C horizon, but it can be directly below an A or a B horizon.

M layer: A root-limiting subsoil layer consisting of nearly continuous, horizontally oriented, human-manufactured materials.

W layer: A layer of water within or beneath the soil.

Humus

The well decomposed, more or less stable part of the organic matter in mineral soils.

Hydrologic soil groups

Refers to soils grouped according to their runoff potential. The soil properties that influence this potential are those that affect the minimum rate of water infiltration on a bare soil during periods after prolonged wetting when the soil is not frozen. These properties include depth to a seasonal high water table, the infiltration rate, and depth to a layer that significantly restricts the downward movement of water. The slope and the kind of plant cover are not considered but are separate factors in predicting runoff.

Igneous rock

Rock that was formed by cooling and solidification of magma and that has not been changed appreciably by weathering since its formation. Major varieties include plutonic and volcanic rock (e.g., andesite, basalt, and granite).

Illuviation

The movement of soil material from one horizon to another in the soil profile. Generally, material is removed from an upper horizon and deposited in a lower horizon.

Impervious soil

A soil through which water, air, or roots penetrate slowly or not at all. No soil is absolutely impervious to air and water all the time.

Increasers

Species in the climax vegetation that increase in amount as the more desirable plants are reduced by close grazing. Increasers commonly are the shorter plants and the less palatable to livestock.

Infiltration

The downward entry of water into the immediate surface of soil or other material, as contrasted with percolation, which is movement of water through soil layers or material.

Infiltration capacity

The maximum rate at which water can infiltrate into a soil under a given set of conditions.

Infiltration rate

The rate at which water penetrates the surface of the soil at any given instant, usually expressed in inches per hour. The rate can be limited by the infiltration capacity of the soil or the rate at which water is applied at the surface.

Intake rate

The average rate of water entering the soil under irrigation. Most soils have a fast initial rate; the rate decreases with application time. Therefore, intake rate for design purposes is not a constant but is a variable depending on the net irrigation application. The rate of water intake, in inches per hour, is expressed as follows:

Very low: Less than 0.2
Low: 0.2 to 0.4
Moderately low: 0.4 to 0.75
Moderate: 0.75 to 1.25
Moderately high: 1.25 to 1.75
High: 1.75 to 2.5
Very high: More than 2.5

Interfluve

A landform composed of the relatively undissected upland or ridge between two adjacent valleys containing streams flowing in the same general direction. An elevated area between two drainageways that sheds water to those drainageways.

Interfluve (geomorphology)

A geomorphic component of hills consisting of the uppermost, comparatively level or gently sloping area of a hill; shoulders of backwearing hillslopes can narrow the upland or can merge, resulting in a strongly convex shape.

Intermittent stream

A stream, or reach of a stream, that does not flow year-round but that is commonly dry for 3 or more months out of 12 and whose channel is generally below the local water table. It flows only during wet periods or when it receives ground-water discharge or long, continued contributions from melting snow or other surface and shallow subsurface sources.

Invaders

On range, plants that encroach into an area and grow after the climax vegetation has been reduced by grazing. Generally, plants invade following disturbance of the surface.

Iron depletions

See Redoximorphic features.

Irrigation

Application of water to soils to assist in production of crops. Methods of irrigation are:

Basin: Water is applied rapidly to nearly level plains surrounded by levees or dikes.

Border: Water is applied at the upper end of a strip in which the lateral flow of water is controlled by small earth ridges called border dikes, or borders.

Controlled flooding: Water is released at intervals from closely spaced field ditches and distributed uniformly over the field.

Corrugation: Water is applied to small, closely spaced furrows or ditches in fields of close-growing crops or in orchards so that it flows in only one direction.

Drip (or trickle): Water is applied slowly and under low pressure to the surface of the soil or into the soil through such applicators as emitters, porous tubing, or perforated pipe.

Furrow: Water is applied in small ditches made by cultivation implements. Furrows are used for tree and row crops.

Sprinkler: Water is sprayed over the soil surface through pipes or nozzles from a pressure system.

Subirrigation: Water is applied in open ditches or tile lines until the water table is raised enough to wet the soil.

Wild flooding: Water, released at high points, is allowed to flow onto an area without controlled distribution.

Kame

A low mound, knob, hummock, or short irregular ridge composed of stratified sand and gravel deposited by a subglacial stream as a fan or delta at the margin of a melting glacier; by a supraglacial stream in a low place or hole on the surface of the glacier; or as a ponded deposit on the surface or at the margin of stagnant ice.

Karst (topography)

A kind of topography that formed in limestone, gypsum, or other soluble rocks by dissolution and that is characterized by closed depressions, sinkholes, caves, and underground drainage.

Knoll

A small, low, rounded hill rising above adjacent landforms.

Ksat

See Saturated hydraulic conductivity.

Lacustrine deposit

Material deposited in lake water and exposed when the water level is lowered or the elevation of the land is raised.

Lake plain

A nearly level surface marking the floor of an extinct lake filled by well sorted, generally fine textured, stratified deposits, commonly containing varves.

Lake terrace

A narrow shelf, partly cut and partly built, produced along a lakeshore in front of a scarp line of low cliffs and later exposed when the water level falls.

Landfill (map symbol)

An area of accumulated waste products of human habitation, either above or below natural ground level.

Landslide

A general, encompassing term for most types of mass movement landforms and processes involving the downslope transport and outward deposition of soil and rock materials caused by gravitational forces; the movement may or may not involve saturated materials. The speed and distance of movement, as well as the amount of soil and rock material, vary greatly.

Large stones

Rock fragments 3 inches (7.6 centimeters) or more across. Large stones adversely affect the specified use of the soil.

Lava flow (map symbol)

A solidified, commonly lobate body of rock formed through lateral, surface outpouring of molten lava from a vent or fissure.

Leaching

The removal of soluble material from soil or other material by percolating water.

Levee (map symbol)

An embankment that confines or controls water, especially one built along the banks of a river to prevent overflow onto lowlands.

Linear extensibility

Refers to the change in length of an unconfined clod as moisture content is decreased from a moist to a dry state. Linear extensibility is used to determine the shrink-swell potential of soils. It is an expression of the volume change between the water content of the clod at $^1/_3$- or $^1/_{10}$-bar tension (33kPa or 10kPa tension) and oven dryness. Volume change is influenced by the amount and type of clay minerals in the soil. The volume change is the percent change for the whole soil. If it is expressed as a fraction, the resulting value is COLE, coefficient of linear extensibility.

Liquid limit

The moisture content at which the soil passes from a plastic to a liquid state.

Loam

Soil material that is 7 to 27 percent clay particles, 28 to 50 percent silt particles, and less than 52 percent sand particles.

Loess

Material transported and deposited by wind and consisting dominantly of silt-sized particles.

Low strength

The soil is not strong enough to support loads.

Low-residue crops

Such crops as corn used for silage, peas, beans, and potatoes. Residue from these crops is not adequate to control erosion until the next crop in the rotation is established. These crops return little organic matter to the soil.

Marl

An earthy, unconsolidated deposit consisting chiefly of calcium carbonate mixed with clay in approximately equal proportions; formed primarily under freshwater lacustrine conditions but also formed in more saline environments.

Marsh or swamp (map symbol)

A water-saturated, very poorly drained area that is intermittently or permanently covered by water. Sedges, cattails, and rushes are the dominant vegetation in marshes, and trees or shrubs are the dominant vegetation in swamps. Not used in map units where the named soils are poorly drained or very poorly drained.

Mass movement

A generic term for the dislodgment and downslope transport of soil and rock material as a unit under direct gravitational stress.

Masses

See Redoximorphic features.

Meander belt

The zone within which migration of a meandering channel occurs; the flood-plain area included between two imaginary lines drawn tangential to the outer bends of active channel loops.

Meander scar

A crescent-shaped, concave or linear mark on the face of a bluff or valley wall, produced by the lateral erosion of a meandering stream that impinged upon and undercut the bluff.

Meander scroll

One of a series of long, parallel, close-fitting, crescent-shaped ridges and troughs formed along the inner bank of a stream meander as the channel migrated laterally down-valley and toward the outer bank.

Mechanical treatment

Use of mechanical equipment for seeding, brush management, and other management practices.

Medium textured soil

Very fine sandy loam, loam, silt loam, or silt.

Mesa

A broad, nearly flat topped and commonly isolated landmass bounded by steep slopes or precipitous cliffs and capped by layers of resistant, nearly horizontal rocky material. The summit width is characteristically greater than the height of the bounding escarpments.

Metamorphic rock

Rock of any origin altered in mineralogical composition, chemical composition, or structure by heat, pressure, and movement at depth in the earth's crust. Nearly all such rocks are crystalline.

Mine or quarry (map symbol)

An open excavation from which soil and underlying material have been removed and in which bedrock is exposed. Also denotes surface openings to underground mines.

Mine spoil

An accumulation of displaced earthy material, rock, or other waste material removed during mining or excavation. Also called earthy fill.

Mineral soil

Soil that is mainly mineral material and low in organic material. Its bulk density is more than that of organic soil.

Minimum tillage

Only the tillage essential to crop production and prevention of soil damage.

Miscellaneous area

A kind of map unit that has little or no natural soil and supports little or no vegetation.

Miscellaneous water (map symbol)

Small, constructed bodies of water that are used for industrial, sanitary, or mining applications and that contain water most of the year.

Moderately coarse textured soil

Coarse sandy loam, sandy loam, or fine sandy loam.

Moderately fine textured soil

Clay loam, sandy clay loam, or silty clay loam.

Mollic epipedon

A thick, dark, humus-rich surface horizon (or horizons) that has high base saturation and pedogenic soil structure. It may include the upper part of the subsoil.

Moraine

In terms of glacial geology, a mound, ridge, or other topographically distinct accumulation of unsorted, unstratified drift, predominantly till, deposited primarily by the direct action of glacial ice in a variety of landforms. Also, a general term for a landform composed mainly of till (except for kame moraines, which are composed mainly of stratified outwash) that has been deposited by a glacier. Some types of moraines are disintegration, end, ground, kame, lateral, recessional, and terminal.

Morphology, soil

The physical makeup of the soil, including the texture, structure, porosity, consistence, color, and other physical, mineral, and biological properties of the various horizons, and the thickness and arrangement of those horizons in the soil profile.

Mottling, soil

Irregular spots of different colors that vary in number and size. Descriptive terms are as follows: abundance—*few, common,* and *many;* size—*fine, medium,* and *coarse;* and contrast—*faint, distinct,* and *prominent.* The size measurements are of the diameter along the greatest dimension. *Fine* indicates less than 5 millimeters (about 0.2 inch); *medium,* from 5 to 15 millimeters (about 0.2 to 0.6 inch); and *coarse,* more than 15 millimeters (about 0.6 inch).

Mountain

A generic term for an elevated area of the land surface, rising more than 1,000 feet (300 meters) above surrounding lowlands, commonly of restricted summit area (relative to a plateau) and generally having steep sides. A mountain can occur as a single, isolated mass or in a group forming a chain or range. Mountains are formed primarily by tectonic activity and/or volcanic action but can also be formed by differential erosion.

Muck

Dark, finely divided, well decomposed organic soil material. (See Sapric soil material.)

Mucky peat

See Hemic soil material.

Mudstone

A blocky or massive, fine grained sedimentary rock in which the proportions of clay and silt are approximately equal. Also, a general term for such material as clay, silt, claystone, siltstone, shale, and argillite and that should be used only when the amounts of clay and silt are not known or cannot be precisely identified.

Munsell notation

A designation of color by degrees of three simple variables—hue, value, and chroma. For example, a notation of 10YR 6/4 is a color with hue of 10YR, value of 6, and chroma of 4.

Natric horizon

A special kind of argillic horizon that contains enough exchangeable sodium to have an adverse effect on the physical condition of the subsoil.

Neutral soil

A soil having a pH value of 6.6 to 7.3. (See Reaction, soil.)

Nodules

See Redoximorphic features.

Nose slope (geomorphology)

A geomorphic component of hills consisting of the projecting end (laterally convex area) of a hillside. The overland waterflow is predominantly divergent. Nose slopes consist dominantly of colluvium and slope-wash sediments (for example, slope alluvium).

Nutrient, plant

Any element taken in by a plant essential to its growth. Plant nutrients are mainly nitrogen, phosphorus, potassium, calcium, magnesium, sulfur, iron, manganese, copper, boron, and zinc obtained from the soil and carbon, hydrogen, and oxygen obtained from the air and water.

Organic matter

Plant and animal residue in the soil in various stages of decomposition. The content of organic matter in the surface layer is described as follows:

Very low: Less than 0.5 percent

Low: 0.5 to 1.0 percent

Moderately low: 1.0 to 2.0 percent

Moderate: 2.0 to 4.0 percent

High: 4.0 to 8.0 percent

Very high: More than 8.0 percent

Outwash

Stratified and sorted sediments (chiefly sand and gravel) removed or "washed out" from a glacier by meltwater streams and deposited in front of or beyond the end moraine or the margin of a glacier. The coarser material is deposited nearer to the ice.

Outwash plain

An extensive lowland area of coarse textured glaciofluvial material. An outwash plain is commonly smooth; where pitted, it generally is low in relief.

Paleoterrace

An erosional remnant of a terrace that retains the surface form and alluvial deposits of its origin but was not emplaced by, and commonly does not grade to, a present-day stream or drainage network.

Pan

A compact, dense layer in a soil that impedes the movement of water and the growth of roots. For example, *hardpan, fragipan, claypan, plowpan,* and *traffic pan.*

Parent material

The unconsolidated organic and mineral material in which soil forms.

Peat

Unconsolidated material, largely undecomposed organic matter, that has accumulated under excess moisture. (See Fibric soil material.)

Ped

An individual natural soil aggregate, such as a granule, a prism, or a block.

Pedisediment

A layer of sediment, eroded from the shoulder and backslope of an erosional slope, that lies on and is being (or was) transported across a gently sloping erosional surface at the foot of a receding hill or mountain slope.

Pedon

The smallest volume that can be called "a soil." A pedon is three dimensional and large enough to permit study of all horizons. Its area ranges from about 10 to 100 square feet (1 square meter to 10 square meters), depending on the variability of the soil.

Percolation

The movement of water through the soil.

Perennial water (map symbol)

Small, natural or constructed lakes, ponds, or pits that contain water most of the year.

Permafrost

Ground, soil, or rock that remains at or below 0 degrees C for at least 2 years. It is defined on the basis of temperature and is not necessarily frozen.

pH value

A numerical designation of acidity and alkalinity in soil. (See Reaction, soil.)

Phase, soil

A subdivision of a soil series based on features that affect its use and management, such as slope, stoniness, and flooding.

Piping

Formation of subsurface tunnels or pipelike cavities by water moving through the soil.

Pitting

Pits caused by melting around ice. They form on the soil after plant cover is removed.

Plastic limit

The moisture content at which a soil changes from semisolid to plastic.

Plasticity index

The numerical difference between the liquid limit and the plastic limit; the range of moisture content within which the soil remains plastic.

Plateau (geomorphology)

A comparatively flat area of great extent and elevation; specifically, an extensive land region that is considerably elevated (more than 100 meters) above the adjacent lower lying terrain, is commonly limited on at least one side by an abrupt descent, and has a flat or nearly level surface. A comparatively large part of a plateau surface is near summit level.

Playa

The generally dry and nearly level lake plain that occupies the lowest parts of closed depressions, such as those on intermontane basin floors. Temporary flooding occurs primarily in response to precipitation and runoff. Playa deposits are fine grained and may or may not have a high water table and saline conditions.

Plinthite

The sesquioxide-rich, humus-poor, highly weathered mixture of clay with quartz and other diluents. It commonly appears as red mottles, usually in platy, polygonal, or reticulate patterns. Plinthite changes irreversibly to an ironstone hardpan or to irregular aggregates on repeated wetting and drying, especially if it is exposed also to heat from the sun. In a moist soil, plinthite can be cut with a spade. It is a form of laterite.

Plowpan

A compacted layer formed in the soil directly below the plowed layer.

Ponding

Standing water on soils in closed depressions. Unless the soils are artificially drained, the water can be removed only by percolation or evapotranspiration.

Poorly graded

Refers to a coarse grained soil or soil material consisting mainly of particles of nearly the same size. Because there is little difference in size of the particles, density can be increased only slightly by compaction.

Pore linings

See Redoximorphic features.

Potential native plant community

See Climax plant community.

Potential rooting depth (effective rooting depth)

Depth to which roots could penetrate if the content of moisture in the soil were adequate. The soil has no properties restricting the penetration of roots to this depth.

Prescribed burning

Deliberately burning an area for specific management purposes, under the appropriate conditions of weather and soil moisture and at the proper time of day.

Productivity, soil

The capability of a soil for producing a specified plant or sequence of plants under specific management.

Profile, soil

A vertical section of the soil extending through all its horizons and into the parent material.

Proper grazing use

Grazing at an intensity that maintains enough cover to protect the soil and maintain or improve the quantity and quality of the desirable vegetation. This practice increases the vigor and reproduction capacity of the key plants and promotes the accumulation of litter and mulch necessary to conserve soil and water.

Rangeland

Land on which the potential natural vegetation is predominantly grasses, grasslike plants, forbs, or shrubs suitable for grazing or browsing. It includes natural grasslands, savannas, many wetlands, some deserts, tundras, and areas that support certain forb and shrub communities.

Reaction, soil

A measure of acidity or alkalinity of a soil, expressed as pH values. A soil that tests to pH 7.0 is described as precisely neutral in reaction because it is neither acid nor alkaline. The degrees of acidity or alkalinity, expressed as pH values, are:

Ultra acid: Less than 3.5
Extremely acid: 3.5 to 4.4
Very strongly acid: 4.5 to 5.0
Strongly acid: 5.1 to 5.5
Moderately acid: 5.6 to 6.0
Slightly acid: 6.1 to 6.5
Neutral: 6.6 to 7.3
Slightly alkaline: 7.4 to 7.8
Moderately alkaline: 7.9 to 8.4
Strongly alkaline: 8.5 to 9.0
Very strongly alkaline: 9.1 and higher

Red beds

Sedimentary strata that are mainly red and are made up largely of sandstone and shale.

Redoximorphic concentrations

See Redoximorphic features.

Redoximorphic depletions

See Redoximorphic features.

Redoximorphic features

Redoximorphic features are associated with wetness and result from alternating periods of reduction and oxidation of iron and manganese compounds in the soil. Reduction occurs during saturation with water, and oxidation occurs when the soil is not saturated. Characteristic color patterns are created by these processes. The reduced iron and manganese ions may be removed from a soil if vertical or lateral fluxes of water occur, in which case there is no iron or manganese precipitation in that soil. Wherever the iron and manganese are oxidized and precipitated, they form either soft masses or hard concretions or nodules. Movement of iron and manganese as a result of redoximorphic processes in a soil may result in redoximorphic features that are defined as follows:

1. Redoximorphic concentrations.—These are zones of apparent accumulation of iron-manganese oxides, including:
   A. Nodules and concretions, which are cemented bodies that can be removed from the soil intact. Concretions are distinguished from nodules on the basis of internal organization. A concretion typically has concentric layers that are visible to the naked eye. Nodules do not have visible organized internal structure; *and*
   B. Masses, which are noncemented concentrations of substances within the soil matrix; *and*
   C. Pore linings, i.e., zones of accumulation along pores that may be either coatings on pore surfaces or impregnations from the matrix adjacent to the pores.
2. Redoximorphic depletions.—These are zones of low chroma (chromas less than those in the matrix) where either iron-manganese oxides alone or both iron-manganese oxides and clay have been stripped out, including:
   A. Iron depletions, i.e., zones that contain low amounts of iron and manganese oxides but have a clay content similar to that of the adjacent matrix; *and*
   B. Clay depletions, i.e., zones that contain low amounts of iron, manganese, and clay (often referred to as silt coatings or skeletans).
3. Reduced matrix.—This is a soil matrix that has low chroma *in situ* but undergoes a change in hue or chroma within 30 minutes after the soil material has been exposed to air.

Reduced matrix

See Redoximorphic features.

Regolith

All unconsolidated earth materials above the solid bedrock. It includes material weathered in place from all kinds of bedrock and alluvial, glacial, eolian, lacustrine, and pyroclastic deposits.

Relief

The relative difference in elevation between the upland summits and the lowlands or valleys of a given region.

Residuum (residual soil material)

Unconsolidated, weathered or partly weathered mineral material that accumulated as bedrock disintegrated in place.

Rill

A very small, steep-sided channel resulting from erosion and cut in unconsolidated materials by concentrated but intermittent flow of water. A rill generally is not an obstacle to wheeled vehicles and is shallow enough to be smoothed over by ordinary tillage.

Riser

The vertical or steep side slope (e.g., escarpment) of terraces, flood-plain steps, or other stepped landforms; commonly a recurring part of a series of natural, steplike landforms, such as successive stream terraces.

Road cut

A sloping surface produced by mechanical means during road construction. It is commonly on the uphill side of the road.

Rock fragments

Rock or mineral fragments having a diameter of 2 millimeters or more; for example, pebbles, cobbles, stones, and boulders.

Rock outcrop (map symbol)

An exposure of bedrock at the surface of the earth. Not used where the named soils of the surrounding map unit are shallow over bedrock or where "Rock outcrop" is a named component of the map unit.

Root zone

The part of the soil that can be penetrated by plant roots.

Runoff

The precipitation discharged into stream channels from an area. The water that flows off the surface of the land without sinking into the soil is called surface runoff. Water that enters the soil before reaching surface streams is called ground-water runoff or seepage flow from ground water.

Saline soil

A soil containing soluble salts in an amount that impairs growth of plants. A saline soil does not contain excess exchangeable sodium.

Saline spot (map symbol)

An area where the surface layer has an electrical conductivity of 8 mmhos/cm more than the surface layer of the named soils in the surrounding map unit. The surface layer of the surrounding soils has an electrical conductivity of 2 mmhos/cm or less.

Sand

As a soil separate, individual rock or mineral fragments from 0.05 millimeter to 2.0 millimeters in diameter. Most sand grains consist of quartz. As a soil textural class, a soil that is 85 percent or more sand and not more than 10 percent clay.

Sandstone

Sedimentary rock containing dominantly sand-sized particles.

Sandy spot (map symbol)

A spot where the surface layer is loamy fine sand or coarser in areas where the surface layer of the named soils in the surrounding map unit is very fine sandy loam or finer.

Sapric soil material (muck)

The most highly decomposed of all organic soil material. Muck has the least amount of plant fiber, the highest bulk density, and the lowest water content at saturation of all organic soil material.

Saturated hydraulic conductivity (Ksat)

The ease with which pores of a saturated soil transmit water. Formally, the proportionality coefficient that expresses the relationship of the rate of water movement to hydraulic gradient in Darcy's Law, a law that describes the rate of water movement through porous media. Commonly abbreviated as "Ksat." Terms describing saturated hydraulic conductivity are:

Very high: 100 or more micrometers per second (14.17 or more inches per hour)

High: 10 to 100 micrometers per second (1.417 to 14.17 inches per hour)

Moderately high: 1 to 10 micrometers per second (0.1417 inch to 1.417 inches per hour)

Moderately low: 0.1 to 1 micrometer per second (0.01417 to 0.1417 inch per hour)

Low: 0.01 to 0.1 micrometer per second (0.001417 to 0.01417 inch per hour)

Very low: Less than 0.01 micrometer per second (less than 0.001417 inch per hour).

To convert inches per hour to micrometers per second, multiply inches per hour by 7.0572. To convert micrometers per second to inches per hour, multiply micrometers per second by 0.1417.

Saturation

Wetness characterized by zero or positive pressure of the soil water. Under conditions of saturation, the water will flow from the soil matrix into an unlined auger hole.

Scarification

The act of abrading, scratching, loosening, crushing, or modifying the surface to increase water absorption or to provide a more tillable soil.

Sedimentary rock

A consolidated deposit of clastic particles, chemical precipitates, or organic remains accumulated at or near the surface of the earth under normal low temperature and pressure conditions. Sedimentary rocks include consolidated equivalents of alluvium, colluvium, drift, and eolian, lacustrine, and marine deposits. Examples are sandstone, siltstone, mudstone, claystone, shale, conglomerate, limestone, dolomite, and coal.

Sequum

A sequence consisting of an illuvial horizon and the overlying eluvial horizon. (See Eluviation.)

Series, soil

A group of soils that have profiles that are almost alike, except for differences in texture of the surface layer. All the soils of a series have horizons that are similar in composition, thickness, and arrangement.

Severely eroded spot (map symbol)

An area where, on the average, 75 percent or more of the original surface layer has been lost because of accelerated erosion. Not used in map units in which "severely eroded," "very severely eroded," or "gullied" is part of the map unit name.

Shale

Sedimentary rock that formed by the hardening of a deposit of clay, silty clay, or silty clay loam and that has a tendency to split into thin layers.

Sheet erosion

The removal of a fairly uniform layer of soil material from the land surface by the action of rainfall and surface runoff.

Short, steep slope (map symbol)

A narrow area of soil having slopes that are at least two slope classes steeper than the slope class of the surrounding map unit.

Shoulder

The convex, erosional surface near the top of a hillslope. A shoulder is a transition from summit to backslope.

Shrink-swell

The shrinking of soil when dry and the swelling when wet. Shrinking and swelling can damage roads, dams, building foundations, and other structures. It can also damage plant roots.

Shrub-coppice dune

A small, streamlined dune that forms around brush and clump vegetation.

Side slope (geomorphology)

A geomorphic component of hills consisting of a laterally planar area of a hillside. The overland waterflow is predominantly parallel. Side slopes are dominantly colluvium and slope-wash sediments.

Silica

A combination of silicon and oxygen. The mineral form is called quartz.

Silica-sesquioxide ratio

The ratio of the number of molecules of silica to the number of molecules of alumina and iron oxide. The more highly weathered soils or their clay fractions in warm-temperate, humid regions, and especially those in the tropics, generally have a low ratio.

Silt

As a soil separate, individual mineral particles that range in diameter from the upper limit of clay (0.002 millimeter) to the lower limit of very fine sand (0.05 millimeter). As a soil textural class, soil that is 80 percent or more silt and less than 12 percent clay.

Siltstone

An indurated silt having the texture and composition of shale but lacking its fine lamination or fissility; a massive mudstone in which silt predominates over clay.

Similar soils

Soils that share limits of diagnostic criteria, behave and perform in a similar manner, and have similar conservation needs or management requirements for the major land uses in the survey area.

Sinkhole (map symbol)

A closed, circular or elliptical depression, commonly funnel shaped, characterized by subsurface drainage and formed either by dissolution of the surface of underlying bedrock (e.g., limestone, gypsum, or salt) or by collapse of underlying caves within bedrock. Complexes of sinkholes in carbonate-rock terrain are the main components of karst topography.

Site index

A designation of the quality of a forest site based on the height of the dominant stand at an arbitrarily chosen age. For example, if the average height attained by dominant and codominant trees in a fully stocked stand at the age of 50 years is 75 feet, the site index is 75.

Slickensides (pedogenic)

Grooved, striated, and/or glossy (shiny) slip faces on structural peds, such as wedges; produced by shrink-swell processes, most commonly in soils that have a high content of expansive clays.

Slide or slip (map symbol)

A prominent landform scar or ridge caused by fairly recent mass movement or descent of earthy material resulting from failure of earth or rock under shear stress along one or several surfaces.

Slope

The inclination of the land surface from the horizontal. Percentage of slope is the vertical distance divided by horizontal distance, then multiplied by 100. Thus, a slope of 20 percent is a drop of 20 feet in 100 feet of horizontal distance.

Slope alluvium

Sediment gradually transported down the slopes of mountains or hills primarily by nonchannel alluvial processes (i.e., slope-wash processes) and characterized by particle sorting. Lateral particle sorting is evident on long slopes. In a profile sequence, sediments may be distinguished by differences in size and/or specific gravity of rock fragments and may be separated by stone lines. Burnished peds and sorting of rounded or subrounded pebbles or cobbles distinguish these materials from unsorted colluvial deposits.

Slow refill

The slow filling of ponds, resulting from restricted water transmission in the soil.

Slow water movement

Restricted downward movement of water through the soil. See Saturated hydraulic conductivity.

Sodic (alkali) soil

A soil having so high a degree of alkalinity (pH 8.5 or higher) or so high a percentage of exchangeable sodium (15 percent or more of the total exchangeable bases), or both, that plant growth is restricted.

Sodic spot (map symbol)

An area where the surface layer has a sodium adsorption ratio that is at least 10 more than that of the surface layer of the named soils in the surrounding map unit. The surface layer of the surrounding soils has a sodium adsorption ratio of 5 or less.

Sodicity

The degree to which a soil is affected by exchangeable sodium. Sodicity is expressed as a sodium adsorption ratio (SAR) of a saturation extract, or the ratio of Na^+ to Ca^{++} + Mg^{++}. The degrees of sodicity and their respective ratios are:

Slight: Less than 13:1

Moderate: 13-30:1

Strong: More than 30:1

Sodium adsorption ratio (SAR)

A measure of the amount of sodium (Na) relative to calcium (Ca) and magnesium (Mg) in the water extract from saturated soil paste. It is the ratio of the Na concentration divided by the square root of one-half of the Ca + Mg concentration.

Soft bedrock

Bedrock that can be excavated with trenching machines, backhoes, small rippers, and other equipment commonly used in construction.

Soil

A natural, three-dimensional body at the earth's surface. It is capable of supporting plants and has properties resulting from the integrated effect of climate and living matter acting on earthy parent material, as conditioned by relief and by the passage of time.

Soil separates

Mineral particles less than 2 millimeters in equivalent diameter and ranging between specified size limits. The names and sizes, in millimeters, of separates recognized in the United States are as follows:

Very coarse sand: 2.0 to 1.0
Coarse sand: 1.0 to 0.5
Medium sand: 0.5 to 0.25
Fine sand: 0.25 to 0.10
Very fine sand: 0.10 to 0.05
Silt: 0.05 to 0.002
Clay: Less than 0.002

Solum

The upper part of a soil profile, above the C horizon, in which the processes of soil formation are active. The solum in soil consists of the A, E, and B horizons. Generally, the characteristics of the material in these horizons are unlike those of the material below the solum. The living roots and plant and animal activities are largely confined to the solum.

Spoil area (map symbol)

A pile of earthy materials, either smoothed or uneven, resulting from human activity.

Stone line

In a vertical cross section, a line formed by scattered fragments or a discrete layer of angular and subangular rock fragments (commonly a gravel- or cobble-sized lag concentration) that formerly was draped across a topographic surface and was later buried by additional sediments. A stone line generally caps material that was subject to weathering, soil formation, and erosion before burial. Many stone lines seem to be buried erosion pavements, originally formed by sheet and rill erosion across the land surface.

Stones

Rock fragments 10 to 24 inches (25 to 60 centimeters) in diameter if rounded or 15 to 24 inches (38 to 60 centimeters) in length if flat.

Stony

Refers to a soil containing stones in numbers that interfere with or prevent tillage.

Stony spot (map symbol)

A spot where 0.01 to 0.1 percent of the soil surface is covered by rock fragments that are more than 10 inches in diameter in areas where the surrounding soil has no surface stones.

Strath terrace

A type of stream terrace; formed as an erosional surface cut on bedrock and thinly mantled with stream deposits (alluvium).

Stream terrace

One of a series of platforms in a stream valley, flanking and more or less parallel to the stream channel, originally formed near the level of the stream; represents the remnants of an abandoned flood plain, stream bed, or valley floor produced during a former state of fluvial erosion or deposition.

Stripcropping

Growing crops in a systematic arrangement of strips or bands that provide vegetative barriers to wind erosion and water erosion.

Structure, soil

The arrangement of primary soil particles into compound particles or aggregates. The principal forms of soil structure are:

Platy: Flat and laminated
Prismatic: Vertically elongated and having flat tops
Columnar: Vertically elongated and having rounded tops
Angular blocky: Having faces that intersect at sharp angles (planes)
Subangular blocky: Having subrounded and planar faces (no sharp angles)
Granular: Small structural units with curved or very irregular faces

Structureless soil horizons are defined as follows:

Single grained: Entirely noncoherent (each grain by itself), as in loose sand
Massive: Occurring as a coherent mass

Stubble mulch

Stubble or other crop residue left on the soil or partly worked into the soil. It protects the soil from wind erosion and water erosion after harvest, during preparation of a seedbed for the next crop, and during the early growing period of the new crop.

Subsoil

Technically, the B horizon; roughly, the part of the solum below plow depth.

Subsoiling

Tilling a soil below normal plow depth, ordinarily to shatter a hardpan or claypan.

Substratum

The part of the soil below the solum.

Subsurface layer

Any surface soil horizon (A, E, AB, or EB) below the surface layer.

Summer fallow

The tillage of uncropped land during the summer to control weeds and allow storage of moisture in the soil for the growth of a later crop. A practice common in semiarid regions, where annual precipitation is not enough to produce a crop every year. Summer fallow is frequently practiced before planting winter grain.

Summit

The topographically highest position of a hillslope. It has a nearly level (planar or only slightly convex) surface.

Surface layer

The soil ordinarily moved in tillage, or its equivalent in uncultivated soil, ranging in depth from 4 to 10 inches (10 to 25 centimeters). Frequently designated as the "plow layer," or the "Ap horizon."

Surface soil

The A, E, AB, and EB horizons, considered collectively. It includes all subdivisions of these horizons.

Talus

Rock fragments of any size or shape (commonly coarse and angular) derived from and lying at the base of a cliff or very steep rock slope. The accumulated mass of such loose broken rock formed chiefly by falling, rolling, or sliding.

Taxadjuncts

Soils that cannot be classified in a series recognized in the classification system. Such soils are named for a series they strongly resemble and are designated as taxadjuncts to that series because they differ in ways too small to be of consequence in interpreting their use and behavior. Soils are recognized as taxadjuncts only when one or more of their characteristics are slightly outside the range defined for the family of the series for which the soils are named.

Terminal moraine

An end moraine that marks the farthest advance of a glacier. It typically has the form of a massive arcuate or concentric ridge, or complex of ridges, and is underlain by till and other types of drift.

Terrace (conservation)

An embankment, or ridge, constructed across sloping soils on the contour or at a slight angle to the contour. The terrace intercepts surface runoff so that water soaks into the soil or flows slowly to a prepared outlet. A terrace in a field generally is built so that the field can be farmed. A terrace intended mainly for drainage has a deep channel that is maintained in permanent sod.

Terrace (geomorphology)

A steplike surface, bordering a valley floor or shoreline, that represents the former position of a flood plain, lake, or seashore. The term is usually applied both to the relatively flat summit surface (tread) that was cut or built by stream or wave action and to the steeper descending slope (scarp or riser) that has graded to a lower base level of erosion.

Terracettes

Small, irregular steplike forms on steep hillslopes, especially in pasture, formed by creep or erosion of surficial materials that may be induced or enhanced by trampling of livestock, such as sheep or cattle.

Texture, soil

The relative proportions of sand, silt, and clay particles in a mass of soil. The basic textural classes, in order of increasing proportion of fine particles, are *sand, loamy sand, sandy loam, loam, silt loam, silt, sandy clay loam, clay loam, silty clay loam, sandy clay, silty clay,* and *clay*. The sand, loamy sand, and sandy loam classes may be further divided by specifying "coarse," "fine," or "very fine."

Thin layer

Otherwise suitable soil material that is too thin for the specified use.

Till

Dominantly unsorted and nonstratified drift, generally unconsolidated and deposited directly by a glacier without subsequent reworking by meltwater, and consisting of a heterogeneous mixture of clay, silt, sand, gravel, stones, and boulders; rock fragments of various lithologies are embedded within a finer matrix that can range from clay to sandy loam.

Till plain

An extensive area of level to gently undulating soils underlain predominantly by till and bounded at the distal end by subordinate recessional or end moraines.

Tilth, soil

The physical condition of the soil as related to tillage, seedbed preparation, seedling emergence, and root penetration.

Toeslope

The gently inclined surface at the base of a hillslope. Toeslopes in profile are commonly gentle and linear and are constructional surfaces forming the lower part of a hillslope continuum that grades to valley or closed-depression floors.

Topsoil

The upper part of the soil, which is the most favorable material for plant growth. It is ordinarily rich in organic matter and is used to topdress roadbanks, lawns, and land affected by mining.

Trace elements

Chemical elements, for example, zinc, cobalt, manganese, copper, and iron, in soils in extremely small amounts. They are essential to plant growth.

Tread

The flat to gently sloping, topmost, laterally extensive slope of terraces, flood-plain steps, or other stepped landforms; commonly a recurring part of a series of natural steplike landforms, such as successive stream terraces.

Tuff

A generic term for any consolidated or cemented deposit that is 50 percent or more volcanic ash.

Upland

An informal, general term for the higher ground of a region, in contrast with a low-lying adjacent area, such as a valley or plain, or for land at a higher elevation than the flood plain or low stream terrace; land above the footslope zone of the hillslope continuum.

Valley fill

The unconsolidated sediment deposited by any agent (water, wind, ice, or mass wasting) so as to fill or partly fill a valley.

Variegation

Refers to patterns of contrasting colors assumed to be inherited from the parent material rather than to be the result of poor drainage.

Varve

A sedimentary layer or a lamina or sequence of laminae deposited in a body of still water within a year. Specifically, a thin pair of graded glaciolacustrine layers seasonally deposited, usually by meltwater streams, in a glacial lake or other body of still water in front of a glacier.

Very stony spot (map symbol)

A spot where 0.1 to 3.0 percent of the soil surface is covered by rock fragments that are more than 10 inches in diameter in areas where the surface of the surrounding soil is covered by less than 0.01 percent stones.

Water bars

Smooth, shallow ditches or depressional areas that are excavated at an angle across a sloping road. They are used to reduce the downward velocity of water and divert it off and away from the road surface. Water bars can easily be driven over if constructed properly.

Weathering

All physical disintegration, chemical decomposition, and biologically induced changes in rocks or other deposits at or near the earth's surface by atmospheric or biologic agents or by circulating surface waters but involving essentially no transport of the altered material.

Well graded

Refers to soil material consisting of coarse grained particles that are well distributed over a wide range in size or diameter. Such soil normally can be easily increased in density and bearing properties by compaction. Contrasts with poorly graded soil.

Wet spot (map symbol)

A somewhat poorly drained to very poorly drained area that is at least two drainage classes wetter than the named soils in the surrounding map unit.

Wilting point (or permanent wilting point)

The moisture content of soil, on an ovendry basis, at which a plant (specifically a sunflower) wilts so much that it does not recover when placed in a humid, dark chamber.

Windthrow

The uprooting and tipping over of trees by the wind.