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**REMEDIAL DESIGN WORK PLAN  
LCP BRIDGE STREET  
OPERABLE UNIT 2**

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*Prepared For:*

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**MAY 2011**

**CERTIFICATION STATEMENT****REMEDIAL DESIGN WORK PLAN  
LCP OU-2  
SYRACUSE, NEW YORK**

I Dave Babcock certify that I am currently a NYS registered professional engineer and that this Remedial Design Work Plan was prepared in accordance with all applicable statutes and regulations and in substantial conformance with the DER Technical Guidance for Site Investigation and Remediation (DER-10).

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**LIST OF ACRONYMS**

CAMP	Community Air Monitoring Plan
CPOI	Chemical Parameter of Interest
cy	cubic yards
EAQ	2-ethyl anthraquinone
FS	Feasibility Study
LCP	Linden Chemicals and Plastics
LNAPL	Light Non-Aqueous Phase Liquid
NYSDEC	New York State Department of Environmental Conservation
OU	operable unit
ppb	parts per billion
ppm	parts per million
RDWP	Remedial Design Work Plan
RI	Remedial Investigation
ROD	Record of Decision
SVOC	semi-volatile organic compound
USEPA	United States Environmental Protection Agency
VOC	volatile organic compound

## **EXECUTIVE SUMMARY**

Honeywell continues its progress toward achieving the goals of the Record of Decision (ROD) with the development of this Remedial Design Work Plan (RDWP) for Operable Unit No. 2 (OU-2) of the former Linden Chemicals and Plastics (LCP) Bridge Street site (hereafter called the LCP OU-2 site). The remedy for LCP OU-2, which was selected by the New York State Department of Environmental Conservation (NYSDEC), calls for a combination of *in situ* chemical oxidation and soil removals. The overall goal for remedial design and construction is to achieve the remediation goals developed in the LCP OU-2 Feasibility Study (FS) (Parsons, 2009a) and set forth in the ROD (NYSDEC, 2010b). The goals of the remedy are to mitigate significant threats to the public health and/or the environment.

This RDWP presents activities and sequencing to complete remedial design of the selected remedy.

NYSDEC and Honeywell have agreed to conditions under which Honeywell will design and implement the selected remedy, as set forth in the Order on Consent (Index #D7-0001-01-03). The selected remedy is described in the record of decision (ROD) for OU-2 (NYSDEC, 2010b) and includes:

- *In situ* chemical oxidation for on-site subsurface soils and groundwater
- Supplemental chemical oxidation treatment of vadose zone soils
- Placement of a 12-inch soil cover on-site
- Soil excavations on the NAKOH property
- Establishment of an environmental easement with periodic certification

Honeywell has conducted pre-design activities to support design of the selected remedy including the data collected during the remedial investigation (Parsons, 2004). Pre-design activities completed for OU-2 have included site investigation efforts, an evaluation of remedial alternatives, and two pilot studies.

The remedial design for LCP OU-2 will consist of two separate submittals. The first submittal will be a Removal Work Plan, which will provide details pertaining to the soil removal activities that will take place on the NAKOH property. The second will be a remedial design submittal, which will provide engineering design details for remedial action to be taken on LCP OU-2, including *in situ* chemical oxidation of saturated soils in OU-2, and supplemental treatment of unsaturated soils.

Honeywell has retained professional consultants to perform the technical, engineering aspects of the remedial design, including preparing the design submittals. NYSDEC will review and approve plans, drawings, reports, and schedules submitted for the remedial design, and remedial action. Honeywell will distribute documents approved or accepted by NYSDEC to the

five public document repositories designated for this project, which are located in Syracuse, New York, and the surrounding vicinity.

Honeywell is committed to informing and involving the public throughout the LCP OU-2 remedial program. NYSDEC will prepare a Citizen Participation Plan that provides a formal yet flexible plan for communication with the public during the remediation program. The Citizen Participation Plan will be shared with the public before being finalized. The final document will be in place before remedial construction begins at the site.

## **SECTION 1**

### **INTRODUCTION**

This RDWP has been prepared on behalf of Honeywell International Inc. (Honeywell) and presents the process to design the remedy for OU-2 of the former LCP Bridge Street site (the Site) shown on Figure 1-1. Honeywell entered into an Order on Consent (Index #D7-0001-01-03) with the NYSDEC to implement the selected remedy for the site as outlined in the ROD issued by the NYSDEC in March, 2010. The Order on Consent requires that this RDWP include the elements listed below:

- Summary of completed and planned pre-design activities
- Description of the remedial design, including remedial goals, and the means for implementing each element of the remedy to achieve those goals
- Schedule for submitting remedial design documents

This RDWP has been developed consistent with applicable federal and state guidance documents for remedial design for hazardous waste sites (NYSDEC, 2010a; USEPA, 1995a; USEPA, 1995b; and USEPA, 2005).

#### **1.1 SITE DESCRIPTION**

The LCP site is located two miles northwest of the City of Syracuse, New York, in Onondaga County in the Town of Geddes. It is just outside the Village of Solvay and south of the New York State Fairgrounds.

The site consists of two operable units. Operable Unit Number 1 (OU-1) comprises the majority of the former industrial site. The NYSDEC prepared a ROD for OU-1 in 2000, and the remedial action began in October 2004 and concluded in August 2007. The completion report for the OU-1 remedial action has been finalized and submitted to NYSDEC for review (Parsons, 2009b).

LCP OU-2 consists of a 1.7-acre area where a former hydrogen peroxide plant was located (see Figure 1-1). OU-2 is currently vacant, and a 6-ft. chain-link fence is present on the north and east sides of OU-2. The West Flume is south of OU-2 and part of OU-1. The NAKOH Chemical property adjoins the eastern side of OU-2. Former operations at OU-2 have impacted soils and groundwater at portions of the NAKOH Chemical property. The ROD applies to both the OU-2 site and the NAKOH Chemical property. To the west is an area designated as the Mud Brine Area, which was remediated as part of the OU-1 remedy.

As part of the OU-1 remediation, the following remedial actions were taken at OU-2:

- Portions of the upper 1 to 3 ft. of soil (approximately 6,200 cubic yards [cy]) were excavated from LCP OU-2 from late 2004 through June 2005. The original excavation plan was to include the upper 3 ft. of soils at OU-2, however, some sections of the site

were found to contain non-aqueous phase liquid (LNAPL) less dense than water. Consistent with discussions with NYSDEC, these materials were not excavated. Accordingly, 3 ft. of material was removed over approximately 50 percent (western half) of the site, with a varying 1 to 2 ft. removed from the remaining areas. Following removal, a portion of the excavated material was used to regrade the site to provide drainage. The remaining excavated material was consolidated within the OU-1 containment system. Following regrading, and relocation of the excavated material, the OU-2 site was covered with approximately 6 inches of clean gravel in August 2005.

- Underground sewers and other utilities in OU-2 were removed and placed within the OU-1 containment system. The two building slabs at OU-2 were also removed and placed within the OU-1 containment system; foundations were left in place below former slab locations.

As a result of OU-1 remediation activities, the OU-2 remediation design focuses on subsurface soils and groundwater at OU-2, and on soils and groundwater at the adjoining NAKOH Chemical property. The primary chemical parameters of interest (CPOI) are xylene, ethylbenzene and 2-ethyl anthraquinone (EAQ) which originated from operations at the former peroxide plant.

## **1.2 NATURE AND EXTENT OF CONTAMINATION**

The LCP OU-2 site was the subject of several field investigations for the purposes of delineating extent of contamination. The field activities and findings of the investigation for OU-2 are described in the *Final Remedial Investigation Report for the LCP Bridge Street Site, Operable Unit 2 Report* (Parsons, 2004). The remedial investigation (RI) was conducted between September 2002 and March 2004.

As described in the RI report, many soil, groundwater, surface water and sediment samples were collected to characterize the nature and extent of contamination. The main categories of contaminants that exceed their SCGs are volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), and inorganics (metals). The nature and extent of contamination on the LCP OU-2 and NAKOH sites as provided in greater detail in the RI Report and the ROD, are summarized below.

### **Surface Soil**

Former surface soils at OU-2 were removed as part of the OU-1 remedy. The depth of soil removed as part of the OU-1 remedy at OU-2 was between 1 and 3 ft. The OU-2 area was graded for drainage and covered with 6 inches of clean gravel. Therefore, no further characterization was required for surface soils.

Surface soils on the NAKOH Chemical property, were shown to contain site related residual mercury at concentrations from 0.06 to 1.9 parts per million (ppm).

### **Subsurface Soil**

Subsurface soils at OU-2 and along the west edge of the NAKOH Chemical property are affected primarily with xylene and ethylbenzene with concentrations up to 7,540 ppm and 880 ppm, respectively. These two VOCs were detected above NYSDEC Part 375 soil cleanup objectives for unrestricted use as deep as 20 to 25 ft. below ground surface. In addition, 2-EAQ was detected in soil samples at the site at concentrations up to 1,200 ppm. PAHs, including benzo(a)anthracene and dibenz(a,h)anthracene have been detected in subsurface soil at OU-2 at total concentrations up to 1,090 ppm. Metals were found in soil samples, including mercury at concentrations ranging from 0.01 – 14 ppm.

Subsurface soils at the NAKOH Chemical property are less contaminated than subsurface soils at OU-2. Xylene and ethylbenzene was found at concentrations up to 19 and 1.5 ppm respectively. Mercury was found in concentrations up to 7.7 ppm.

### **Groundwater**

Shallow groundwater from OU-2 and the NAKOH Chemical property discharges to the West Flume. Xylene and ethylbenzene are the only VOCs observed in groundwater at OU-2 and the NAKOH Chemical property above New York State Class GA groundwater quality standards (5 parts per billion [ppb]). Other chemicals in groundwater above state groundwater quality standards are phenol-related semi-volatile compounds and, to a lesser extent, metals.

Deep groundwater does not appear to be affected, with the exception of xylene at 13 ppb observed at one location.

### **Surface Water**

Surface water contamination identified during the RI/FS was addressed during the implementation of the OU-1 remedy. The primary source of surface water contaminants in the West Flume was remediated through the removal of the sediment in the West Flume (see “Sediments” below).

### **Sediments**

Sediment contamination identified during the RI/FS was addressed during the implementation of the OU-1 remedy. Sediment in the West Flume, adjacent to and south of the site, was excavated and consolidated at the OU-1 site. Clean fill and topsoil were placed to restore the West Flume back up to pre-excavation grade, and the flume was restored through plantings and seeding.

## **1.3 REMEDIATION OBJECTIVES AND GOALS**

Goals for the remedial program have been established through the remedy selection process stated in 6 NYCRR Part 375. The remediation goals for this site presented by the ROD are to eliminate or reduce to the extent practicable:

- Exposures of persons at or around the site to VOCs, SVOCs, and metals in soil

- Exposures of persons at or around the site to VOCs, SVOCs, and metals in groundwater
- Environmental exposures of flora or fauna to VOCs, SVOCs, and metals in soil
- The release of contaminants from soil into groundwater that may create exceedances of groundwater quality standards

Further, the remediation goals for the site including attaining to the extent practicable:

- Ambient groundwater quality objectives based on the NYSDEC “Ambient Water Quality Standards and Guidance Values” ([http://www.dec.ny.gov/docs/water\\_pdf/togs111.pdf](http://www.dec.ny.gov/docs/water_pdf/togs111.pdf))
- Soil quality objectives meeting 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives (<http://www.dec.ny.gov/regs/15507.html>)

#### **1.4 REMEDY OF RECORD**

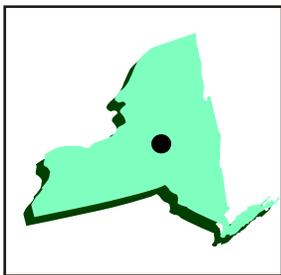
The ROD for the site presents the remedy selected by NYSDEC and the United States Environmental Protection Agency (USEPA) for addressing the RAOs and PRGs presented in Section 1.2 above.

Major components of the selected remedy, set forth in the ROD, are summarized as follows:

1. A remedial design program would be implemented to provide the details necessary for the construction, operation, maintenance, and monitoring of the remedial program.
2. Chemical oxidant(s) and catalyst(s) would be injected into the subsurface to address site remedial action objectives. In addition to the injection of chemical oxidants below the water table, supplemental chemical oxidation treatment of vadose zone soils would be conducted (e.g., direct application of chemical oxidants to the surface soil and/or land farming). Emission and/or odor controls would be implemented as required during remedy construction. Monitoring would be required to ensure that adverse effects to the aquifer or the West Flume would not occur during remediation. Monitoring would also be employed throughout the remedial action to assess the performance and demonstrate the effectiveness of the remedy. In addition, the *in situ* chemical oxidation technology would be extended onto the NAKOH Chemical property to address the NMW-2 (northwest) area.
3. Construction of a soil cover over the site to prevent exposure to contaminated soils. The 1-ft. thick cover would consist of clean soil or crushed stone underlain by a demarcation layer to delineate the cover soil from the subsurface soil. Clean soil is soil that is tested and meets the Division of Environmental Remediation’s criteria for backfill or local site background. A cover would also prevent migration, via storm water runoff, of any remaining site contaminants from entering the West Flume.
4. Imposition of an institutional control in the form of an environmental easement that would require (a) limiting the use and development of the property to commercial use, which would also permit industrial use; (b) compliance with the approved Site Management Plan; (c) restricting the use of groundwater as a source of potable or

process water, without necessary water quality treatment as determined by NYSDOH; and (d) Honeywell to complete and submit to the Department a periodic certification of institutional and engineering controls.

5. Development of a Site Management Plan which would include the following institutional and engineering controls: (a) management of the final cover system to restrict excavation below the soil covers demarcation layer. Excavated soil would be tested, properly handled to protect the health and safety of workers and the nearby community, and would be properly managed in a manner acceptable to the Department; (b) continued evaluation of the potential for vapor intrusion for any buildings developed on the site, including provision for mitigation of any impacts identified; (c) monitoring of groundwater; (d) identification of any use restrictions on the site; (e) fencing or other means to control site access; and (f) provisions for the continued proper operation and maintenance of the components of the remedy.
6. For remediation of the off-site NAKOH Chemical property, soil would be excavated to the commercial soil cleanup objective for mercury (2.8 parts per million). Soil would be consolidated at the LCP OU No. 1 Site, within the cap and slurry wall system. Clean soil would replace the excavated soil. The NAKOH Chemical property is currently zoned industrial, and the reasonable anticipated future land use for the property and its surroundings is industrial or commercial.
7. Honeywell would provide a periodic certification of institutional and engineering controls, prepared and submitted by a professional engineer or such other expert acceptable to the Department, until the Department notifies the property owner in writing that this certification is no longer needed. This submittal would: (a) contain certification that the institutional controls and engineering controls put in place are still in place and are either unchanged from the previous certification or are compliant with Department-approved modifications; (b) allow the Department access to the site; and (c) state that nothing has occurred that would impair the ability of the control to protect public health or the environment, or constitute a violation or failure to comply with the Site Management Plan unless otherwise approved by the Department.
8. The operation of the components of the remedy would continue until the remedial objectives have been achieved, or until the Department determines that continued operation is technically impracticable or not feasible.
9. Since the remedy results in untreated hazardous waste remaining at the site, a long-term monitoring program would be instituted. Inspection and, if necessary, repair of the cover would be conducted to ensure the cover prevents human contact with subsurface soils. This program would allow the effectiveness of the cover to be monitored and would be a component of the long-term management for the site.



New York  
Syracuse West Quadrangle

LATITUDE: N40° 42' 51"  
LONGITUDE: W74° 06' 07"



FIGURE 1-1

**Honeywell**

TOWN OF GEDDES,  
NEW YORK

LCP BRIDGE STREET OU-2

**SITE LOCATION MAP**

**PARSONS**

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## **SECTION 2**

### **PRE-DESIGN ACTIVITIES**

This section provides a summary of pre-design activities conducted to date and planned to support the design of the selected remedy for the site. Referenced documents are available at the public repositories listed in Section 4.3.

#### **2.1 PILOT TESTING**

As part of the FS that was completed for the site, chemical oxidation pilot studies were performed on behalf of Honeywell at the LCP OU-2 site between 2005 and 2007 to further assess remedial technologies that were being considered for the site.

The first pilot study was completed in August 2005 by ERFs and involved both propagation testing and chemical oxidation bench-scale oxidant screening tests. The second pilot test took place between October 2006 and March 2007, and was completed by In-Situ Oxidative Technologies, Inc. (ISOTEC). For the *in situ* injection process, ISOTEC used stabilized hydrogen peroxide (Fenton's Reagent) and a complexed iron catalyst at a neutral pH to treat both the saturated and vadose zones in a small targeted area of the site. This reagent was used because it was shown to be effective in the treatment of CPOIs on-site in bench scale testing. In addition, pulse-bio SVE system was tested for the treatment of vadose zone soils. Summary reports from these pilot studies are included with the FS Report (Parsons, 2009a). Data gathered during the tests will support the remedial design.

#### **2.2 PRE-DESIGN INVESTIGATIONS (UNDERWAY OR FUTURE)**

The investigations described in Sections 1.2 and 2.1 are anticipated to be sufficient to complete the design for the site. Additional groundwater monitoring may be conducted prior to initiation of chemical oxidation to characterize baseline conditions. If data gaps are identified during the design, they will be addressed in a future pre-design investigation.

#### **2.3 CULTURAL RESOURCES**

The New York Archeology Council has developed a step-wise process for assessing cultural resources within a project area. The process is based on the standard practices of archeology and is designed to identify potential cultural resources prior to construction that could impact historic sites. Honeywell has completed the cultural assessment process for both LCP OU-1 and OU-2. The Phase 1A evaluation which used an assessment methodology including a detailed literature review of prehistory and history references for the region recommended that the site go through a Phase 1B study which was completed and summarized in a February 2004 report (Parsons, 2004). The Phase 1B study is a field work study that explores the site for potential historic/pre-contact resources. The report recommended that no further cultural assessment work was needed as there were no findings of historical or pre-contact importance were found during the field work on the site.

## **SECTION 3**

### **REMEDIAL DESIGN PROCESS**

This section describes how the elements of the remedy of record will be segmented into separate design elements, presents the deliverables planned for each element and overall schedule.

#### **3.1 PRIMARY DESIGN ELEMENTS**

The design will focus on the following remedy components that have been outlined in the ROD:

- NAKOH soil removal: Soils at the NAKOH property that exceed the Part 375 commercial soil use cleanup objective (2.8 ppm for mercury) will be removed and consolidated within the LCP OU-1 containment cell.
- *In Situ* Chemical Oxidation (Saturated soils): Remediation on-site will be addressed using *in situ* chemical oxidation. Stabilized hydrogen peroxide (Fenton's reagent) will be injected into the subsurface to oxidize contaminants.
- Supplemental Vadose Zone Soil Treatment: Supplemental soil treatment is necessary to address volatile and semi-volatile contaminants in the vadose zone.

The scope of the remedy as required by the ROD will be broken into two design tracks corresponding to the two different sites included in the remedy: the LCP OU-2 property; and the NAKOH property. The remedial design work is described below.

#### **3.2 NAKOH SOIL REMOVAL**

The remedial action for the NAKOH property will include the removal of approximately 2,000 cy of contaminated soils with concentrations of mercury above the commercial soil cleanup objective (2.8 ppm), on-site consolidation inside the barrier wall at OU-1, and restoration of the excavated area including replacement of asphalt paving.

Design components that will be developed for this activity will include plans describing soil removal limits, restoration details, and details pertaining to support activities that will be required to complete the soil removal (e.g., erosion control to mitigate off-site migration of contamination). These design elements will be included in a NAKOH Soil Removal Work Plan which will be submitted to NYSDEC for review and approval. The schedule for submittal of this work plan, and completion of this removal activity, are provided in Section 3.6 below.

### **3.3 LCP OU-2 REMEDIAL ACTIVITIES**

The remedial action for the LCP OU-2 site will include the injection of chemical oxidant(s) and catalyst(s) into the subsurface to oxidize organic chemicals present in the subsurface, and the treatment of vadose zone soils to address site remedial action objectives. The method for treatment of the vadose zone soils will be developed as part of the remedial design. Following treatment of soils, a 1 ft. soil cover will be placed over the site.

Design components that will be developed for the chemical oxidation portion of the remedy will primarily consist of an oxidant/catalyst delivery plan, which will describe the spacing of injection points, injection depths, flowrates, selection of oxidants and catalysts, and injection frequency. In addition, a sampling plan to gauge progress by the oxidation process will be included, which will be used to scope subsequent injection events. It is anticipated that this design will be completed with input from the remedial contractor selected to complete the work.

Design components that will be developed for the supplemental vadose zone soil treatment will include documentation on the method of treatment and design details. It is anticipated that this design will be completed with input from the remedial contractor selected to complete the work.

These design components will be included in a single LCP OU-2 Design Submittal which will be submitted to NYSDEC for review and approval. The schedule for submittal of this document and completion of this removal activity are provided in Section 3.6 below.

### **3.4 REMEDIATION SUPPORT ACTIVITIES**

#### **3.4.1 Site Preparation**

Temporary facilities, such as trailers, utilities, site access roads, decontamination pad(s), and staging areas may be required to implement the remediation. The location of these facilities will be identified as needed in the NAKOH Soil Removal Work Plan and in the design submittal.

Active utility lines will need to be terminated, re-routed, or protected during the remediation at the NAKOH chemical property and at LCP OU-2. Known utilities and measures that will be implemented to protect them during remedial activities will be presented in the Removal Work Plan and in the LCP OU-2 Design Submittal.

OU-2 and the NAKOH chemical property will be cleared of vegetation as necessary, though existing vegetation on these sites is sparse. No stripping and re-use of topsoil within the remedial limits is planned. Equipment and debris present on the NAKOH chemical property will be removed by the property owner prior to initiation of that portion of the remedy.

#### **3.4.2 Storm Water, Erosion, and Sediment Control**

Storm water, erosion, and sediment controls to be used during construction will be identified in the Removal Work Plan and in the LCP OU-2 Design Submittal. Storm water, erosion, and sediment control is anticipated to consist of silt fencing and similar elements to prevent significant soil or sediment erosion from the site. In general, the most recent version of the *NY*

*Standards and Specifications for Erosion and Sediment Control* will be used as guidance for developing storm water, erosion, and sediment control elements during the remedial action.

### **3.4.3 Air Monitoring and Controls**

A site-specific Community Air Monitoring Plan (CAMP) will be included in the Removal Work Plan and in the LCP OU-2 Design Submittal. The plan will specify monitoring procedures, action levels, and contingency measures.

## **3.5 SITE MANAGEMENT PLAN**

A Site Management Plan will be prepared as part of the LCP OU-2 Design Submittal. The Site Management Plan will outline procedures for the long-term management of the site following completion of the remedial activities. Activities that will be described in this Site Management Plan will include:

- Implementation of an environmental easement that will be applied to the site
- Periodic inspections and management of the final cover system to be installed on-site
- Monitoring of potential future site development for compliance with site excavation and use restrictions, and vapor intrusion potential
- Maintenance of site access controls (e.g., fencing)
- Monitoring of site groundwater

## **3.6 PERMITS/ACCESS AGREEMENTS**

Honeywell will obtain required permits and access agreements for the completion of the remedial activities specified in the ROD. Honeywell currently has access to the LCP OU-2 site. If ownership of the property changes prior to completion of the remedial activity, Honeywell will negotiate access with the new owners.

The NAKOH property is privately owned by another party. Negotiations with the current property owner will be required to complete the soil removal, and the portion of chemical oxidation that will take place on that property.

## **3.7 SCHEDULE**

Honeywell will make good faith efforts to design and construct the LCP OU-2 remedy in a timely manner. The LCP OU-1 containment area will be opened in early 2011 to support an on-going supplemental removal action at LCP OU-1. The NAKOH removal will be conducted concurrent with this OU-1 removal. To facilitate this schedule, the NAKOH Soil Removal Work Plan is anticipated to be submitted in late spring 2011 (see Table below). Major milestones and associated dates for the remedial activities are presented below.

**DESIGN & CONSTRUCTION MOBILIZATION MILESTONES**

<b><u>NAKOH SOIL REMOVAL</u></b>	
Submit Draft NAKOH Soil Removal Work Plan	6/3/2011
Receive NYSDEC Comments on Removal Work Plan	6/24/2011
Submit Final NAKOH Soil Removal Work Plan	7/8/2011
Receive NYSDEC Approval on Removal Work Plan	7/22/2011
Mobilize to Site to Perform Removal	~ 8/2011*
<b><u>LCP OU-2</u></b>	
Submit LCP OU-2 Design Submittal	10/26/2011
Receive NYSDEC Comments	11/23/2011
Submit LCP Revised Design Submittal	2/21/2012
Receive NYSDEC Approval on LCP Design	3/21/2012
Mobilize to Site to Complete Remedial Activities	~ 5/2012

\* - Providing site owner has moved equipment to permit removal

## SECTION 4

### REMEDIAL DESIGN MANAGEMENT

This section describes the management approach, including project organization, project communication, document management, quality assurance, health and safety, physical security, and citizen participation for the Geddes Brook/Ninemile Creek remedial design.

#### 4.1 REMEDIAL DESIGN ORGANIZATION

Several organizations will be directly involved in the performance and review of the remedial design. This section describes the overall project organization and responsibility of various parties.

##### 4.1.1 New York State Department of Environmental Conservation

The NYSDEC is the lead agency. This state agency will review and approve plans, drawings, reports, and schedules submitted for the pre-design, remedial design, and remedial action as documented in the Consent Decree. Mr. Richard Mustico is NYSDEC's project manager for the LCP OU-2 site.

##### 4.1.2 Honeywell

Honeywell is responsible for the design and implementation of the LCP OU-2 remedy. Mr. John McAuliffe, P.E., is the Honeywell Syracuse Program Director and primary contact for this project. Mr. Al Labuz is the remediation manager for this project. Mr. William Hague is Honeywell's Director for Remediation and Construction for this project. Honeywell has retained Parsons Corporation (Parsons) of Syracuse, New York, to manage and prepare the remedial design for the LCP OU-2 remedy.

##### 4.1.3 Parsons

Parsons is Honeywell's primary consultant for the remedial design. The design organization for the project team is further described below.

###### 4.1.3.1 Program Manager

Mr. Steve Warren is Parsons' program manager for the Honeywell Syracuse Program. Mr. Warren is directly responsible to Honeywell and Parsons' management to ensure that the project objectives and project schedules are met.

###### 4.1.3.2 Project Management

###### Project Manager

Mr. Tom Drachenberg, P.E. will serve as the project manager for the remedial design. The project manager will perform the functions listed below:

- Provide overall direction and management for remedial design activities

- Perform administrative and decision-making activities, as well as provide necessary authorizations within Parsons related to the project
- Facilitate remedial design coordination between Parsons and external organizations
- Review all reports in the draft version prior to their final edition
- Communicate with NYSDEC and other agencies on an ongoing basis regarding technical issues and project status

### **Project Engineer**

Mr. David Babcock, P.E. will serve as project engineer for the remedial design. The project engineer will perform the functions listed below:

- Engineer-responsible-in-charge for the design
- Direct and coordinate the technical components of the project
- Integrate the individual project components into a functional system
- Manage remedial design coordination between the technical discipline leads
- Supervise preparation of calculations, design drawings, and specifications
- Seal the Final Design Submittal and other cover sheets after coordinating the sealing of individual components by the discipline leads

### **4.1.3.3 Remedial Design and Construction Manager**

Mr. Stephen Miller, P.E., will act as Honeywell's liaison serving as the remedial design and construction manager. Mr. Miller is responsible for the consistency and quality of remedial design and construction documents.

### **4.1.3.4 Project Control Specialist**

Mr. Douglas Mayer is the project control specialist for the remedial design. Mr. Mayer will develop and maintain a working project schedule, including assessing project status against target milestones. He will maintain a liaison with the project manager so that relevant project control issues are managed effectively.

### **4.1.3.5 Document Coordinator**

Ms. Michelle McDonald is the document coordinator for this project. Ms. McDonald will support communications and document control activities for Honeywell's Syracuse Program projects, including the Geddes Brook/Ninemile Creek remedial design.

## **4.2 PROJECT COMMUNICATION**

Honeywell will communicate with the NYSDEC and other agencies in order to complete the remedial design effectively and efficiently. Honeywell will submit monthly progress reports that describe actions from the prior month, provide raw and/or validated data not previously submitted, identify completed deliverables, describe actions anticipated for the next month, provide overall status of ongoing obligations, identify modifications to work plans, and describe citizen participation activities during the previous month as required by the consent decree. Each

monthly progress report, data submittal, or other design deliverable will be submitted to the agencies and persons on the distribution list identified in the Consent Decree (Section 10) for review and comment.

#### **4.3 DOCUMENT MANAGEMENT**

Honeywell will prepare and submit remedial design documents for review and approval in accordance with the Consent Decree. Honeywell will distribute LCP OU-2 remedial design documents approved by NYSDEC within 14 days to the five public document repositories: the Onondaga County Public Library, Solvay Library, Atlantic States Legal Foundation, NYSDEC Regional Office in Syracuse, and NYSDEC Central Office in Albany. In addition, the Onondaga Nation will receive a copy of all NYSDEC-approved documents. The document coordinator, Ms. Michelle McDonald, will manage document control activities for the remedial design.

#### **4.4 HEALTH AND SAFETY PLAN(S)**

The health and safety of site personnel, visitors and members of the public are considered paramount. Written health and safety plan(s) will be developed for each phase of the remediation project that will describe the anticipated hazards and control measures to be applied to ongoing investigation activities related to the remedial design. Project health and safety plans will be developed and updated as needed to address changing activities and site conditions.

#### **4.5 PHYSICAL SECURITY**

Physical security for the site and physical security for off-site areas to be used to support the remedial action will be evaluated and controlled to reduce risks to persons, property, and the environment. Security measures that may be used include fences, gates, signs, and lighting. In areas where work is ongoing, workers will post appropriate warning signs, barricades, and caution tape to protect members of the public from accidentally accessing the site. Periodic assessments will be made to assess the effectiveness of security measures and determine if changes are needed.

#### **4.6 CITIZEN PARTICIPATION**

Honeywell will assist the NYSDEC in its implementation of a citizen participation program and will continue to provide information regarding the remedial program to the public. A Citizen Participation Plan will be prepared which provides a formal yet flexible plan for communication with the public during the remediation process. The plan will briefly describe the site and remediation program and identify specific community outreach and participation activities.

**SECTION 5****REFERENCES**

- New York State Department of Environmental Conservation. 2010a. DER-10. *Technical Guidance for Site Investigation and Remediation. Division of Environmental Remediation.* Draft. May, 2010.
- New York State Department of Environmental Conservation. 2010b. Record of Decision. *LCP Chemical Operable Unit No. 2.* April 2010.
- New York State Department of Environmental Conservation. 2010c. Order on Consent and Administrative Settlement (Index # D7-0001-01-03). Signed December 30, 2010.
- Parsons, 2004. Final Remedial Investigation Report for LCP OU-2. Prepared for Honeywell, Inc. September 2004.
- Parsons, 2009a. Final Feasibility Study Report for LCP OU-2. Prepared for Honeywell, Inc. March 2009.
- Parsons, 2009b. Final Remedial Action Report for the Soil Washing, Soil and Sediment Consolidation, Sewers, Slurry Wall, Groundwater Containment/Pretreatment and Interim Soil Cover at the LCP Bridge Street OU-1. Prepared for Honeywell, Inc. November, 2009.
- United States Environmental Protection Agency, 1995a. *Guidance for Scoping the Remedial Design EPA 540/R-95/025.* Office of Solid Waste and Emergency Response. March 1995.
- United States Environmental Protection Agency, 1995b. *Remedial Design/Remedial Action Handbook.* EPA 540/R-95/059. Office of Solid Waste and Emergency Response. June 1995.
- NY Standards and Specifications for Erosion and Sediment Control* (NYSDEC, 2005).