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# Explanation of Significant Differences

## Jones Chemicals, Inc. Superfund Site

Town of Caledonia  
Livingston County, New York

EPA Region 2

September 2016

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### INTRODUCTION

In accordance with Section 117(c) of the Comprehensive Environmental Response, Compensation, and Liability Act, as amended (CERCLA), 42 U.S.C. § 9617(c), and Section 300.435(c)(2)(i) of the National Oil and Hazardous Substances Contingency Plan, if, after the adoption of a final remedial action plan, there is a significant, but not fundamental, change with respect to the final plan, an explanation of the significant differences (ESD) and the reasons such changes were made must be published.

Volatile organic compounds (VOCs) are present in the groundwater underlying the Jones Chemicals, Inc. Superfund Site (Site). VOCs in groundwater can migrate through the soil and into buildings. This process, which is called vapor intrusion (VI), can result in actual or threatened unacceptable human exposures to VOCs inside occupied buildings. A VI investigation at the Jones manufacturing plant at the Site demonstrated the need for the installation of a vapor mitigation system under the concrete slab of an office area. Additionally, the Environmental Protection Agency (EPA) has determined that to ensure the protectiveness of the remedy, institutional controls (ICs)<sup>1</sup> are also needed to prevent exposure to potential VI at the plant, as well as at a parcel overlying the groundwater contaminant plume, should it be developed in the future.

This ESD serves to document EPA's decision to incorporate into the remedy the installation of the VI mitigation system at the office space and the use of several ICs to help minimize potential exposure to VI at the Site. If ongoing sampling of subslab and indoor air at the warehouse/production areas and other Site buildings indicate that additional mitigation measures are

necessary, these measures would also be included as part of the modified remedy.

### SITE HISTORY, CONTAMINATION PROBLEMS, AND SELECTED REMEDY

The Site, which includes a 41.6-acre chemical manufacturing and repackaging plant owned by JCI Jones Chemicals Inc. ("Jones"),<sup>2</sup> is located in the Village of Caledonia in northwestern Livingston County, New York. It is situated in a relatively flat, sparsely populated, lightly industrialized suburban area of the Village.

The plant located on the Jones property repackaged for resale chlorine from bulk containers into smaller containers from 1942 to 1960. Between 1960 and approximately 1977, VOCs and petroleum products were repackaged from bulk to smaller containers. Spills occurred at the Site during the transfer and repackaging of many of these chemicals.

In 1984, Jones' contractor began a hydrogeological assessment to determine the extent of soil and groundwater contamination from chlorinated organic solvents. This investigation indicated soil contamination in the vicinity of the plant's lagoons.

The New York State Department of Health (NYSDOH) detected VOCs at concentrations above standards in three on-site wells in tests conducted in 1986.

To reduce the potential for further contamination, Jones removed three underground storage tanks containing solvents in 1985 and all aboveground storage tanks containing solvents in 1990.

In 1990, the Site was placed on the Superfund National Priorities List. In 1991, Jones signed an Administrative

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<sup>1</sup> ICs are non-engineered controls, such as property or groundwater use restrictions imposed by a property owner by recorded instrument or by a governmental body by law or regulatory activity for the purpose of reducing or eliminating the potential for human exposure to contamination and/or protecting the integrity of a remedy.

<sup>2</sup> On March 30, 2000, the name of Jones Chemicals, Inc. was changed to JCI Jones Chemicals Inc.

Order on Consent with the EPA, requiring it to undertake a remedial investigation and feasibility study (RI/FS)<sup>3</sup> at the Site.

Based upon the results of the RI, it was determined that Site soils and groundwater were contaminated with VOCs. Based upon the results of the RI/FS, a Record of Decision (ROD)<sup>4</sup> was signed in September 2000. The major components of the selected remedy include:

- treatment of contaminated soils in a former solvent tank source area on the plant grounds exceeding New York State soil cleanup objectives by in-situ vapor extraction (ISVE);
- extraction of contaminated groundwater in the former solvent tank source area utilizing a network of recovery wells in the overburden and bedrock aquifers;
- treatment of the extracted groundwater with an existing air stripper (which allows for the utilization of the treated water as non-contact cooling water within the Jones plant) and discharge of the noncontact cooling water to on-Site lagoons until groundwater standards in the former solvent tank source area are achieved;
- in-situ treatment of dense non-aqueous phase liquid in the aquifer underlying the former solvent tank source area with an oxidizing agent;
- continued extraction and treatment of contaminated groundwater from the North Well;
- monitored natural attenuation (MNA)<sup>5</sup> of the contaminated groundwater located outside the former solvent tank source area and beyond the influence of the North Well; and
- implementation of ICs to limit future on-Site groundwater use to non-potable purposes until groundwater cleanup standards are achieved.

Negotiations with Jones related to the design and implementation of the selected remedy resulted in the signing of a Consent Decree in 2001.

Following the completion of the remedial design in 2003, the construction of the remedy began in 2003 and was completed in 2006.

After several years of operation of the ISVE system, sampling data collected indicated that mass VOC removal was at asymptotic levels and the system was no longer effectively treating the residual contamination left in the Site soils. As a result, the ISVE system was shut down in

2008. Delineation samples were collected in this area in July and November 2014 and June 2015. Alternative means to address this area of localized residual soil contamination are currently being evaluated.

The potential for VI was not evaluated in the RI/FS because the VI pathway was not typically included in Superfund investigations at that time. Between 2009 and 2014, VI sampling of subslab and indoor air was conducted at five on-Site interconnected buildings and multiple residential and commercial properties located in the vicinity of the Jones plant and the potential for VI was assessed using available EPA guidance.

Elevated subslab and indoor air VOC levels were detected in Jones' office space and a large warehouse/production area. In December 2012, a subslab depressurization system was installed under the slab of the office space to address VI concerns.

In 2014, EPA and Jones developed an annual sampling plan for three years that would collect subslab and indoor air data at the warehouse/production areas, as well as all of the other plant buildings. After the results from the next round of sampling that is anticipated to be conducted during the 2017 heating season are available, the data will be evaluated to determine if changes to the sampling frequency or mitigation measures are necessary to ensure vapor intrusion is not a pathway of concern.

A residential property located adjacent to the Jones property that had elevated VOC concentrations in the subslab was purchased by Jones in 2014 and the house was subsequently demolished.

A number of other properties near the Jones plant where subslab and indoor VI samples were collected require no further action because no detections were found at those locations or the detections of hazardous substances found were unrelated to the Site.<sup>6</sup>

Elevated concentrations of VOCs are also present in the groundwater underlying a commercial property owned by IKK Property Management LLC (IKK), which is immediately adjacent to the Jones plant property.

In April 2016, a Declaration of Covenants, Restrictions and Environmental Easement (Easement) for the Jones plant property was filed in the local land records of the Livingston County Clerk's Office. The easement calls for

monitored and quantified. Contaminant concentrations may attenuate in natural systems through biodegradation, sorption, volatilization, chemical or biological stabilization, dispersion, and/or dilution.

<sup>6</sup> For those locations where non-Site-related contaminants were detected in the indoor air, information on improving indoor air quality was provided to the property owners.

<sup>3</sup> The purpose of an RI/FS is to determine the nature and extent of the contamination at a site, evaluate the risk to human health and the environment and identify and evaluate remedial alternatives.

<sup>4</sup> A ROD documents the EPA's remedy decision. An amendment to a ROD makes a fundamental change to the ROD.

<sup>5</sup> MNA is the process by which a natural systems ability to attenuate contaminant(s) at a specific site is confirmed,

a Site Management Plan (SMP).<sup>7</sup> The Easement, which will run with the land, prohibits the installation or utilization of groundwater wells for drinking water on any portion of the Jones plant property. In addition, the Easement requires VI sampling and mitigation, if necessary, for any new structures constructed on the Jones property (these restrictions also apply to the acquired residential property noted above).

## **BASIS FOR THE DOCUMENT AND DESCRIPTION OF SIGNIFICANT DIFFERENCES**

VOCs are present in the groundwater underlying the Site. VOCs in groundwater can migrate through the soil and into buildings. This process, which is called VI, can result in unacceptable human exposures to VOCs inside occupied buildings.

As a result of the presence of elevated subslab and indoor air VOC levels in Jones' office space, a subslab depressurization system was installed.

As stated above, annual sampling of subslab and indoor air data at the warehouse/production areas, as well as all of the other plant buildings is being performed. After the results from the next round of sampling that is anticipated to be conducted during the 2017 heating season are available, the data will be evaluated to determine if changes to the sampling frequency or mitigation measures are necessary to ensure vapor intrusion is not a pathway of concern.

The elevated concentrations of VOCs present in the groundwater under the IKK property, while not currently presenting a VI exposure pathway, could be a concern if new residential or commercial construction intended for human occupancy occurs on this property. Therefore, the following ICs are needed:

- 1) Jones and IKK will enter into an agreement that will, among other things, require IKK to notify Jones in the event that IKK plans to build any new structures intended for human occupancy or expanding an existing structure on the IKK property. Jones will, in turn, notify EPA, New York State Environmental Conservation (NYSDEC) and NYSDOH. In addition, Jones will evaluate the potential for vapor intrusion for the structures and will perform mitigation activities, if necessary.<sup>8</sup>
- 2) A notice will be filed in the local land records of the Livingston County Clerk's Office to alert any potential purchaser, lessee or other user of the property that Jones, EPA, NYSDEC and NYSDOH must be notified if and when a request

is made to build a new commercial or residential structure or modify an existing structure on the IKK property. The notice will also alert any potential purchaser, lessee or other user of the property that Jones will evaluate the potential for vapor intrusion for the structure and will perform mitigation activities, if necessary.

- 3) Local governmental offices, such as building and zoning offices, will be notified by Jones annually of the controls on the IKK property and their records will be reviewed by Jones annually to ascertain whether or not any applications or other filings had been made regarding the IKK property. The findings of the above-noted activities will be provided in Jones' annual operation and maintenance report to be submitted to EPA, NYSDEC and NYSDOH.

This ESD serves to document EPA's decision to incorporate into the remedy the installation, operation, maintenance and monitoring of a VI mitigation system at the Jones' office space and ICs to minimize potential exposure through VI at the Site. If ongoing sampling of subslab and indoor air at the warehouse/production areas and other Site buildings indicate that additional mitigation measures are necessary, these measures would also be included as part of the remedy.

The selected remedy is expected to reduce VOC concentrations in the soil and groundwater to the levels designated in the ROD. All of the ICs for the Site will remain in place until the VOCs in the soils have met the cleanup objectives and the VOCs in groundwater have been reduced to a level where groundwater consumption and VI are no longer exposure pathways.

## **SUPPORT AGENCY COMMENTS**

NYSDEC, after careful consideration of the modified remedy, supports this ESD, as the modified remedy significantly changes but does not fundamentally alter the remedy selected in the ROD.

## **FIVE-YEAR REVIEWS**

Upon completion of remedial activities at the Site, hazardous substances will be reduced to levels which will permit unlimited use of, and unrestricted exposure to, soil and groundwater, under current land uses. It is the policy of the EPA to conduct five-year reviews when remedial activities, including monitoring, will continue for more than five years or if hazardous substances are to remain at a site. Because it will take more than five years to attain cleanup levels at the Site, a review will be conducted no

<sup>7</sup> The SMP provides for the proper management of all post-construction remedy components. Specifically, the SMP describes procedures to confirm that the requisite engineering and institutional controls are in place and that nothing has

occurred that will impair the ability of said controls to protect public health or the environment.

<sup>8</sup> Under the terms of the agreement, IKK will also grant Jones access to its property to sample of the monitoring wells.

less often than once every five years until such time as the EPA determines the Site is suitable for unlimited use and unrestricted exposure. A five-year review that is required by policy is triggered by the date of the approval of the Preliminary Close-Out Report, which documents that the EPA has determined that construction at the Site has been completed.

For the Site, the Preliminary Close-Out Report was approved in 2006. The first five-year review was completed in September 2011.

Because structures potentially affected by Site contaminants needed to be evaluated for VI, a protectiveness determination could not be made in the first five year review. As already stated, VI sampling was subsequently conducted at the Jones plant and nearby commercial and residential structures. Based upon the evaluation of the VI data, a five year review addendum report was completed in September 2014. The five year review addendum report concluded that the implemented remedy, along with the subslab depressurization system installed in the Jones office area and the demolition and annexation of the nearby residential property, was protective in the short term. To be protective in the long-term, the aforementioned ICs need to be put into place at the Site.

#### **AFFIRMATION OF STATUTORY DETERMINATIONS**

The EPA is issuing this ESD after consultation with the NYSDEC. NYSDEC concurs with the approach presented in this ESD. When implemented, the remedy, as modified by this ESD, will continue to be protective of human health and the environment, and will comply with federal and state requirements that are legally applicable or relevant and appropriate to the remedial action. The modified remedy is technically feasible, cost-effective and satisfies the statutory requirements of CERCLA by providing for a remedial action that has a preference for treatment as a principal element and therefore permanently and significantly reduces the toxicity, mobility and volume of hazardous substances.

#### **PUBLIC PARTICIPATION ACTIVITIES**

Pursuant to NCP §300.825(a)(2), this ESD will become part of the Administrative Record for the ROD. The Administrative Record is available for public review at the following locations:

Village of Caledonia, Clerks Office,  
3905 Main Street, Caledonia, NY 14423

*Hours: Monday to Friday 9:00 a.m. to 5:00 p.m.*

and

Village of Caledonia Library

3108 Main Street, Caledonia, NY 14423

*Hours: Monday to Friday 9:00 a.m. to 5:00 p.m.*

The Administrative Record file and other relevant reports and documents are also available for public review at the EPA Region 2 office at the following location:

U.S. Environmental Protection Agency  
290 Broadway, 18<sup>th</sup> Floor  
New York, New York  
(212) 637-3263

*Hours: Monday to Friday: 9:00 am – 5:00 pm*

The EPA and NYSDEC are making this ESD available to the public to inform it of the change made to the remedy. Should there be any questions regarding this ESD, please contact:

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With the publication of this ESD, the public participation requirements set out in §300.435(c)(2)(i) of the NCP have been met.