GeoLogic NY, P.C.
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February 9, 2021

Ms. Brianna Scharf
New York State Department of Environmental Conservation
625 Broadway, BURE
Albany, New York 12233

Reference: **Proposed Shutdown Test**
Former Smith Corona
839 NYS Route 13
Cortlandville, New York 13045
NYSDEC Site No. 712006

Dear Ms. Scharf:

GeoLogic NY, P.C. (GeoLogic), as consultant to Cortland Commerce Center submits this workplan for a shutdown test of the groundwater extraction and treatment system (GWETS) at the referenced Site. The concept of a shutdown test was discussed with representatives of New York State Department of Environmental Conservation (NYSDEC) and the New York State Department of Health (NYSDOH) on January 19, 2021. To assess groundwater conditions at the Site under non-pumping conditions, we propose a temporary shutdown test of the recovery well. The location of the Site is depicted on Drawing No. 1, Appendix A. The locations of the recovery well, as well as on-site monitoring wells, are depicted on Drawing No. 2, Appendix A.

The sections below are intended to provide historical information pertaining to the GWETS and describe and provide a basis for the proposed shutdown test.

Background

The Site was formerly owned and operated by Smith Corona Corporation (SCC), previously known as SCM Corporation (SCM). SCC utilized the Site for the purpose of manufacturing typewriters. Trichloroethene (TCE) was used on the Site by SCC during manufacturing processes. Prior to development, the Site was reportedly utilized for agricultural purposes.

The Site overlies the Otter Creek/Dry Creek aquifer. Town of Cortlandville municipal water wells are located approximately 2,300 feet west of the Site and the City of Cortland municipal water wells are located approximately 1.5 miles north-northeast of the Site.

In 1986, a plume of contaminated groundwater was detected during the investigation of an unrelated petroleum spill. This plume extended from the Site approximately 1.5 miles downgradient (generally north). The contaminants in this plume were identified as TCE and related decomposition products.

The potential contaminant sources identified at the Site included a 3,000-gallon aboveground storage tank (AST) that formerly contained TCE, a 20,000-gallon underground storage tank (UST) that formerly contained tramp oil and four areas of stained surface soil associated with

past material handling practices. These areas are all located on the west side of the building. Additionally, a former tumbling area was later identified within the building footprint (adjacent to monitoring well MW-L16).

The sample locations with the highest historic contaminant concentrations correspond with the contaminant source areas identified and are located west of the building. A groundwater sample from monitoring well MW-11 (located adjacent to the former TCE AST) yielded a TCE concentration of 10,000 µg/L in 1989; the concentration of TCE in the November 2020 sample from MW-11 was 1.06 µg/L, a **>99.9%** reduction.

Summary of Remedial Actions

A brief summary of the remediation activities undertaken over the past 30 years is presented below. Please refer to the NYSDEC's Site Record, located in Appendix B, for additional details.

- October 1986 - March 1987: Use of TCE was discontinued. Various ASTs and USTs containing TCE, tramp oil, fuel oil and muriatic acid were removed. Visibly contaminated soil encountered during the tank work was also removed. In addition, four areas of stained soil related to past material handling practices were excavated and disposed of off-site.

- January 1989: The Settlement Agreement for remediation of the Site was signed between the NYSDEC, other parties, and SCC on January 12, 1989. In accordance with this agreement, NYSDEC, Cortland County Soil and Water Conservation District and the Cortland County Health Department were designated responsibility for monitoring and remediating off-site contamination.

- September – December 1989: Approval of the Phase I Remedial Design was obtained from the NYSDEC on September 22, 1989. Phase I consisted of investigation, design, construction and installation of a groundwater recovery well. The groundwater recovery well came on-line on December 29, 1989.

- May 1990: Approval of the Phase II Remediation Design was obtained by SCC from the NYSDEC on May 29, 1990. Phase II included installation of a Soil Vapor Extraction (SVE) system and groundwater remediation system by SCC. The groundwater remediation system consisted of an air stripping column (aeration tower), distribution piping (water from recovery well to the air stripper and from the air stripper to the rock cascade and infiltration lagoons), a rock cascade and engineered infiltration lagoons.

- August 1990: The approved SVE system came on-line.

- October 1990: The approved groundwater remediation system came on-line.

- March 1994: NYSDEC issues the Record of Decision (ROD) for the Site. The Site was reclassified as a Class 4 following issuance of the ROD.

- 1996-1998: With NYSDEC approval, the SVE system was shut down and decommissioned.

- 1997-1998: With NYSDEC approval, the well monitoring frequency was reduced to annual.

- April 1999: South Cortland Warehouse Project (SCWP) purchased the SCC land and buildings and assumed operational responsibilities for the groundwater remediation system.

- May 2001: With the permission of the NYSDEC, the stripping tower blower was turned off. The influent TCE concentration had declined to the point that the tower was able to reduce TCE levels adequately to meet discharge limits without forced airflow. Sampling frequency of the tower influent, tower discharge and outfall cascade was increased from quarterly to monthly.

- December 2008: a former tumbling area was identified within the building footprint and a groundwater monitoring well (MW-L16) was installed in this area.

- May 2010: CCC purchased the Site from SCWP and assumed known operational responsibilities for the groundwater remediation system.

- January 2012: A sub-slab depressurization/SVE system was energized in the former tumbling area located adjacent to monitoring well MW-L16.

Summary of Monitoring Program & Remedial Effectiveness

Monitoring at the Site consists of monthly sampling of the groundwater remediation system, quarterly monitoring of MW-10D and annual sampling of groundwater monitoring wells. The locations of all monitoring wells are depicted on Drawing No. 2, located in Appendix A.

On February 14, 2018, a new groundwater monitoring well, TMW-1, was installed associated with the boundary modification to accommodate redevelopment of the northern side of the Site. TMW-1 will be included in the shutdown test monitoring, see the “Proposed Shut-Down Test and Schedule” section below for details.

Table No. 1, located in Appendix C, compares the highest TCE concentration observed at each groundwater monitoring well to the TCE concentration detected during the November 2019 and November 2020 annual sampling events.

As summarized in Table No. 1, the TCE concentrations have decreased in all of the on-site monitoring wells. The TCE concentrations in the source area (as defined by monitoring wells MW-6, MW-7, MW-8, MW-11, MW-12S and MW-12D) have declined by more than 99%.

Although year to year fluxuations are observed, overall the TCE concentrations detected in all wells continue to indicate a decreasing trend over the 30-year span since the GWETS was activated. In 2019 and 2020 annual sampling events, the reported TCE concentrations in all samples were below 5 ug/L; and the influent concentrations to GWETS have been below 5 ug/L since May 2019.

Proposed Shut-Down Test and Schedule

GeoLogic proposes to shut down the recovery well in the Spring of 2021.

The following shutdown monitoring is proposed:

- The week prior to the shutdown, groundwater elevations will be gauged three times at all monitoring well locations on-site;
- The first day of the shutdown, groundwater elevations will be gauged four times (once before shutdown and 3 times after shutdown) at all monitoring well locations on-site;
- The first week of the shutdown, groundwater elevations will be gauged daily at all monitoring well locations on-site;
- One month after shutdown, groundwater elevations will be gauged at all monitoring well locations on-site and samples will be obtained from monitoring wells MW-1S, MW-1D, MW-7, MW-10S, MW-10D, MW-11, MW-12S, MW-12D and TMW-1. These wells have historically exhibited the highest TCE concentrations and include the perimeter wells where TCE concentrations are over 5 µg/L were observed in the past.
- Two months after shutdown, groundwater elevations will be gauged at all monitoring well locations on-site and samples will be obtained from monitoring wells MW-1S, MW-1D, MW-7, MW-10S, MW-10D, MW-11, MW-12S, MW-12D and TMW-1;
- Three months after shutdown, groundwater elevations will be gauged at all monitoring well locations on-site and samples will be obtained from monitoring wells MW-1S, MW-1D, MW-7, MW-10S, MW-10D, MW-11, MW-12S, MW-12D and TMW-1;
- Following the three-month test period, the GWETS will be restarted and the normal monitoring schedule will resume.
- The analytical results along with the corresponding water level measurements will be forwarded to NYSDEC and NYSDOH as they are received by GeoLogic during the shutdown test.

The following shutdown schedule is proposed:

- Pre-shutdown groundwater levels: Three events the week of March 1-5, 2021;

- GWETS Shutdown (four sets of groundwater levels): March 8, 2021;
- The first week after the shutdown groundwater levels: Daily measurements the week of March 8 – 12, 2021;
- 1st Monthly Sampling Event: On or about April 5, 2021;
- 2nd Monthly Sampling Event: On or about May 3, 2021;
- 3rd Monthly Sampling Event: On or about June 1, 2021;
- Restart GWETS: On or about June 1, 2021;
- Submittal of Final Report: On or before July 30, 2021;
- Project Meeting: August 2021.

All groundwater samples will be submitted for analysis to Life Science Laboratories, Inc., LSL Central Lab located at 5854 Butternut Drive, East Syracuse, New York. The groundwater samples will be analyzed for specific Volatile Organic Compounds (VOC's) (1,1,1-Trichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethene, Trichloroethene, Tetrachloroethene and Vinyl Chloride) utilizing EPA Method 8260B.

All samples will be submitted for a 5-business day turnaround.

If any of the results from the interior monitoring wells (MW-6, MW-7, MW-8, MW-11, MW-12S and MW-12D) exceed 5 µg/L, then these wells as well as the perimeter wells will be sampled again within 1 week of our receipt of the results. If any of the perimeter well results exceed 5 µg/L, the test will be immediately terminated and the GWETS restarted.

The groundwater levels will be utilized to observe changes in the hydraulic gradient as well as determine the direction of groundwater flow during non-pumping conditions.

Each set of analytical results will be reviewed and the TCE concentrations plotted to determine contaminant trends over time with the intent of comparing TCE concentrations during pumping and non-pumping conditions.

A report will be submitted documenting results of the Shutdown Test and will include recommendations for future operation of the GWETS.

If you are in agreement with the planned course of action, please confirm so in writing by February 26, 2021.

If you have any questions, or additional information is required, please do not hesitate to contact the undersigned.

Respectfully submitted,

GeoLogic NY, P.C.

Forrest Earl, P.G.
President / Principal Hydrogeologist

Enc.: Appendix A Drawings
Appendix B NYSDEC Site Record
Appendix C Table

cc: *All via e-mail*
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Sarah Saucier, NYSDEC
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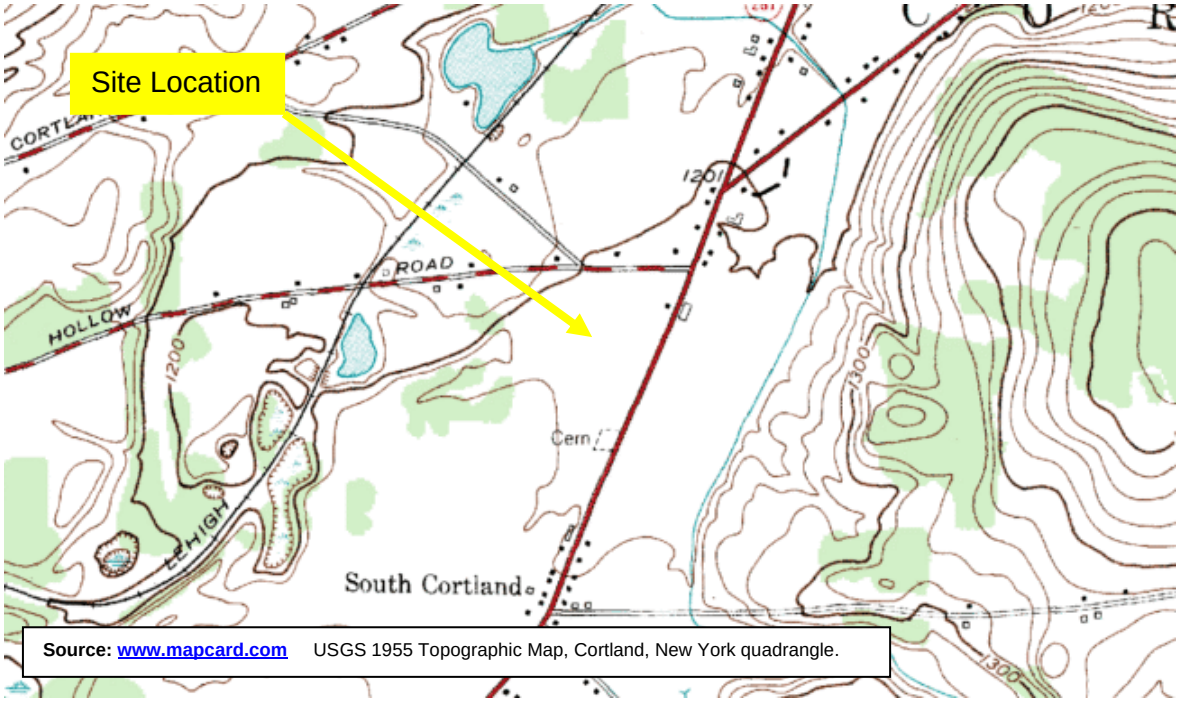
Steve Berninger, NYSDOH
Scarlet McLaughlin, NYSDOH
Nathan Karnes, TRC

File P:\PROJECTS\2010\210087-CCC\REPORT\Shut Down Test\Shutdown Test 2021\Recovery Well Shutdown Test 2021.docx



Source: www.mapcard.com USGS 1955 Topographic Map, Cortland, New York quadrangle.

Source: www.earth.google.com

N

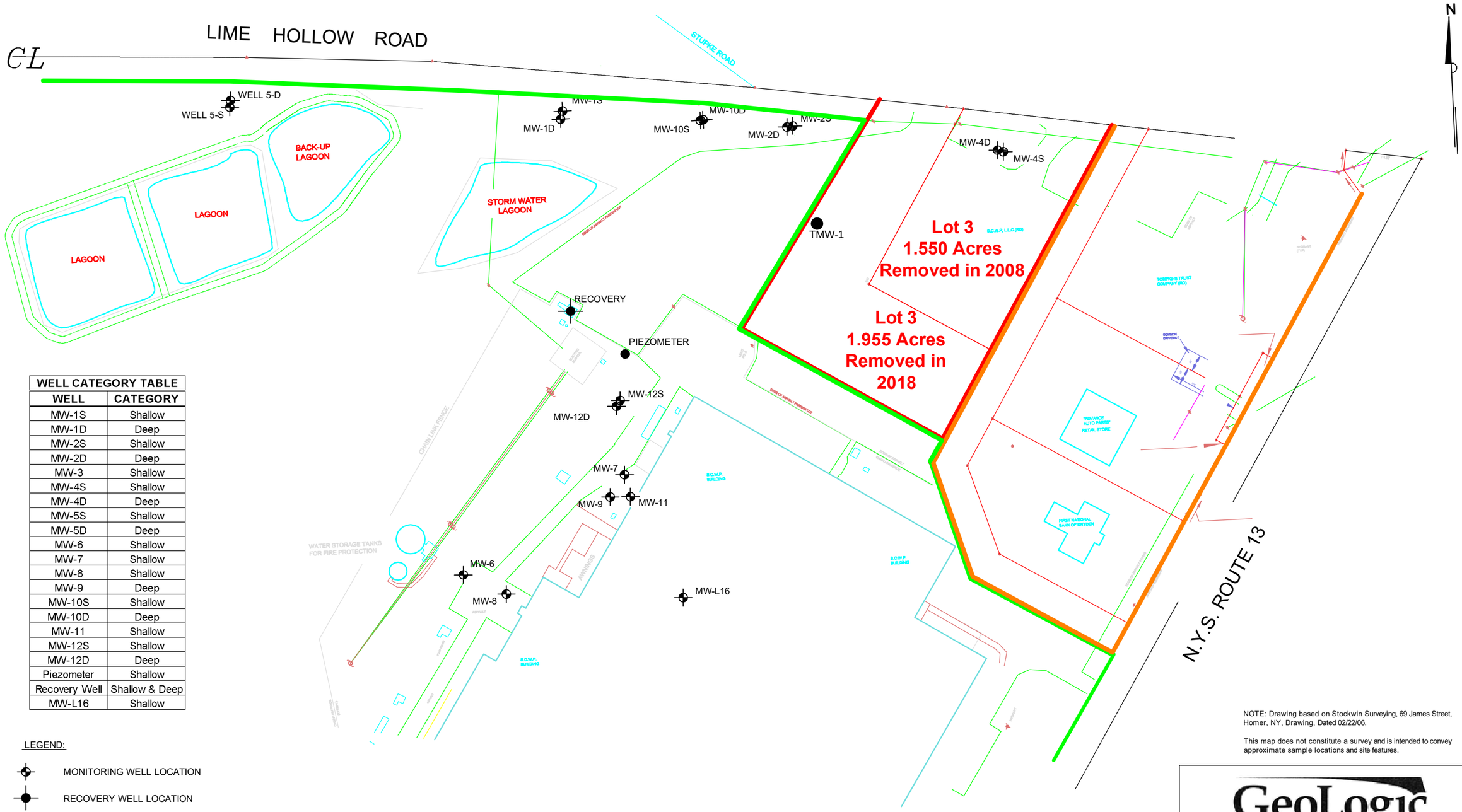
Project North

GeoLogic

GeoLogic NY, PC

SITE LOCATION PLAN
SITE #: 712006
FORMER SCM-CORTLANDVILLE
839 NYS ROUTE 13, CORTLANDVILLE, NY

DRAWN BY:	SCALE:	PROJECT NO:
CTG	Not To Scale	210087
REVIEWED BY:	DATE:	DRAWING NO:
FCE	JUNE. 2019	1



WELL CATEGORY TABLE	
WELL	CATEGORY
MW-1S	Shallow
MW-1D	Deep
MW-2S	Shallow
MW-2D	Deep
MW-3	Shallow
MW-4S	Shallow
MW-4D	Deep
MW-5S	Shallow
MW-5D	Deep
MW-6	Shallow
MW-7	Shallow
MW-8	Shallow
MW-9	Deep
MW-10S	Shallow
MW-10D	Deep
MW-11	Shallow
MW-12S	Shallow
MW-12D	Deep
Piezometer	Shallow
Recovery Well	Shallow & Deep
MW-L16	Shallow

LEGEND:

- MONITORING WELL LOCATION
- RECOVERY WELL LOCATION
- PIEZOMETER LOCATION
- APPROXIMATE SITE BOUNDARY
- LOT 3 APPROXIMATE BOUNDARY
- DELISTED APPROXIMATE BOUNDARY

\...\210087\TECH\BASE MAP 12-2019.DWG

APPROXIMATE SCALE:

0' 10' 70' 140' 280'

NOTE: Drawing based on Stockwin Surveying, 69 James Street, Homer, NY, Drawing, Dated 02/22/06.

This map does not constitute a survey and is intended to convey approximate sample locations and site features.

GeoLogic

GeoLogic NY, PC, Homer, New York

MONITORING WELL LOCATION PLAN
FORMER SCM-CORTLANDVILLE (NYSDEC SITE NO. 712006)
839 NYS ROUTE 13
CORTLANDVILLE, NEW YORK

DRAWN BY:	SCALE:	PROJECT NO.:
SDW/CTG	AS SHOWN	210087
REVIEWED BY:	DATE:	DRAWING NO.:
FCE	NOV. 2020	2

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

Environmental Site Remediation Database Search Details

Site Record

Administrative Information

Site Name: SCM - Cortlandville
Site Code: 712006
Program: State Superfund Program
Classification: 04
EPA ID Number:

Location

DEC Region: 7
Address: 839 Route 13 South
City: Cortlandville Zip: 13045
County: Cortland
Latitude: 42.570466562
Longitude: -76.222647538
Site Type:
Estimated Size: 46.226 Acres

Institutional And Engineering Controls

Control Type:
Decision Document

Control Elements:
Groundwater Treatment System
Vapor Mitigation
Groundwater Containment
Site Management Plan

Site Owner(s) and Operator(s)

Current Owner Name: Cortland Commerce Center LLC
Current Owner(s) Address: 839 NYS Route 13
Cortland,NY, 13045
Owner(s) during disposal: SMITH CORONA CORPORATION

Hazardous Waste Disposal Period

From: late 1950s **To:** 1988

Site Description

Location: The SCM-Cortlandville site is located in a suburban area, at 839 Rte 13 South in the town of Cortlandville, Cortland County. It is on the south side of the intersection of Rte 13 and Lime Hollow Road. Site Features: The main site features include the large (415,000 ft2) single-story former typewriter manufacturing building. There two large water towers on the western (back) side of the building, a large parking lot on the north side of the building between the building and Lime Hollow Road, parking areas on the east side between the building and Rt 13, and the JM Murry Center is located to the south (formerly part of the SCM complex). The 750 GPM pumping well is located approximately 190 feet off the NW corner of the building. An air stripping tower is located adjacent to the NW corner of the building. Discharge from the air stripper goes to two 140' x 140' discharge lagoons, located in the NW corner of the site property. The western one-third (approx) of the site property is vacant woodland & scrub brush. Current Zoning/Use: The site is currently zoned as industrial and is owned and operated by Cortland Commerce Center, LLC (CCC). Current site use is light commercial manufacturing, office space, and warehouse storage. Surrounding uses are light commercial and residential. Historical Use: The site building was constructed in the early 1960's and was occupied and used by Smith Corona (SCM) to manufacture typewriters and related parts and equipment. In 1999 the site was purchased by the South Cortland Warehouse Project (SCWP) who assumed operational responsibility for the groundwater remediation system from SCM. In 2010 the site was purchased by CCC, who assumed operational responsibility for the groundwater remediation system from SCWP. Contamination & Remedial History: Alleged intentional dumping in the area to the west of the building and leaky underground solvent storage tanks led to groundwater and soil contamination. The contamination was first discovered in 1986 at a downgradient petroleum spill investigation, and chlorinated solvents (primarily TCE) were traced back to the SCM site. TCE use was discontinued at that time and several above-ground and underground storage tanks were removed, and visibly contaminated soils around the tanks was excavated. A settlement agreement between the NYSDEC and SCM was signed in 1989. A Remedial Investigation and Feasibility Study was performed during which a groundwater extraction & treatment system (GWETS) and a soil vapor extraction system (SVE) were installed and operated. In March of 1994 a ROD was issued which included the GWETS and SVE systems as the preferred remedial alternatives. Off-site contamination was addressed through a program of public water line extension, provision of air-stripping for the public water supply, and ongoing environmental monitoring. The site was reclassified to a class 4 following the issuance of the ROD. The pump and treat system has operated continuously since it's installation. The system was monitored quarterly until 2001, when influent TCE concentrations had been reduced to the point that the tower was able to achieve discharge limits without forced airflow, the blower was shut off and the sampling frequency increased to monthly. The SVE system operated from it's installation in

1990 until sometime between 1996-1998 when it was shut-down and decommissioned. The site is presently in OM&M as a class 4 site. An offsite soil gas/indoor air/groundwater study was initiated in 2005. This study was conducted by NYSDEC as part of the soil vapor intrusion (SVI) legacy site evaluations, because SCM declined to take responsibility for the offsite contamination as per the 1989 settlement agreement. Sampling of over 85 structures has been completed, with 54 SVI mitigation system installations required to address potential exposures. In 2007, SCWP submitted an on-site SVI evaluation report, which identified a previously unknown source area inside the building. This source area is a former "tumbling pit" which was used to roll machined metal parts in sand-filled barrels to remove burrs left from the cutting process. The pit was unlined, with no slab, and open to the soils beneath the building. The machined parts were typically coated in TCE (used as a cutting oil & degreaser), and over many years of operation the soils and groundwater beneath the tumbling pit became contaminated with TCE. Levels of TCE in sub-slab and indoor air onsite required mitigation and in January 2012 a SVE system was installed in the tumbling pit source area. This system functions as both a remedial technology (removing contaminants from the source area) and a SVI exposure mitigation system (the SVE creates a negative pressure differential across the slab to prevent soil vapor intrusion). Follow-up groundwater monitoring at the site perimeter and down-gradient off-site wells is being conducted by NYSDEC to observe the effectiveness of the tumbling pit source remediation at reducing TCE concentrations in groundwater migrating off-site. The site boundaries have been modified numerous times to remove parcels that were not involved with the original contamination and not needed for the remedial system design operation. Currently the site consists of approximately 46 acres. Operable Units: The remediation program consists of four operable units. An operable unit represents a portion of a remedial program for a site that for technical or administrative reasons can be addressed seperately to investigate, elimiate or mitigate a release, threat of release, or exposure pathway resulting from the site contamination. OU-1 is the on-site remedial program. OU-2 is the off-site investigation. OU-3 is the soil vapor intrusion investigation. Site Geology & Hydrogeology: The site is located on a glacial aquifer system consisting of thick outwash deposits extending from the Valley Heads moraine (SW of the site), northeast to the City of Cortland and the Tioughnioga River. In the vicinity of the site, an unconfined sand and gravel aquifer extends from ground surface 80 to 110 feet to an underlying glacio-lacustrine unit 30-70 feet thick. Beneath the glacio-lacustrine unit is a confined sand & gravel aquifer up to 80 feet thick overlying till and Devonian shale bedrock. Off-site wells in the confined aquifer have not shown any evidence of contamination. The water table of the surficial aquifer is seasonally variable and is typically between 35 and 45 feet below grade at the site. The site building and parking areas sit on a terrace above a former glacial meltwater channel. The GWETS discharge lagoons and western portions of the site property are down in the former meltwater channel. A cut-bank for the meltwater channel composes part of the site's northern perimter along Lime Hollow Road. To the north, the offsite contaminant plume (enveloping the areas affected by SVI) travels down the historic meltwater channel which extends to the NE and is generally

coincident with Otter Creek. The water table in the areas downgradient from the site is generally 10-15 feet below ground, since the ground surface elevations are lower than at the site. This closer distance to the water table is one reason that SVI has been a concern over the aerial extent of the TCE plume.

Contaminants of Concern (Including Materials Disposed)

Contaminant Name/Type

ethylbenzene
xylene (mixed)
trichloroethene (TCE)
1,1,2-trichlorethylene

Site Environmental Assessment

Nature and Extent of Contamination: The primary contaminant of concern at the site is Trichloroethene (TCE). This is the primary contaminant of concern in all media (soil, groundwater, and soil vapor) both on-site and off-site. Soils from the areas around the buried solvent tanks were impacted and leached contamination to the groundwater beneath the site. Soils in the source areas identified during the intiial remedial investigation had TCE concentrations up to 660 parts per million (PPM). Surface soils outside the source areas are not known to be contaminated. Soils in the vicinity of MW-7 (highest soil contamination) are contaminated with TCE down to the water table. Shallow soil contamination in the former tank and loading areas has been remediated by the old SVE system, and the previously unknown source area in the tumbling pit area is currently being remediated by the SVE system installed in January 2012. Groundwater is impacted as it flows beneath the source areas and comes into contact with TCE contaminated soils. Prior to remediation, shallow groundwater at the site perimeter had TCE concentrations ranging from non-detect (ND) to 71 parts per billion (PPB). Deeper groundwater at the site perimeter had TCE concentrations ranging from ND - 13 PPB. In the vicinity of the former solvent storage tanks and loading areas, TCE concentrations in shallow groundwater ranged from 36 to 700 PPB, while deeper groundwater in this area had TCE concentrations between 91 and 410 PPB. Offsite groundwater contamination appears to be limited to the shallow surficial aquifer, and TCE concentrations have ranged historically from ND to 100 PPB. Operation of the SVE and GWETS over time has reduced the groundwater TCE concentrations significantly, but still not below the NYS groundwater standard of 5 ppb. 2011 groundwater samples from the site interior (source area)monitoring wells had TCE ranging from ND to 37 PPB. Samples from site perimeter wells had TCE ranging from ND to 6 PPB.

Site Health Assessment

Homes in the area are supplied with public water and remaining on-site soil contaminants are sub-surface. The site management plan establishes guidance for appropriate actions when on-site sub-surface soils are disturbed. The result of the soil vapor intrusion investigation in the area surrounding the site resulted in the installation of fifty-four sub-slab depressurization systems.

For more Information: E-mail Us

Refine This Search

Table No. 1
Comparison of TCE Concentrations in Groundwater

Well #	Highest TCE Concentration[1]	Date Highest TCE Observed[2]	Nov. 2019 TCE Concentration[3]	Nov. 2020 TCE Concentration[3]	Highest TCE vs. Most Recent % Change[4]
Perimeter Shallow Wells					
MW-1S	69	Aug-1989	1.01	1.32	-98.09%
MW-2S	10	Nov-1991	1.35	NS	-86.50%
MW-4S	2	Nov-1990 & Aug-1991	NS	NS	NA
MW-5S	3	Nov-1990	<0.5 ND	NS	-100.0%
MW-10S	200	Aug-1989	1.59	1.28	-99.36%
Perimeter Deep Wells					
MW-1D	45	Aug-1989	0.72	1.01	-97.76%
MW-2D	11	Aug-1989	NS	NS	NA
MW-4D	1	Aug-1990	<1.0 ND	NS	-100.0%
MW-5D	5	Nov-1990	2.08	NS	-58.40%
MW-10D	71	Aug-1989	1.69	0.92	-98.70%
Interior Shallow Wells					
MW-6	230	Aug-1989	1.11	DRY - NS	-99.52%
MW-7	290	Feb-1990	1.83	1.22	-99.58%
MW-8	240	Aug-1989	1.44	0.57	-99.76%
MW-11	10,000	Aug-1989	4.40	1.06	-99.99%
MW-12S	280	Aug-1990	1.91	1.34	-99.52%
Interior Deep Wells					
MW-9	33	May-1993	0.74	NS	-97.76%
MW-12D	45	May-1992	1.62	NS	-96.40%
Facility Well (Installed 2008)					
MW-L16	41	Nov-2008	2.03	0.74	-98.20%

Notes:
All concentrations in parts per billion (ppb).
Highlighted cell indicated decrease in TCE Concentration.
[1] Highest TCE concentration observed.
[2] Date the highest TCE concentration was observed.
[3] TCE concentration detected in November 2019 or 2020.
[4] Percent change in TCE concentration between highest concentration and November 2019 or 2020.
NA = Not Applicable.
ND = Not detected at the reporting limit.
NS = Not sampled.