PROPOSED RECORD OF DECISION AMENDMENT
POWERS CHEMCO SITE

City of Glen Cove / Nassau County / Registry No. 1-30-028 January 2014

Prepared by the New York State Department of Environmental Conservation
Division of Environmental Remediation

1.0 INTRODUCTION

On March 22, 1991, the New York State Department of Environmental Conservation (Department) signed a Record of Decision which selected a remedy to cleanup the Powers Chemco Site, also known as the Columbia Ribbon and Carbon Manufacturing Site.

A Record of Decision (ROD) was issued by the Department in March 1991which called for a remedial system consisting of a groundwater pump and treat system, and an air sparge/soil vapor extraction system to treat volatile organic compounds (VOCs) present at the site. The remedial system was designed and constructed based on results of the pilot study approved by the Department in 1992. The remedial system operation began in 1994 and was shutdown in 1999 in accordance with the approved Performance Analysis Design Modification Plan. Since then, the remedial system has been inactive as it was not cost-effective to operate. Post-shutdown monitoring was initiated in 2000.

The purpose of this document is to propose a change in the remedial action from the initial actions approved in the 1991 ROD for the Powers Chemco Site. After the Department approved the permanent shutdown of the remedial systems in 1999, post-shutdown sampling results indicated the continued presence of VOC contamination in soil and groundwater at elevated levels. Based on these results, the Department directed that Konica Minolta (the responsible party) to conduct additional investigation and remediation of the residual VOC contamination.

Based on the results of these investigations and the evaluation of the performance of the original ROD remedial actions, the Department is proposing an amendment to the 1991 ROD, as the previously selected remedy has not achieved the remedial action objectives for this site.

Based on the evaluations conducted of the remedy in the 2013 Feasibility Study Report, the source of contamination in soil at the site will be remediated by conventional excavation, and disposed off-site at a permitted facility. Water collected during the dewatering process will be treated prior to discharge. The excavation remedy can be quickly implemented and is the most permanent solution for removal of VOC contaminated soil and sources to groundwater. Dewatering of groundwater (with appropriate treatment) during excavation will also remove additional contamination from the site.

In-situ chemical oxidation (ISCO) will be used to remediate residually impacted groundwater after the excavated area is backfilled with clean sandy soil. Clean sandy soil backfill in the excavated area would improve the ability of injected chemical oxidant material to treat the remaining groundwater contamination.

This Proposed Record of Decision Amendment will become part of the Administrative Record for this site. The information here is a summary of what can be found in greater detail in the document repositories listed below.

A public comment period has been set to begin on January 17, 2014 to provide an opportunity for you to comment on these proposed changes. A public meeting is scheduled for January 30, 2014 at the Sea Cliff Village Library beginning at 7:00 pm.

At the meeting, a description of the original ROD and the circumstances that have led to proposed changes in the ROD will be presented. After the presentation, a question and answer period will be held, during which you can submit verbal or written comments on the proposal. We encourage you to review this summary and attend the meeting.

Written comments may also be sent to:

Girish Desai, P.E., Project Manager
NYS Department of Environmental Conservation, Region 1
Division of Environmental Remediation
SUNY @ Stony Brook
50 Circle Road
Stony Brook, New York 11790-3409

Comments will be summarized and responses provided in a Responsiveness Summary.

The information here is a summary of what can be found in greater detail in reports that have been placed in the Administrative Record for the site. These documents are available at the following repositories:

NYSDEC, Region One Headquarters
SUNY @ Stony Brook
50 Circle Road
Stony Brook, NY 11790-3409
Phone: (631) 444-0243
Monday-Friday: 8:30 am – 4.45 pm

Glen Cove Public Library
4 Glen Cove Avenue
Glen Cove, NY 11542-2885
Phone: (516) 676-2130

Monday-Thursday: 9:00 am - 9:00 pm
Friday: 9:00 am - 5:00 pm
Saturday: 9am - 1pm until September 7th
Sunday - Closed until October 6th

The Department may modify or reject the proposed changes based on new information or public comments. Therefore, the public is encouraged to review and comment on this proposal.

2.0 SITE INFORMATION

2.1 Site Description

Site Location: The Powers Chemco Site, also known as the former Columbia Ribbon and Carbon Manufacturing Company Site, is a vacant, 1.4 acre property located within the 15 acre Konica Minolta property in the City of Glen Cove, Nassau County. The site is bounded to the south and east by the former Konica Minolta facility, to the west by Li Tungsten Parcel B (USEPA Superfund site) and to the north by a public roadway (The Place). All buildings on the adjacent 13.6 acre former Konica Minolta facility were demolished in the past year. Please see Figure 2 which shows the site boundary within the larger property.

Site Features: The 1.4 acre site served as an employee parking lot when the Konica Minolta facility (former Powers Chemco) was operating. To the north and east of the site, the properties are predominantly residential. To the south and west of the site is an industrial corridor that includes five other inactive hazardous waste disposal sites (i.e., State Superfund sites) and one Environmental Restoration Program site. The site is approximately 1,200 feet north and 60 feet above the eastern end of Glen Cove creek, which empties into Hempstead Harbor. The topography of the site is relatively flat. An inactive remedial treatment plant is still present at the site.

Current Zoning/Use(s): The property is zoned for industrial use and is currently vacant.

Historic Use(s) and Source(s) of Contamination: Powers Chemco, Inc., a manufacturer of photographic equipment and supplies, purchased this site from Columbia Ribbon Carbon and Manufacturing Co. (Columbia) for use as a parking lot in 1979.

In 1983, Powers Chemco discovered the subsurface contamination while excavating. For an undetermined period prior to 1979, Columbia had disposed of wastes from the production of blue printing inks, carbon paper and typing ribbon in open pits behind their manufacturing buildings. Reportedly, wastes from 55-gallon drums were dumped into the open pits. The drums were then crushed and added to the pits before burial. An aerial photograph taken between 1950 and 1960 showed the location of two or three of these pits. Additionally, wastes were pumped through a two-inch galvanized pipe from the Columbia plant directly into the pits. The hazardous and industrial wastes disposed of in the area include, but were not necessarily limited to toluene, ethylbenzene, ethyl acetate, and other residues from the formulation of printing inks.

In the fall of 1987, Powers Chemco, Inc. was renamed Chemco Technologies, Inc., which was subsequently purchased and renamed Konica Imaging U.S.A., Inc. The owner name has changed several times since then, and in December 2011 became Konica Minolta Holding USA Inc.

Site Geology/Hydrogeology: There are three principal aquifers in the area of the site. These are the Upper Glacial, Magothy, and Lloyd aquifers. The site and its surrounding areas are underlain by the Harbor Hill ground moraine which consists of a mixture of sand, silt, clay and boulders. The soil beneath the site consisted of layers ranging from medium to coarse sand and gravel to hard, dense silt and clay. The presence of a shallow, perched water table zone was noted beneath most of the site. The depth to water in the perched zone ranges from 6 to 14 feet. The groundwater flow in the perched zone varies from southeast to southwest. Based upon regional hydrogeological data, groundwater in the shallow upper glacial aquifer flows to the south towards Glen Cove Creek. The Magothy aquifer is the principal source of drinking water in the area. The City of Glen Cove draws water from the 200-300 foot zone of the Magothy from public supply wells located east of the site.

A site location map is attached as Figure 1. Figure 2 shows the site boundary.

2.2 Summary of Human Exposure Pathways

Contaminated soil remains at the site below pavement or clean backfill; however, people will not come in contact with contaminated soil unless they dig below the surface materials. People are not drinking the contaminated groundwater because the area is served by a public water supply that is not affected by this contamination. Volatile organic compounds in the groundwater or soil may move into the soil vapor (air spaces within the soil), which in turn may move into overlying buildings and affect the indoor air

quality. This process, which is similar to the movement of radon gas from the subsurface into the indoor air of buildings, is referred to as soil vapor intrusion. Because there are no on-site buildings, inhalation of site contaminants in indoor air due to soil vapor intrusion does not represent a concern for the site in its current condition. However, the potential exists for the inhalation of site contaminants due to soil vapor intrusion for future on-site development. In addition, sampling indicates soil vapor intrusion is not a concern for off-site buildings.

2.3 Summary of Environmental Assessment

Nature and Extent of Contamination: Based upon subsequent investigations conducted after the implementation of the 1991 ROD remedy (i.e., groundwater pump and treat system, air sparge/soil vapor extraction system), the primary, residual contaminants of concern (COCs) are VOCs. These include toluene, xylene, ethylbenzene, methyl ethyl ketone (MEK) and benzene.

Nature and Extent of Impacted Soils:

Significant levels of COCs are still present in soils at the site (below 5 feet in depth) despite the remedial actions undertaken in accordance with the 1991 ROD. During the 2008 limited subsurface investigation, elevated levels of toluene, xylenes (total), ethylbenzene and benzene were detected in on-site soils at 1,900 parts per million (ppm), 230 ppm, 37 ppm and 0.430 ppm, respectively. These concentrations exceed the Department's protection of groundwater soil cleanup objectives (SCOs) of 0.7ppm, 1.6 ppm, 1 ppm and 0.06 ppm, respectively.

A new Remedial Investigation (RI) was conducted between 2011 and 2012 to further delineate the levels remaining in the soil. Toluene was detected from 0.79 ppm to 1,500 ppm in 16 soil borings; xylenes were detected from 4.8 ppm to 350 ppm in 11 soil borings; ethylbenzene was detected from 1.4 ppm to 65 ppm in 8 soil borings; and MEK was detected from 0.430 ppm to 170 ppm in 3 soil borings.

The investigation identified an area of soil contamination located off-site between the northern property line and The Place.

Nature and Extent of Impacted Groundwater:

Significant levels of COCs are also still present in groundwater. The 2008 limited subsurface investigation identified elevated levels of toluene, total xylenes and ethylbenzene in the groundwater at 520,000 parts per billion (ppb), 12,000 ppb and 2,600 ppb, respectively. These concentrations exceed the Department's Ambient Water Quality Standards and Guidance values (Standards, Criteria and Guidance: SCGs) of 5 ppb.

Results of groundwater samples collected during the RI (2011-2012) also indicated elevated levels of toluene, xylenes, benzene and ethylbenzene. Toluene was detected from 10 ppb to 320,000 ppb at 8 locations; total xylenes were detected from 12 ppb to 22,000 ppb at 7 locations; ethybenzene was detected from 5.6 ppb to 4,700 ppb at 7 locations, respectively. Benzene was detected from 1.5 ppb to 36 ppb at 6 locations, exceeding the SCG of 1 ppb.

Naphthalene was detected at a maximum concentration of 210 ppb, exceeding the SCG of 10 ppb.

The groundwater samples also detected several metals including arsenic, chromium, lead, and mercury. Arsenic, chromium, lead and mercury were detected at maximum concentrations of 205 ppb, 1,310 ppb,

643 ppb and 12.9 ppb, exceeding respective SCGs of 25 ppb, 50 ppb, 25 ppb and 0.7 ppb.

Concentrations of xylenes and ethylbenzene were detected in one off-site monitoring well located immediately north of the site at 2,200 ppb, and 310 ppb, respectively, indicating a localized area of impacted groundwater in the perched zone immediately north of the site, beneath the grassed shoulder south of The Place.

Results from a downgradient monitoring well (MW-101) screened in the deeper flow zone indicated that there is no downgradient migration of VOCs in groundwater from the source area.

Based on the soil and groundwater analytical results, soil and groundwater source areas have been identified. These are presented on Figure 3.

Nature and Extent of Impacted Soil Vapor:

In 2005, a soil gas survey was conducted on-site. The VOC's detected in groundwater were also present in the soil gas samples. Levels of VOCs decreased significantly from the source area to the perimeter soil gas locations. The highest concentration of total VOCs (7,316 ug/m3) was detected in soil gas sample SG-06. The soil gas samples collected within the source area also revealed the presence of low levels of chlorinated VOC's, predominantly perchloroethylene (PCE), trichloroethylene (TCE) and vinyl chloride (VC), at concentrations between 6 ug/m3 and 121 ug/m3.

In 2007, a soil vapor intrusion (SVI) investigation was conducted at seven residences located on the north side of The Place. Toluene was detected from 1.1 ug/m3 to 8.8 ug/m3 range in all seven sub-slab soil vapor samples. The benzene, toluene, ethylbenzene and xylene (BTEX) concentrations in sub-slab vapor ranged from 2.21 ug/m3 to 18.97 ug/m3. Acetone concentrations in sub-slab vapor ranged from non-detect to 1,100 ug/m3. MEK concentrations in sub-slab vapor ranged from non-detect to 150 ug/m3.

A total of 14 indoor air samples were collected from the seven residential properties. The indoor air sampling results showed all samples contained low concentrations of toluene in basement indoor air, ranging from 2.03 ug/m3 to 37.9 ug/m3; and first floor indoor air ranging from 2.72 ug/m3 to 37.9 ug/m3. The BTEX concentrations in basement indoor air ranged from 4.21 ug/m3 to 73.19 ug/m3. The BTEX concentrations in the first floor indoor air ranged from 6.34 ug/m3 to 68.16 ug/m3. MEK concentrations in basement and first floor ranged from non-detect to 39.6 ug/m3 and non-detect to 26.1 ug/m3, respectively. Acetone concentrations in basement and first floor air ranged from non-detect to 45.4 ug/m3, and non-detect to 72 ug/m3, respectively.

In 2008, SVI samples were collected from one additional residence. Acetone and MEK were detected at 690 ug/m3 and 22 ug/m3, respectively in sub-slab vapor. MEK was detected in basement and first floor indoor air at a concentration of 1.68 ug/m3 and 1.89 ug/m3, respectively. MEK was present in outdoor air at 1.23 ug/m3. Acetone was detected in basement and first floor air at a concentration of 22.7 ug/m3 and 25.4 ug/m3. Acetone was also present in outdoor air sample at 16.2 ug/m3.

Overall, off-site soil vapor, sub-slab vapor and indoor air results indicate the presence of site-related contaminants, but not at levels where actions are needed to address exposures related to soil vapor intrusion.

2.4 Original Remedy

The major elements of the original, ROD-selected remedy can be summarized as follows:

- Perform a pilot scale test at the site for a dual phase groundwater/soil vapor vacuum extraction and treatment system to refine the estimates for a full scale treatment system. A full scale system will be designed and constructed based upon the results of the pilot test.
- Groundwater will be extracted using vacuum lift and/or pumping from recovery wells. Activated carbon will be used to treat contaminated groundwater. Treated groundwater will be discharged to the Glen Cove Creek or to the local Publicly Owned Treatment Works.
- Contaminated soil will be treated in-situ by air sparging and soil vapor extraction. Soil vapor laden with contaminants from the soil will be treated by either activated carbon, catalytic oxidation, vapor incineration, or a combination of these depending upon the results of the pilot test.
- Spent activated carbon will be regenerated rather than disposed, to the extent practicable.

3.0 DESCRIPTION OF PROPOSED CHANGES

3.1 New Information

Based on the results of investigations conducted after shutdown of the 1991 ROD remedy, contamination is still present at elevated levels. Thus, the remedial system was not successful in remediating the site. It is believed that the heterogeneous nature of site soils contributed to this lack of success.

Soil sampling results have indicated that the VOC impacted soils ("source material") are still present below the water table in discrete locations. The residual pockets of VOC contamination in many cases are present in fine-grained material, including silt and clay. The VOCs are tightly bound in the fine-grained matrix, as evidenced by the inability of a pump and treat system and air sparge/soil vapor extraction (AS/SVE) system to adequately remove the VOCs from the impacted media.

3.2 Proposed Changes

1. Excavation and off-site disposal of approximately 10,000 cubic yards (16,000 tons) of contaminated subsurface soils exceeding the 6NYCRR375-6 protection of groundwater soil cleanup objectives (SCOs). Dewatering of contaminated groundwater to facilitate excavation is necessary due to the shallow depth of groundwater and is expected to remove most of the more significantly contaminated groundwater. Extracted groundwater will be treated to meet appropriate discharge requirements prior to disposal.

2. In-situ chemical oxidation (ISCO) of the remaining contaminated groundwater using RegenOx or other in-situ chemical oxidation technology after the soil excavations are backfilled with clean fill that meets the requirements of Part 375-6.7(d). RegenOx is an advanced in-situ chemical oxidation technology designed to treat organic contaminants.

3. Application of ISCO to the area of impacted soils located off-site between the northern perimeter of the excavation and "The Place" since it is infeasible to excavate due to the overhead power lines and gas line in the vicinity.

4. Site Management Plan

A site management plan is required, which includes the following:

a. monitoring of the groundwater to assess the performance and effectiveness of the remedy; and
b. evaluation of the potential for soil vapor intrusion for any buildings developed on the site, including a provision for implementing actions recommended to address exposures related to soil vapor intrusion.

5. Imposition of an institutional control in the form of an environmental easement that will:
   a. require compliance with the approved site management plan, and
   b. restrict use of groundwater as a source of potable or process water or irrigation, without necessary water quality treatment.

4.0 EVALUATION OF PROPOSED CHANGES

4.1 Remedial Goals

The goals established in the original ROD for this site were:

- treatment of groundwater such that, to the extent technically feasible, the concentration of contaminants is reduced to within promulgated standards;
- ensure that remedial activities do not increase the potential for the migration of contaminated groundwater by damaging the naturally occurring confining unit; and
- treat soil to prevent the recontamination of groundwater by the leaching of chemicals out of the soil mass.

The remedial goals have been updated/modified as follows:

The goal for the remedial program is to restore the site to pre-disposal conditions to the extent feasible. At a minimum, the remedy shall eliminate or mitigate all significant threats to public health and the environment presented by the contamination identified at the site through the proper application of scientific and engineering principles.

The remedial action objectives for this site are:

<u>Groundwater</u>

RAOs for Public Health Protection

- Prevent ingestion of groundwater with contaminant levels exceeding drinking water standards.
- Prevent contact with, or inhalation of volatiles, from contaminated groundwater.

RAOs for Environmental Protection

- Restore ground water aquifer to pre-disposal/pre-release conditions, to the extent practicable.
- Remove the source of ground or surface water contamination.

<u>Soil</u>

RAOs for Public Health Protection

- Prevent ingestion/direct contact with contaminated soil.

RAOs for Environmental Protection

- Prevent migration of contaminants that would result in groundwater or surface

water contamination.

Soil Vapor

RAOs for Public Health Protection

- Mitigate impacts to public health resulting from existing, or the potential for, soil vapor intrusion into buildings at a site.

4.2 Evaluation Criteria

The criteria used to compare the remedial alternatives are defined in the regulation that directs the remediation of inactive hazardous waste sites in New York State (6 NYCRR Part 375). For each criterion, a brief description is provided. A detailed discussion of the evaluation criteria and comparative analysis is contained in the original Feasibility Study.

The first two evaluation criteria are called threshold criteria and must be satisfied in order for an alternative to be considered for selection.

1. Protection of Public Health and the Environment. This criterion is an overall evaluation of each alternative's ability to protect public health and the environment.

The proposed alternative remedy would satisfy this criterion by removing contaminated soils, restricting the use of contaminated groundwater, implementing appropriate actions to evaluate and address exposures related to soil vapor intrusion and treating the groundwater and therefore the proposed remedy is protective of human health and the environment. The need to manage future exposures to on-site VOC impacted soil would be removed by implementing this proposed remedy. The remedial activities completed thus far have not yet achieved this goal. .

2. Compliance with New York State Standards, Criteria, and Guidance (SCGs). Compliance with SCGs addresses whether a remedy will meet environmental laws, regulations, and other standards and criteria. In addition, this criterion includes the consideration of guidance which the Department has determined to be applicable on a case-specific basis.

The proposed alternative remedy is expected to meet SCGs throughout most of the site by soil excavation and treatment of groundwater by ISCO and off-site discharge of treated groundwater collected during the dewatering process, and the implementation of appropriate actions to evaluate and address exposures related to soil vapor intrusion. The remedial activities completed thus far have not yet achieved this goal.

Specifically, the proposed alternative remedy would comply with the following key SCGs:

- 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives for the lower of the protection of groundwater or residential use objectives
- Ambient Water Quality Standards and Guidance Values (TOGs 1.1.1), 6 NYCRR Part 703, Surface water and Groundwater Quality Standards, and Part 5 of the New York State Sanitary Code (10 NYCRR Part 5)
- "Guidance for evaluating Soil Vapor Intrusion in the State of New York," dated October 2006.

The next five "primary balancing criteria" are used to compare the positive and negative aspects of each of the remedial strategies However since the originally selected remedy has not met the

threshold criteria no further comparison will be made but the proposed alternatives ability to meet each will be assessed.

3. Short-term Effectiveness. The potential short-term adverse impacts of the remedial action upon the community, the workers, and the environment during the construction and/or implementation are evaluated. The length of time needed to achieve the remedial objectives is also estimated and compared against the other alternatives.

The proposed alternative remedy involves intrusive work which could cause releases of contamination and exposure during soil excavation and transportation of soils for disposal. The implementation of a Health and Safety Plan and a Community Air Monitoring Plan at the site would limit the potential for exposure through engineering controls, monitoring, and personal protective equipments. Trucks hauling soils for off-site disposal would be secured via tarping prior to exiting the site to prevent release of contamination.

4. Long-term Effectiveness and Permanence. This criterion evaluates the long-term effectiveness of the remedial alternatives after implementation. If wastes or treated residuals remain on-site after the selected remedy has been implemented, the following items are evaluated: 1) the magnitude of the remaining risks, 2) the adequacy of the engineering and/or institutional controls intended to limit the risk, and 3) the reliability of these controls.

The proposed alternative remedy provides long-term effectiveness through the permanent removal of contaminated soil, the restriction on the use of contaminated groundwater, the implementation of appropriate actions to evaluate and address exposures related to soil vapor intrusion and the treatment of residual contaminated groundwater. This alternative remedy is considered to be a preferred and reliable and permanent approach for the remediation of soil and groundwater, and consequently soil vapor.

5. Reduction of Toxicity, Mobility or Volume. Preference is given to alternatives that permanently and significantly reduce the toxicity, mobility or volume of the wastes at the site.

The soil excavation would reduce the toxicity, mobility, and volume of soil exceeding the SCOs at the site. Dewatering and treatment of groundwater during soil excavation and in situ chemical oxidation of contaminated groundwater after soil excavations are backfilled would also reduce the toxicity, mobility and volume of groundwater. The proposed alternative will achieve better destruction or breakdown of contaminants into non-toxic products than a groundwater pump and treat system.

6. Implementability. The technical feasibility and administrative feasibility of implementing each alternative are evaluated. Technical feasibility includes the difficulties associated with the construction of the remedy and the ability to monitor its effectiveness. For administrative feasibility, the availability of the necessary personnel and materials is evaluated along with potential difficulties in obtaining specific operating approvals, access for construction, institutional controls, and so forth.

This alternative remedy can be implemented within a reasonable timeframe with standard methods. However, there is a potential to expand the proposed size of the excavation based upon post-excavation confirmatory sample results or subsurface findings encountered in the excavation area. The volume of groundwater removed and treated during the dewatering operation can vary.

7. Cost-Effectiveness. Capital costs and annual operation, maintenance, and monitoring costs are estimated for each alternative and compared on a present worth basis. Although cost-effectiveness is the

last balancing criterion evaluated, where two or more alternatives have met the requirements of the other criteria, it can be used as the basis for the final decision.

The proposed alternative is a presumptive remedy which by definition is cost effective unless there are extenuating site-specific factors. The cost of this alternative could increase if the areal extent or depth of excavation increases or if there is an increase in the volume of water removed and treated during the dewatering operation.

This final criterion is considered a modifying criterion and is considered after evaluating those above. It is focused upon after public comments on the proposed ROD amendment have been received.

8. Community Acceptance. Concerns of the community regarding the proposed changes are evaluated. A responsiveness summary will be prepared that describes public comments received and the manner in which the Department will address the concerns raised. If the final remedy differs significantly from the proposed remedy, notices to the public will be issued describing the differences and reasons for the changes.

5.0 SUMMARY OF PROPOSED CHANGES

The Department is proposing to amend the ROD for the Powers Chemco Site. The proposed, amended remedial elements are listed below.

The estimated present worth cost to carry out the amended remedy is $5,504,900. The estimated present worth to complete the original remedy was $4,000,000. The cost to construct the amended remedy is estimated to be $5,084,000 and the estimated average annual cost for three years is $160,400.

The elements of the proposed amended remedy are as follows:

1. A remedial design program to verify the components of the conceptual design and provide the details necessary for the construction, operation and maintenance, and monitoring of the remedial program. Green remediation principles and techniques will be implemented to the extent feasible in the design, implementation, and site management of the remedy as per DER-31. The major green remediation components are as follows:
    - Considering the environmental impacts of treatment technologies and remedy stewardship over the long term;
    - Reducing direct and indirect greenhouse gas and other emissions;
    - Increasing energy efficiency and minimizing use of non-renewable energy;
    - Conserving and efficiently managing resources and materials;
    - Reducing waste, increasing recycling and increasing reuse of materials which would otherwise be considered a waste;
    - Maximizing habitat value and creating habitat when possible;
    - Fostering green and healthy communities and working landscapes which balance ecological, economic and social goals; and
    - Integrating the remedy with the end use where possible and encouraging green and sustainable re-development.

2. Excavation and off-site disposal of contaminated subsurface soils exceeding the lower of the

Department's protection of groundwater soil cleanup objectives (SCOs) or residential use SCOs. Excavations will be backfilled with clean fill. The first five feet of soil below grade will be excavated and will be tested for reuse as backfill. The remaining soil will be excavated for off-site disposal. It is estimated that approximately 21,000 tons of soil will be excavated, of which 5,000 tons from the upper 5 feet may be re-used as backfill. Construction water removed to facilitate excavation will be treated to meet effluent requirements prior to disposal.

3. In-situ chemical oxidation (ISCO) of residual contaminated groundwater remaining after excavations are backfilled with clean fill. ISCO is a technology used to treat volatile organic compounds in the soil and groundwater. The process injects a chemical oxidant into the subsurface via injection wells or an infiltration gallery. The method of injection and depth of injection is determined by location of the contamination. As the chemical oxidant comes into contact with the contaminant, an oxidation reaction occurs that breaks down the contaminant into relatively benign compounds such as carbon dioxide and water. An oxidant such as RegenOx or equivalent chemical oxidant will be used.

4. Application of RegenOx or equivalent chemical oxidant to residual, impacted off-site soil and groundwater, where excavation is not feasible due to presence overhead power lines and gas lines in the vicinity of the north side boundary.

5. A site cover currently exists and will be maintained to allow for commercial use of the site. Any site redevelopment will maintain a site cover, which may consist either of the structures such as buildings, pavement, sidewalks comprising the site development or a soil cover in areas where the upper one foot of exposed surface soil will exceed the applicable soil cleanup objectives (SCOs). Where a soil cover is required it will be a minimum of one foot of soil, meeting the SCOs for cover material as set forth in 6 NYCRR Part 375-6.7(d) for commercial use. The soil cover will be placed over a demarcation layer, with the upper six inches of the soil of sufficient quality to maintain a vegetation layer. Any fill material brought to the site will meet the requirements for the identified site use as set forth in 6 NYCRR Part 375-6.7(d).

6. Imposition of an institutional control in the form of an environmental easement for the controlled property that:
    - requires the remedial party or site owner to complete and submit to the Department a periodic certification of institutional and engineering controls in accordance with Part 375-1.8 (h)(3);
    - allows the use and development of the controlled property for commercial and industrial uses as defined by Part 375-1.8(g), although land use is subject to local zoning laws;
    - restricts the use of groundwater as a source of potable or process water, without necessary water quality treatment as determined by the NYSDOH or County DOH; and
    - requires compliance with the Department-approved Site Management Plan.

7. A Site Management Plan is required, which includes the following:
    - an Institutional and Engineering Control Plan that identifies all use restrictions and engineering controls for the site and details the steps and media-specific requirements necessary to ensure the following institutional controls remain in place and effective:

    Institutional Controls: The Environmental Easement discussed above.
    Engineering Controls: The cover system and monitoring network discussed herein.

This plan includes, but may not be limited to:

- descriptions of the provisions of the environmental easement including any land use and groundwater use restrictions;
- a provision for evaluation of the potential for soil vapor intrusion for any buildings developed on the site, including a provision for implementing actions recommended to address exposures related to soil vapor intrusion;
- provisions for the management and inspection of the identified engineering controls;
- maintaining site access controls and Department notification;
- the steps necessary for the periodic reviews and certification of the institutional and/or engineering controls;
- a monitoring plan to assess the performance and effectiveness of the remedy. The plan includes, but may not be limited to:
    - installation of new monitoring wells in the backfilled excavation area;
    - monitoring of groundwater to assess the baseline sampling and performance and effectiveness of the remedy;
    - monitoring for soil vapor intrusion for any buildings developed on the site, as may be required by the Institutional and Engineering Control Plan discussed above; and
    - a schedule of monitoring and frequency of submittals to the Department.

6.0 NEXT STEPS

As described above, there will be a public meeting and comment period on the proposed changes to the selected remedy. At the close of the comment period, the Department will evaluate the comments received and prepare a responsiveness summary which will be made available to the public. A notice describing the Department's final decision will be sent to all persons on the site mailing list.

If you have questions or need additional information you may contact any of the following:

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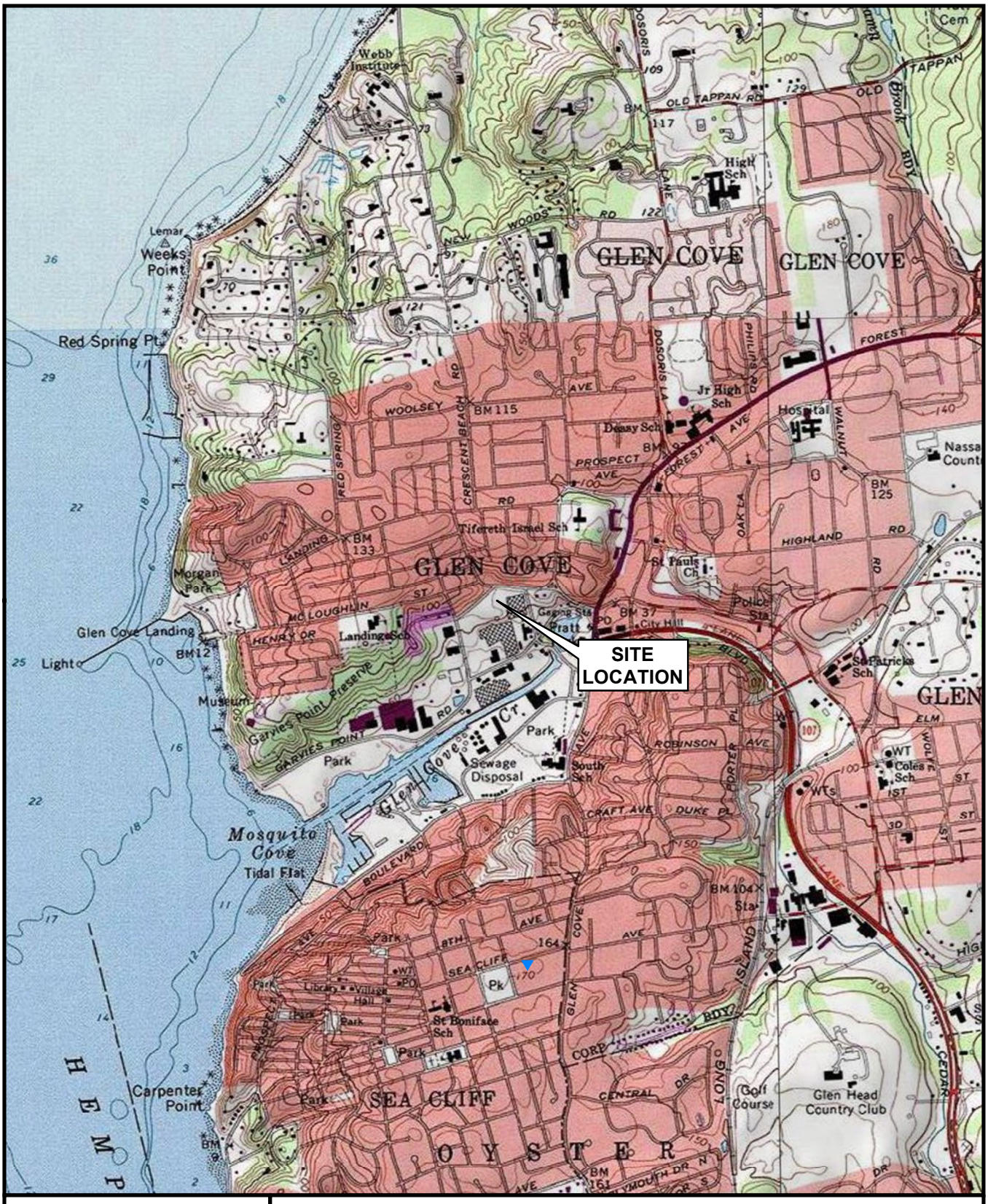


Figure 1

Site Location Map

Powers Chemco

City of Glen Cove, Nassau County

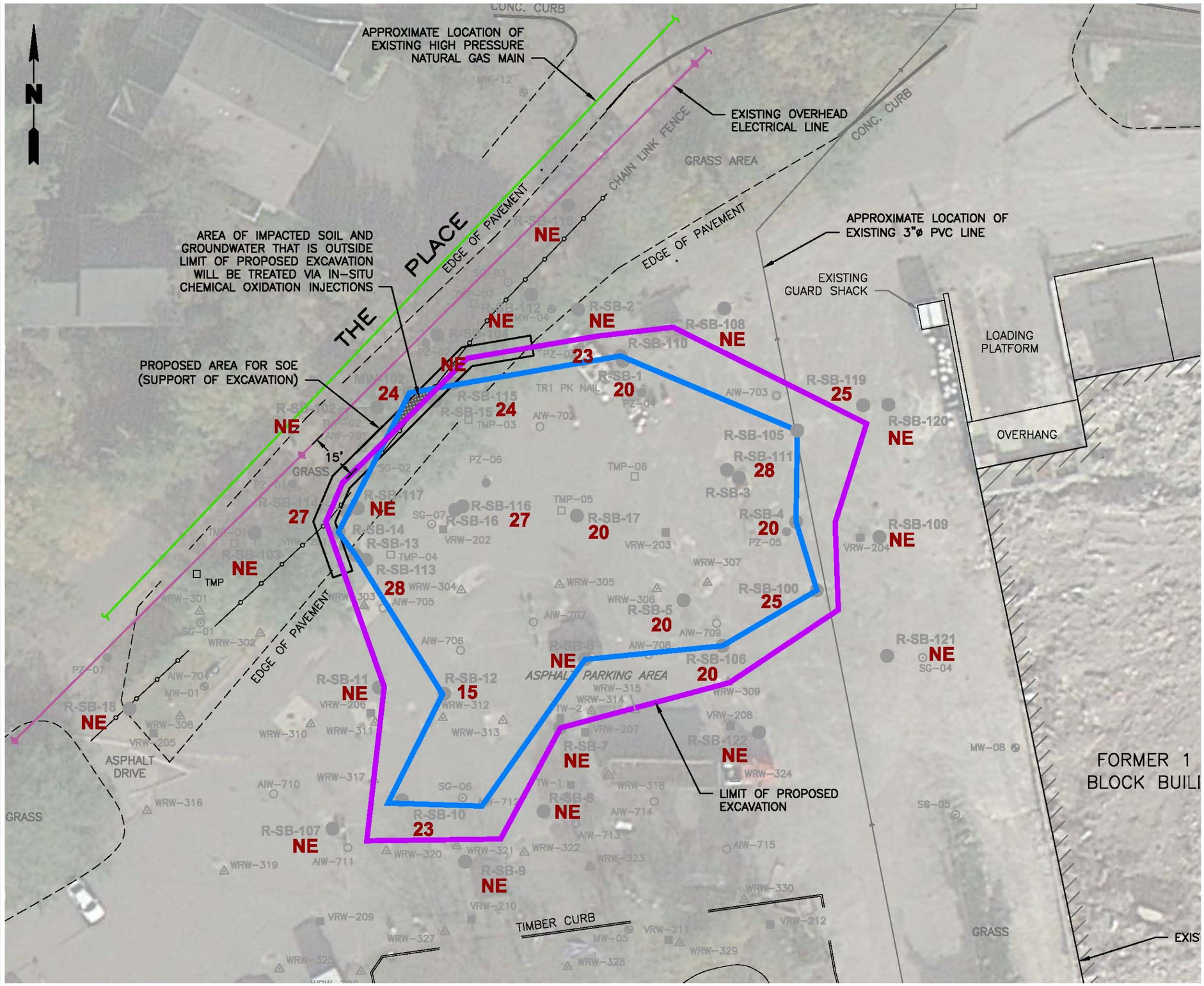
Site No. 130028

DEPARTMENT OF ENVIRONMENTAL CONSERVATION • NEW YORK STATE •

Figure 2
Site Map

Powers Chemco
Ciy of Glen Cove, Nassau County
Site No. 130028

DEPARTMENT OF ENVIRONMENTAL CONSERVATION • NEW YORK STATE •



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LEGEND

R-SB-1 ●	SOIL BORING LOCATION AND DESIGNATION (REMEDIAL INVESTIGATION)
R-SB-103 ●	SOIL BORING LOCATION AND DESIGNATION (REMEDIAL INVESTIGATION AMENDMENT)
R-SB-109 ●	SOIL BORING AND GROUNDWATER SCREENING SAMPLE LOCATION AND DESIGNATION (REMEDIAL INVESTIGATION AMENDMENT)
⊕	MONITORING WELL
●	PIEZOMETER
○	PASSIVE AIR INJECTION WELL – REMNANT FROM PREVIOUS REMEDIAL ACTIVITIES. TO BE REMOVED.
⊙	SOIL GAS SAMPLING POINT
■	VAPOR RECOVERY WELL – REMNANT FROM PREVIOUS REMEDIAL ACTIVITIES. TO BE REMOVED.
△	WATER RECOVERY WELL – REMNANT FROM PREVIOUS REMEDIAL ACTIVITIES. TO BE REMOVED.
□	TEMPORARY SOIL AND GROUNDWATER SAMPLING POINT
———	CONCEPTUAL AREA OF KNOWN IMPACTS TO SOIL AND GROUNDWATER
———	PROPOSED LIMIT OF EXCAVATION OF GROUNDWATER SOURCE AREA
20	APPROXIMATE DEPTH (FEET BELOW GRADE) OF TOP OF CLEAN ZONE BENEATH GROUNDWATER SOURCE AREA
NE	NO EXCEEDANCES OF PART 375 IMPACT TO GROUNDWATER CRITERIA

NOTES

1. ELECTRICAL POWER AVAILABLE AT TREATMENT BUILDING.
2. PROPOSED SOIL STAGING AREA LOCATED ON EXISTING CONCRETE SLAB REMAINING FROM BUILDING DEMOLITION ACTIVITIES. THE SOIL STAGING AREA IS APPROXIMATELY 9 FEET BELOW GRADE OF PROPOSED EXCAVATION AREA.
3. THE 3"ø PVC LINE WAS USED TO SEND TREATED GROUNDWATER TO THE CITY OF GLEN COVE STORM SEWER SYSTEM.
4. THIS PROPERTY DESIGNATED SECTION 31, BLOCK "G" ON THE LAND AND TAX MAP OF THE COUNTY OF NASSAU.
5. ABSTRACT OF TITLE AND EASEMENTS FOR SUBJECT PARCEL AND ADJOINING PARCELS NOT PROVIDED FOR THE PREPARATION OF THIS SURVEY. ABSENCE OF EASEMENTS DOES NOT DENY THE EXISTENCE OF SAME.

30' 0 30'

Title:

DEPTHS TO CLEAN ZONE AND CONCEPTUAL LIMITS OF PROPOSED EXCAVATION

Powers Chemco, 130028
ROD Amendment
Figure 3

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