

June 20, 2017

Township of Hopewell

JUN 28 2017

Health Department

Mr. Robert English
Hopewell Township Health Officer
201 Washington Crossing – Pennington Road
Titusville, New Jersey 08560

**Re: Notification of Revised Groundwater Classification Exception Area
Former AT&T Bell Laboratories – Princeton Site, 330 Carter Road
Hopewell Township, Mercer County, NJ**

Dear Mr. English:

As required by the New Jersey Department of Environmental Protection (NJDEP), I am sending this letter to provide an update on the Groundwater Classification Exception Area (CEA) that was established at and within the vicinity of the AT&T Bell Laboratories site located at 330 Carter Road, Hopewell Township, New Jersey (the Site). The existing CEA includes an off-site area where volatile organic compounds (VOCs) have been detected in groundwater at concentrations exceeding the NJDEP Class IIA Groundwater Quality Standards (GQS). The CEA was revised based on the results of recent groundwater investigative and monitoring activities undertaken in response to NJDEP's lowering of the Interim Groundwater Quality Criteria (IGQC) for 1,4-dioxane in November 2015. The designation of a Groundwater CEA is required by the NJDEP when constituents are present in groundwater at concentrations exceeding the NJDEP Class IIA GQS and/or IGQC.

This notification is required by the NJDEP pursuant to the New Jersey Administrative Code. A copy of the NJDEP Classification Exception Area/Well Restriction Area form with applicable figures is attached for your reference. If you have any questions, please do not hesitate to contact me at 908-307-2140.

Sincerely,



G. John Galasso, P.E.
Environmental Engineering Manager
Alcatel-Lucent USA Inc.

Attachments

NJDEP Classification Exception Area/Well Restriction Area Form
Groundwater Classification Exception Area Figure



**New Jersey Department of Environmental Protection
Site Remediation Program**

**CLASSIFICATION EXCEPTION AREA / WELL RESTRICTION
AREA (CEA/WRA) FACT SHEET FORM**

Date Stamp
(For Department use only)

SECTION A. SITE INFORMATION

Site Name: Former AT&T Bell Laboratories- Princeton Site

Program Interest (PI) Number(s): G000003219

Case Tracking Number(s) for this submission: E95517

**This form must be attached to the Cover / Certification Form
if not submitted through the RIR Online Service**

1. Indicate the reason for submission of this form (*see instructions*):

- ☐ New CEA ☒ Revise CEA ☐ Reestablish CEA ☐ Existing CEA with no changes
☐ CEA for historic fill ☐ CEA lift/removal

If you are submitting this form for an existing CEA provide the CEA Subject Item ID: 124290

2. Indicate the type of ground water Remedial Action (RA):

- ☐ Natural ☒ Active ☐ Final RA not yet selected

3. Is this form being submitted with a Remedial Action Permit (RAP) Form (for Soil or Ground Water)? ... ☒ Yes ☐ No

SECTION B. CEA COMPONENT INFORMATION

1. **Contaminant(s):** This CEA/WRA applies only to contaminants above applicable numeric values established by the [Ground Water Quality Standards](#) (GWQS), N.J.A.C. 7:9C, listed in the table below. Except for historic fill CEAs based on assumed ground water contamination, list the maximum contaminant value for all ground water data that could be representative of current conditions and is for any well or sampling point used to establish the CEA. The values listed below may or may not be appropriate for use in evaluating plume fate and transport. See form instructions.

Contaminant	Concentration ⁽¹⁾	GWQS ⁽²⁾	SWQS ⁽³⁾	GWSL ⁽⁴⁾
1,1-Dichloroethene (MW-21R/26-1)	10 ug/L	1 ug/L	Not Applicable	260 ug/L
Trichloroethene (MW-21R)	8 ug/L	1 ug/L	Not Applicable	2 ug/L
1,4-Dioxane (MW-26-1)	2.3 ug/L	0.4 ug/L (IGQC)	Not Applicable	Not Specified
1,1,1-Trichloroethane (FC Well)	31 ug/L	30 ug/L	Not Applicable	13,000 ug/L

Notes: ⁽¹⁾ Maximum concentration in Micrograms Per Liter

⁽²⁾ New Jersey Ground Water Quality Standards, N.J.A.C. 7:9C

⁽³⁾ [Surface Water Quality Standards](#), N.J.A.C. 7:9B - Applicable only where contaminants in the CEA may discharge to a surface water body.

⁽⁴⁾ Current NJDEP Vapor Intrusion Ground Water Screening Levels available at <http://www.nj.gov/dep/srp/guidance/vaporintrusion/>

IGQC: Interim Groundwater Quality
Criteria (11/25/15)

☐ Check if attaching an Addendum to list additional contaminants and associated information.

2. **CEA Boundaries:** Year of tax map used: 2016

For CEA revisions: ☒ check if CEA Boundary has changed (*See instructions*)

☐ check if Block and Lot numbers have changed (*See instructions*)

List the Block(s) and Lot(s) included in the areal extent of the Classification Exception Area:

Block(s)	Lot(s)	Check if off-site
40	14.03	☐
39	16.011	☒
39	19	☒
39	20	☒
39	24	☒

Block(s)	Lot(s)	Check if off-site
39	37	☒
39	38	☒
39	39	☒
39	40	☒
39	41	☒

☒ Check if attaching an Addendum to list additional Blocks/Lots and associated information.

Narrative description of proposed CEA:

See Attachment 1 Narrative

Name(s) of the affected Geologic Formation(s)/Unit(s): Passaic

Direction of ground water flow: S/SW (If multiple water bearing zones exist within the CEA and/or there is no predominant flow direction, see instructions.)

Ground Water Classification: Class IIA (See instructions and GWQS for classification area information.)

Vertical Depth of CEA: 175 (ft bgs) and 23 (msl).

Horizontal Extent of CEA: 41.2 Indicate units: ☒ acres or ☐ square feet

3. Projected Term of CEA: (Based on modeling/calculations in the fate and transport description)

Proposed Duration in Years: _____ Anticipated Expiration Date: _____

or ☒ Indeterminate (Review instructions before selecting "Indeterminate.") See Attachment 2 Narrative

4. ATTACH AND/OR SUBMIT THE FOLLOWING: (see instructions for additional information)

Exhibit A: Site Location Maps – USGS Quadrangle Map;

Exhibit B: CEA Map and Cross Section Figure – See N.J.A.C 7:26C- 7.3(c)1 and 2 and instructions regarding what to include on the map and the cross-section figure.

Exhibit C: GIS Deliverables – CEA Boundary Extent Map. The CEA Boundary Extent Map shall be submitted via email to srpgis_cea@dep.nj.gov. See the instructions for detailed GIS deliverable requirements.

For revisions, does the attached map differ from the CEA map on NJ-GeoWeb? ☒ Yes ☐ No ☐ N/A

If "Yes or N/A," identify the format of the CEA Boundary Extent Map: ☒ Shape File ☐ CAD File

SECTION C. CURRENT GROUND WATER USE DOCUMENTATION

1. Indicate the year of the most recent well search completed per N.J.A.C. 7:26E-1.14: 2016
2. If this Fact Sheet form is for a revised CEA or an existing CEA with no changes, have new wells been installed since the CEA was established? ☒ Yes ☐ No ☐ N/A
3. Are there any pumping wells (e.g., potable, industrial, irrigation or recovery wells) within the foot print of the CEA? ☒ Yes ☐ No

SECTION D. WELL RESTRICTION INFORMATION

Certain well restrictions relevant to potable ground water use, such as "Double Case Wells", "Sample Potable Wells", and "Evaluate Production Wells", are consistently set within the boundaries of all CEAs established by the NJDEP in Class I and II-A areas (*see instructions*).

1. Are there any other site-specific well restrictions relevant to potable ground water use that should be set within or near the boundaries of the proposed CEA? ☐ Yes ☒ No

If "Yes", describe below any such site-specific well restrictions proposed for this CEA:

SECTION E. PUBLIC NOTIFICATION REQUIREMENTS

See form instructions for notification procedures

1. Indicate which of the following entities have been notified pursuant to N.J.A.C. 7:26C-7.3(d). (*check all that apply*)

- ☒ Municipal and county clerk(s)
- ☒ Local, county or regional health department(s)
- ☒ Designated County Environmental Health Act agency (if applicable)
- ☒ County Planning Board
- ☐ Pinelands Commission (if applicable)
- ☒ Owners of real property overlying CEA foot print

2. **List of Names and Addresses** – List below and/or in an attachment, the names/addresses of all persons notified pursuant to N.J.A.C. 7:26C-7.3(d) based on the proposed CEA boundaries. If the site property owner differs from the person responsible for conducting the remediation, enter the site owner's name and address first in below table. See instructions for more information regarding address list and indicating if vapor intrusion was evaluated for properties over the CEA.

☐ Check here if no volatile contaminants are in the CEA

Entity or Owner Name	Notification Address Used (include applicable block and lot overlying CEA if owner address differs from property address)	Date notification sent	Was property evaluated for vapor intrusion? Check if "Yes"
See Attachment 3			☐
			☐
			☐
			☐
			☐
			☐
			☐
			☐
			☐
			☐
			☐
			☐
			☐
			☐
			☐
			☐

ADDENDUM

Classification Exception Area / Well Restriction Area Fact Sheet Form

Section B. CEA Component Information

1. **Contaminant(s):** This CEA/WRA applies only to contaminants above applicable numeric values established by the GWQS, N.J.A.C. 7:9C, listed in the table below. Except for historic fill CEAs based on assumed ground water contamination, list below the maximum contaminant value for all ground water data that could be representative of current conditions using any well or sampling point used to establish the CEA. The values listed below may or may not be appropriate for use in evaluating plume fate and transport. See form Instructions.

[illegible]

Notes:

- (1) Maximum concentration in Micrograms Per Liter
- (2) New Jersey Ground Water Quality Standards, N.J.A.C. 7:9C
- (3) Surface Water Quality Standards, N.J.A.C. 7:9B - Applicable only where contaminants in the CEA may discharge to a surface water body.
- (4) Current NJDEP Vapor Intrusion Ground Water Screening Levels

2. CEA Boundaries:

Blocks(s) and Lot(s) included in the areal extent of the Classification Exception Area:

Year of tax map used: 2016 For CEA revisions, check here if Block and Lot numbers have changed: ☒

Block(s)	Lot(s)	Check if off-site
39	42	☒
39	43	☒
39	44	☒
39	45	☒
39	46	☒
39	47	☒
39	48	☒
39	49	☒
39	51	☒

ATTACHMENTS

Attachment 1

Description of Groundwater Classification Exception Area

Attachment 1
Description of Groundwater Classification Exception Area (CEA)
Former AT&T Bell Laboratories – Princeton Site
330 and 350 Carter Road
Hopewell Township, New Jersey

June 2017

The groundwater classification exception area (CEA) encompasses an area in the southwestern portion of the site where constituents have been detected in groundwater at concentrations exceeding the NJDEP Class IIA Groundwater Quality Standards (GQS). NJDEP approved the groundwater CEA in correspondence dated February 7, 2011. The CEA was re-submitted to the NJDEP on May 21, 2013 and again with the Remedial Action Report (RAR) and Application for a Remedial Action Permit for Groundwater (RAP-GW) dated July 24, 2014. The RAP-GW was approved by the NJDEP on October 23, 2014. The CEA included an area on-site and off-site where volatile organic compounds (VOC), namely trichloroethene (TCE) and 1,1-dichloroethene (1,1-DCE), have been detected at concentrations exceeding the NJDEP Class IIA GQS. The VOC, 1,1,1-trichloroethane (1,1,1-TCA), has also been detected on occasion at a concentration exceeding the NJDEP Class IIA GQS in one on-site well (FC Well), which is operated continuously as the remediation well at the site.

The purpose of this CEA revision is to: (1) update the list of contaminants to include 1,4-dioxane; and (2) update the lateral extent of the CEA based on the results of recent groundwater activities to assess 1,4-dioxane concentrations in groundwater. The groundwater activities were prompted by NJDEP's lowering of the Interim Groundwater Quality Criteria (IGQC) for 1,4-dioxane from 10 micrograms per liter (ug/L) to 0.4 ug/L in November 2015, and included: (1) sampling of both on-site and off-site monitoring wells; (2) sampling of residential wells both within and down-gradient of the current CEA; and, (3) installation and testing of a new sentinel nested monitoring well pair (MW-31-1 and MW-31-2) on Cedar Brook Terrace. Based on the results from the groundwater activities, the lateral extent of the CEA has been expanded to the southwest of the former sentinel monitoring well (MW-29) as depicted in Exhibit B. The duration of the CEA for the VOC plume is indeterminate as described in Attachment 2 and as previously approved by the NJDEP.

The off-site portion of the approved CEA includes portions of 26 private properties located within the footprint of the VOC and 1,4-dioxane plume. Alcatel-Lucent (formerly Lucent) implemented a residential well sampling program of 35 private wells between 1998 and 1999, and has continued with an annual monitoring program for a reduced number of residential wells since that time. Alcatel-Lucent presently maintains point of entry treatment (POET) systems at nine off-site residential wells where TCE concentrations historically slightly exceeded or were close to the 1 ug/L NJ Maximum Contaminant Level (MCL). As part of the groundwater activities described above, 21 additional residential wells were sampled during 2016 and 2017 to evaluate 1,4-dioxane concentrations in groundwater.

TCE and 1,1-DCE concentrations have been consistently below their respective Federal MCLs in all of the residential wells in the program, and have declined considerably since the residential well sampling program was initiated during 1998 and 1999. Results from the sampling of nine off-site residential wells over the past two years indicated only two residential wells where TCE and/or 1,1-DCE concentrations slightly exceeded the 1 ug/L NJDEP Class IIA GQS (1 ug/L).

Attachment 1
Description of Groundwater Classification Exception Area (CEA)
Former AT&T Bell Laboratories – Princeton Site
330 and 350 Carter Road
Hopewell Township, New Jersey

June 2017

The revised CEA, including both the on-site and off-site portions, occupies an estimated area of 1,795,530 square feet (41.2 acres) as illustrated in Exhibit B. The precise vertical extent of the CEA is difficult to estimate with certainty because of the limited number of water-bearing fracture zones at depth. However, the vertical extent of the VOC and 1,4-dioxane plume is conservatively estimated at 175 feet below grade (23 feet above mean sea level) based on the results of groundwater investigative activities completed at the site, which remains unchanged from the vertical extent specified in the prior CEA that was approved by the NJDEP.

Attachment 2

Fate and Transport Description

Attachment 2
Fate and Transport Description
Former AT&T Bell Laboratories – Princeton Site
330 and 350 Carter Road
Hopewell Township, New Jersey

June 2017

The fate and transport of the dilute volatile organic compound (VOC) plume in groundwater, primarily trichloroethene (TCE) and 1,1-dichloroethene (1,1-DCE), is most appropriately characterized empirically from the results of groundwater monitoring that has been conducted in on-site and off-site areas over the past 19 years. As discussed in Attachment 1, 1,4-dioxane has been added to the CEA based on the results of groundwater activities completed in 2016 and 2017. Modeling of the fate and transport of the TCE, 1,1-DCE and/or 1,4-dioxane is not expected to produce meaningful predictions of the CEA extent or duration for the following reasons:

- Only trace concentrations of TCE, 1,1-DCE, and 1,4-dioxane remain in groundwater;
- The underlying bedrock aquifer is characterized by groundwater flow through a limited number of water-bearing fractures and the scale of the study area is too small to approximate flow through porous media;
- Groundwater flow is affected by the active pumping of the remediation well at the site
- Matrix diffusion from the bedrock aquifer is the likely mechanism for the persistent low concentrations of TCE and 1,1-DCE that have been observed in groundwater

Alcatel-Lucent has therefore relied on the analytical results from the monitoring of on-site and off-site monitoring wells, and additionally from off-site residential wells to support the prior CEA that was approved by the NJDEP. The CEA duration is still indeterminate because of the aforementioned site-specific factors. An assessment of VOC concentration trends from the long term groundwater monitoring program indicates that the VOC plume is not expanding, and VOC concentrations in groundwater in the off-site area have actually declined since the monitoring program was initiated 19 years ago. Alcatel-Lucent's groundwater remediation approach involving the ongoing pumping of the on-site remediation well and the maintenance of point-of-entry treatment (POET) systems in down-gradient residential wells has been protective of receptors. Alcatel-Lucent completed investigations to assess potential vapor intrusion (VI) from the VOC plume in 2009, 2010 and 2012, and results have shown that VI is not a concern.

Attachment 3

CEA Notification List of Names and Addresses

Property Owners

Block	Lot	Owner	Physical Address	Mailing Address	Date Notification Sent	Was Property evaluated for vapor intrusion?
40	14.03	350 Carter Road LLC et al. c/o Ryan	330 Carter Road	600 Fifth Avenue, 8th FL, New York, NY 10020	6/20/2017	Yes
		Jason Iskany, Worldwater & Solar Technologies (Lessee)		330 Carter Road, Princeton, NJ 08540	6/20/2017	
		Bob Kupsch, BPG Management (Property Manager)		301 Oxford Valley Road, Suite 1203A, Yardley, PA 19067	6/20/2017	
		Hank Greenmler, Greene Environmental Services, Inc. (Operator)		15 Liberty Avenue, Trenton, NJ 08620	6/20/2017	
39	16.011	Double Brook Farm LLC	37 Bayberry Road	PO Box 96, Hopewell, NJ 08525	6/20/2017	No
39	40	Russel D. Barefoot and Corey R. Johnson	329 Carter Road	329 Carter Road, Princeton, NJ 08540	6/20/2017	Yes
39	39	Alfred J. and Lisa E. Pietrafesa	327 Carter Road	327 Carter Road, Princeton, NJ 08540	6/20/2017	No
39	55	305 Carter Road LLC	305 Carter Road	305 Carter Road, Princeton, NJ 08540	6/20/2017	No
39	37	John F. and Patricia A. Rieszier	1 Cleveland Road West	1 Cleveland Road West, Princeton, NJ 08540	6/20/2017	No
39	38	Rodrigo and Teresa Soto	2 Cleveland Road West	2 Cleveland Road West, Princeton, NJ 08540	6/20/2017	Yes
39	41	William R. and Mary B. Fogler	4 Cleveland Road West	4 Cleveland Road West, Princeton, NJ 08540	6/20/2017	No
39	51	Mark P. Hill and Beth Ann Tschiesiepe	5 Cleveland Road West	5 Cleveland Road West, Princeton, NJ 08540	6/20/2017	No
39	42	Peter J. Flemming	6 Cleveland Road West	6 Cleveland Road West, Princeton, NJ 08540	6/20/2017	Yes
39	49	Felix Martinez and Elena Castaneda	7 Cleveland Road West	7 Cleveland Road West, Princeton, NJ 08540	6/20/2017	No
39	43	Scott A. Keneman	8 Cleveland Road West	8 Cleveland Road West, Princeton, NJ 08540	6/20/2017	No
39	48	Reese Rogers and Joan M. Paschong	9 Cleveland Road West	9 Cleveland Road West, Princeton, NJ 08540	6/20/2017	No
39	44	James P. and Christina H. Besanceney	10 Cleveland Road West	10 Cleveland Road West, Princeton, NJ 08540	6/20/2017	Yes
39	47	Phillip and Mei-Ying Liu	11 Cleveland Road West	11 Cleveland Road West, Princeton, NJ 08540	6/20/2017	No
39	45	Christine F. Reed	12 Cleveland Road West	12 Cleveland Road West, Princeton, NJ 08540	6/20/2017	No
39	46	David R. and Nan L. Rossien	13 Cleveland Road West	13 Cleveland Road West, Princeton, NJ 08540	6/20/2017	No
39	20	John J. Acevedo and Amparo M. Scott	14 Cleveland Road West	10500 Rockville Pike 1406, Rockville, MD 20854	6/20/2017	No
39	19	Pat Geurds	69 Bayberry Road	14 Cleveland Road West, Princeton, NJ 08540	6/20/2017	No
		Lydia H. Zahinger		9 East Shore Drive, Princeton, NJ 08540	6/20/2017	
43.10	9	Current Resident	68 Bayberry Road	69 Bayberry Road, Princeton, NJ 08540	6/20/2017	No
		Georoid Foley		68 Bayberry Road, Princeton, NJ 08540	6/20/2017	
39	24	Partho S. Ghosh and Anuradha Biswas	67 Bayberry Road	67 Bayberry Road, Princeton, NJ 08540	6/20/2017	No
43.10	8	Donald Twomey	66 Bayberry Road	66 Bayberry Road, Princeton, NJ 08540	6/20/2017	No
43.25	4	Norman T. and Christina M. Callaway	64 Bayberry Road	64 Bayberry Road, Princeton, NJ 08540	6/20/2017	No
43.05	8	Damon M. and Anna Kress	62 Bayberry Road	62 Bayberry Road, Princeton, NJ 08540	6/20/2017	No
43.05	9	Samuel B. Starkey	60 Bayberry Road	1300 Locust Street, Apt 3304, Philadelphia, PA 19102	6/20/2017	No
43.25	3	William M. and Julia F. Hardt	22 Alta Vista Drive	22 Alta Vista Drive, Princeton, NJ 08540	6/20/2017	No
43.25	2	James T. Hennessey	20 Alta Vista Drive	20 Alta Vista Drive, Princeton, NJ 08540	6/20/2017	No

Government Agencies

Government Agency	Name	Title	Department	Mailing Address	Date Notification Sent	Was Property evaluated for vapor intrusion?
Municipal Clerk	Laurie E. Gompf	Municipal Clerk	Township of Hopewell Clerk's Office	201 Washington Crossing- Pennington Road, Titusville, NJ 08560	6/20/2017	Not Applicable
County Clerk	Paula Solami Covello Esq.	County Clerk	Mercer County Clerk's Office	Mercer County Administration Building, 640 South Broad Street, PO. Box 8956, Trenton, NJ 08650-0956	6/20/2017	Not Applicable
Local Health Department	Robert English	Health Officer	Township of Hopewell Health Department	201 Washington Crossing- Pennington Road, Titusville, NJ 08560	6/20/2017	Not Applicable
County Health Department			Mercer County Division of Public Health	Mercer County Administration Building, 640 South Broad Street, PO. Box 8956, Trenton, NJ 08650-0956	6/20/2017	Not Applicable
Regional Health Department			Same as County Health Department			
County Planning Board	Michael Shine	Planning Board Chair	Mercer County Planning Board	Mercer County Administration Building, 640 South Broad Street, PO. Box 8956, Trenton, NJ 08650-0956	6/20/2017	Not Applicable

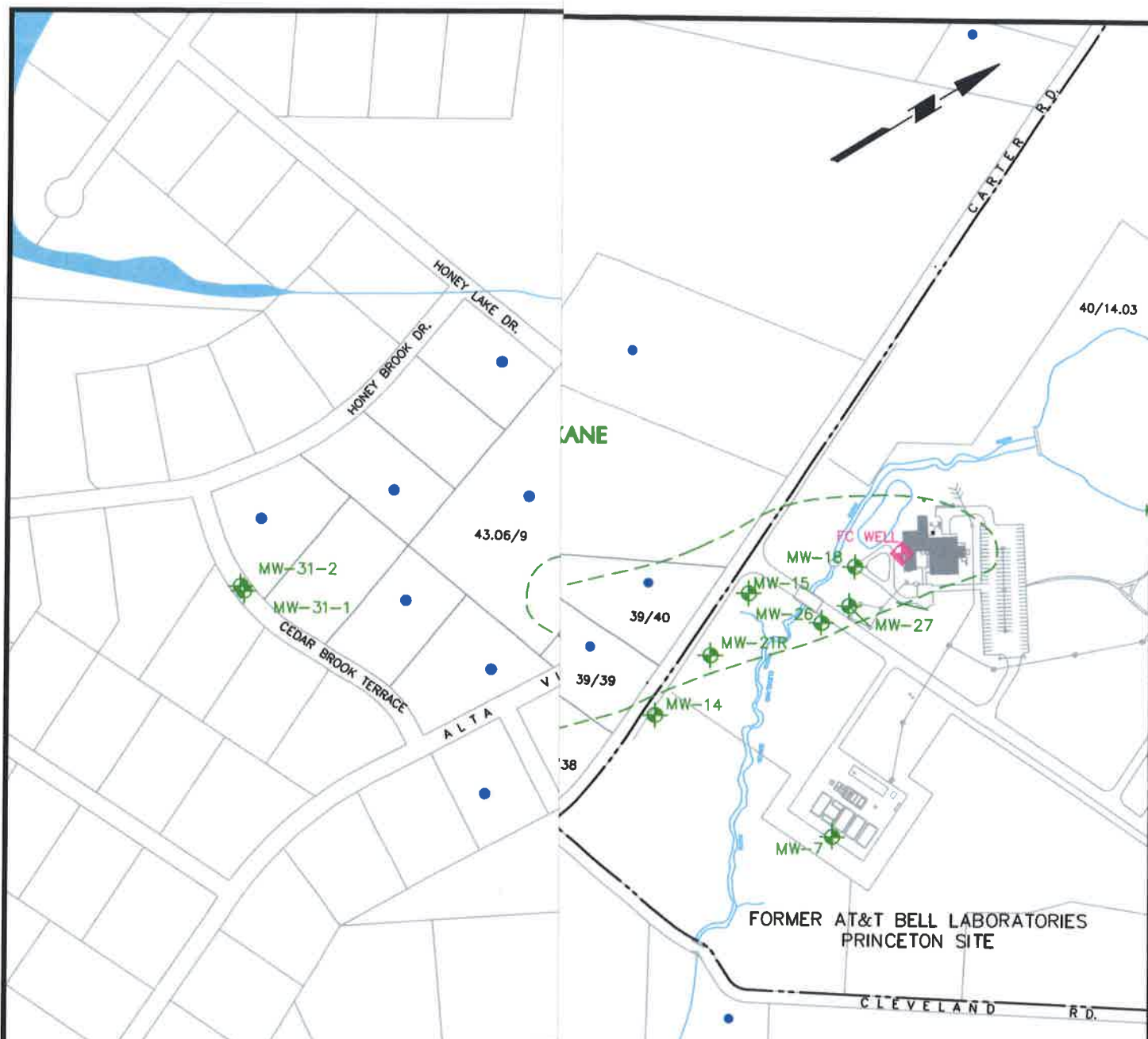
EXHIBITS

Exhibit A

Site Location Map

Exhibit B

CEA Map and Cross Section Figure



LEGEND



BEDROCK MONITORING WELL



EXTRACTION WELL



RESIDENTIAL WELL



PROPERTY BOUNDARY (LOTS LOCATED WITHIN BOUNDARIES OF THE CEA ARE LABELED)



APPROXIMATE PROPERTY BOUNDARY FOR FORMER AT&T BELL LABORATORIES

VOC

VOLATILE ORGANIC COMPOUND

CEA

CLASSIFICATION EXCEPTION AREA



ESTIMATED EXTENT OF VOC AND 1,4-DIOXANE

41/8

BLOCK/LOT

GROUNDWATER EXCEPTION CLASSIFICATION AREA

FORMER AT&T BELL LABORATORIES-PRINCETON SITE
HOPEWELL TOWNSHIP

Project No.

3569101

Date

6/15/2017

Scale

1" = 400'

Exhibit

B

NEW JERSEY

