ANNOUNCEMENT OF PROPOSED PLAN

Proposed Plan for On-Site Remediation
Delavan Spray Technologies Site

4334 Main Highway, Bamberg, South Carolina
February 2026

The South Carolina Department of Environmental Services (SCDES, formerly the South Carolina Department of Health and Environmental Control or DHEC) has completed an evaluation of cleanup alternatives to address contamination at the Delavan Spray Technologies Site (Site). SCDES entered into Voluntary Cleanup Contract (13-4762-RP) with Delavan Spray, LLC on July 3, 2013. This Proposed Plan identifies SCDES's Preferred Alternative for cleanup of on-property contamination and provides the justification for this preference. In addition, the Proposed Plan includes summaries of the other cleanup alternatives evaluated during the process. These alternatives were identified based on information gathered during environmental investigations conducted at the Site since 2002.

SCDES is presenting this Proposed Plan to inform the public of activities conducted at the Site, gain public input, and fulfill the requirements of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and the National Oil and Hazardous Substances Pollution Contingency Plan (National Contingency Plan or NCP). This Proposed Plan summarizes information that can be found in greater detail in the *On-Site Focused Feasibility Study* (February 2023) and other documents contained in the Administrative Record. SCDES encourages the public to review these documents to gain a better understanding of the Site and the activities that have been completed.

SCDES will select a final cleanup remedy after reviewing and considering comments submitted during the public comment period.

SCDES may modify the Preferred Alternative or select another response action presented in this Proposed Plan based on new information of public comments. Therefore, the public is encouraged to review and comment on **all** the alternatives presented in this Proposed Plan.

SCDES's Preferred Cleanup Summary
Alternative 5
Air Sparge (AS), Soil Vapor Extraction (SVE), Monitored Natural Attenuation (MNA), and Institutional Controls (ICs)

SCDES's preferred remedial option is:

- Air Sparge (AS) and Soil Vapor Extraction (SVE) to address contamination by increasing volatilization of the contamination in the groundwater and soil, then capturing those vapors for treatment.
- Monitored Natural Attenuation (MNA) with Institutional Controls (ICs)
- This alternative would reduce the on-site source area contamination and reduce exposure to vapor intrusion to on-site workers.
- The alternative may reduce contaminant migration through reduction in source mass.

MARK YOUR CALENDAR

PUBLIC MEETING:

Public Meeting will be held on February 5, 2026 at 6:30pm at

Bamberg County Library
3156 E Railroad Ave
Bamberg, SC 29003

SCDES will hold an in person public meeting to further explain the Proposed Plan and all the alternatives presented in the Remedial Alternatives Evaluation and answer questions.

PUBLIC COMMENT PERIOD:

The Public Comment Period will be from February 5, 2026 through April 1, 2026.

SCDES will accept written comments on the Proposed Plan during the public comment period. Please submit your written comments to:

Genevieve Keller-Milliken, Project Manager
SCDES Bureau of Land & Waste Management
2600 Bull Street
Columbia, SC 29201
genevieve.kellermilliken@des.sc.gov

FOR MORE INFORMATION:

Call: Genevieve Keller-Milliken
Project Manager, 803-898-0722

See: SCDES's webpage at:
des.sc.gov/DelavanSprayTechnologies

View: The Administrative Record on the SCDES website and at the following locations:

SCDES's Freedom of Information Office
2600 Bull Street, Columbia, SC
(803) 898-3817
Monday - Friday: 8:30 am - 5:00 pm

@SouthCarolinaDES

info@des.sc.gov | des.sc.gov | 803.898.3432

SITE HISTORY

The Delavan Spray Technologies Site (the Site) is located at 4334 Main Highway, approximately 1 mile south-southwest of the city of Bamberg, in Bamberg County, South Carolina. The Site includes approximately 140 acres, consisting of the Delavan Spray Technologies Facility property of approximately 20 acres, (on-site) and private properties of the remaining approximately 120 acres (off-site). The land surrounding the Site includes agricultural, residential, undeveloped, and rural properties.

The Site was undeveloped, wooded land prior to development by Delavan Spray Technologies in the late 1960s and early 1970s. Operations at the facility are primarily the manufacturing of fuel metering equipment and spray nozzles. The manufacturing operations have remained the same over the years while ownership of the facility changed from Delavan Corporation (early 1970s to 1984) to Delavan, Inc (1984 to 2002) and finally Delavan Spray, LLC (2002 to present). The facility property consists of approximately 20 acres and includes a manufacturing building, a storage warehouse, a material and hazardous waste storage building, aboveground storage tank (AST) containment areas, a maintenance building and a combustion lab. The manufacturing building was constructed between 1969 and 1973. A waste-water pre-treatment plant was constructed in the mid 1980's to treat wastewater generated at the facility. The wastewater treatment plant has since been decommissioned, and all associated equipment was removed from the facility property.

In December 2002, a preliminary environmental investigation was submitted to the South Carolina Department of Health and Environmental Control (SCDHEC). The results showed elevated concentrations of volatile organic compounds (VOCs) present in groundwater. On May 22, 2013, an invitation letter was sent to Delavan Spray, LLC to join the State Voluntary Cleanup Program under a Voluntary Cleanup Contract (VCC). The VCC was executed on July 3, 2013 and required the submission of a Remedial Investigation (AECOM 2014) and a Feasibility Study (AECOM 2023).

AREAS OF CONCERN

The chemicals of concern (CoCs) at the Site that have historically exceeded their United States Environmental Protection Agency (EPA) Maximum Contaminant Levels (MCLs) in the groundwater are tetrachloroethene (PCE), trichloroethene (TCE), cis-1,2-dichloroethene (cis-1,2 DCE), vinyl chloride (VC), 1,1 dichloroethene (1,1 DCE), 1,1,1 trichloroethane (1,1,1, TCA), chloroform, methylene chloride, and toluene. The USEPA has established MCLs for the purpose of protecting active and potential drinking water resources, such as groundwater. PCE and its daughter products are considered the main drivers for groundwater cleanup on-site. The table below summarizes the highest groundwater CoC concentrations from historical reports, as presented in the Feasibility Study (AECOM 2023):

Contaminant of Concern	Highest Concentration
Tetrachloroethene (PCE)	136,000 µg/L
Trichloroethene (TCE),	626 µg/L
Cis-1,2-Dichloroethene (cis-1,2 DCE)	4,250 µg/L
Vinyl Chloride (VC)	114 µg/L
1,1-Dichloroethylene (1,1 DCE)	520 µg/L
1,1,1 Trichloroethane (1,1,1 TCA)	245 µg/L
Chloroform	299 µg/L
Methylene Chloride	765 µg/L
Toluene	99 µg/L

The USEPA has established Regional Screening Levels (RSLs) as a conservative benchmark to determine safe levels of exposure to chemicals in soil under both Industrial and Residential settings. In soil samples collected during the Remedial Investigation (AECOM 2014), PCE was detected above its Industrial RSL of 100 mg/kg at a concentration of 1580 mg/kg. No other VOCs were detected in soil borings above the Industrial RSLs. TCE, cis-1,2 DCE, and methylene chloride were detected at levels above their Residential RSLs of 0.94 mg/kg, 63 mg/kg and 57 mg/kg respectively. No metals were detected in the soil samples above their Industrial RSLs. Selenium was detected above the MCL-based Soil Screening Level (SSL) of 0.52 mg/kg. Arsenic and hexavalent chromium were detected above their Residential RSLs of 0.68 mg/kg and 0.95. Risk from PCE is considered the main soil concern at the site. It is anticipated that the Site use will remain industrial in the future.

Sub-slab vapor samples were collected during the Remedial Investigation in which PCE, TCE, and benzene were above the Industrial Air RSLs of 18 µg/m3, 0.88 µg/m3 and 1.6 µg/m3 respectively. Since the Remedial Investigation, a soil vapor extraction system has been installed under the main building. In the 2024 Fall Semi-Annual Groundwater Monitoring Report, trans-1,2-dichloroethene (trans-1,2 DCE) was detected above the Industrial Air RSL of 18 µg/m3.

Since construction, the facility has been used to manufacture fuel metering equipment and spray nozzles. According to workers at the Site, PCE was kept in an underground storage tank (UST) located along the southern side of the manufacturing building. This UST was removed sometime in the 1970s. Additionally, PCE was stored in ASTs in the secondary containment area at the southeast corner of the manufacturing building. Delavan Spray, LLC ceased using solvents at the facility in 2002.

During the Remedial Investigation, it was determined that the use and storage of PCE across the Site contributed to the contamination. There was no single event that can be identified to have caused the issue. Groundwater contamination has migrated off-site to adjacent properties in the deep zones of the aquifer, and water supply wells have historically shown detections below MCLs. The impacted water supply wells have had granulated activated carbon filters (GACs) placed on them by the responsible party as a proactive measure. VOCs have been detected below the MCLs in surface water downgradient of the site.

This proposed plan will be focused on the on-site remediation. A separate feasibility study is being prepared for the off-site contamination.

SUMMARY OF SITE RISKS

This proposed plan is focused on the on-site contamination found at the Delavan Spray Technologies Property.

Contamination from historic operations at the Site has been detected in the soil on-site, in sub-slab vapors beneath the buildings on the Delavan property and has migrated into the groundwater both on-site and further off-site above regulatory limits. Contaminated groundwater is considered to be the primary exposure risk factor of the Site. Secondary exposure concerns are from soil vapor intrusion and direct soil exposure. The current SVE system is mitigating vapor intrusion and contaminated soil is not readily accessible by an on-site worker. A remedial action is necessary to protect public health and the environment from actual or threatened releases of hazardous substances to the environment, to reduce or eliminate exposure to contaminated soils and dangerous vapors, and to help prevent further migration of contaminated groundwater off-site. The alternatives identified in this Proposed Plan and evaluated in the Feasibility Study are being presented as possible solutions for cleanup.

CLEANUP GOALS

Remedial Action Objectives (RAOs) are developed to set goals for protecting human health and the environment. The goals should be as specific as possible but should not unduly limit the range of remedial alternatives that can be developed. Accordingly, the following RAOs were developed for the Site:

- Short-term
    - Reducing further migration of contaminated groundwater and release into the environment by substantially reducing CoC impacts in source areas where the most COC mass is present.
    - Prevent soil vapor exposure by mitigating CoC levels in these areas, thereby minimizing continued leaching to groundwater and reduce the future risk potential of direct exposure via vapor intrusion to on-Site workers.
- Long Term
    - Prevent the ingestion of contaminated drinking water by restoring groundwater to drinking water standards.

The cleanup levels in the table below consist of Groundwater Maximum Contaminant Levels, Industrial Air Regional Screening Levels, and the MCL based Soil Screening Level for protection of groundwater.

Contaminant of Concern	Groundwater Maximum Contaminant Level (MCL)	Industrial Air Regional Screening Level (RSL)	MCL Based Soil Screening Level (SSL)
Tetrachloroethene (PCE)	5 μg/L	18 μg/m^3	2.3 μg/kg
Trichloroethene (TCE)	5 μg/L	0.88 μg/m^3	1.8 μg/kg
Cis-1,2-Dichloroethene (cis-1,2 DCE)	70 μg/L	18 μg/m^3	21 μg/kg
Vinyl Chloride (VC)	2 μg/L	2.8 μg/m^3	0.69 μg/kg
1,1-Dichloroethylene (1,1 DCE)	7 μg/L	1.7 μg/m^3	2.5 μg/kg
1,1,1 Trichloroethane (1,1,1 TCA)	200 μg/L	2200 μg/m^3	70 μg/kg
Chloroform	80 μg/L	0.53 μg/m^3	22 μg/kg
Methylene Chloride	5 μg/L	260 μg/m^3	3.1 μg/kg
Toluene	1000 μg/L	2200 μg/m^3	69 μg/kg
Benzene	5 μg/L	1.6 μg/m^3	2.6 μg/kg
Trans-1,2-Dichloroethene (trans-1,2-DCE)	100 μg/L	18 μg/m^3	31 μg/kg

SCOPE AND ROLE OF THE ACTION

The selection of one of the alternatives found in this Proposed Plan will be the final cleanup action for the on-site contamination. The remedial goals for these proposed actions include preventing ingestion of groundwater with concentrations of CoCs above applicable drinking water standards, restoring groundwater to drinking water standards, reducing the potential for contaminated soil and vapor exposure, and reduce further migration of contaminated groundwater.

SUMMARY OF REMEDIAL ALTERNATIVES

Based on information collected during previous investigations, an *On-Site Focused Feasibility Study* (AECOM 2023) was developed to identify, develop, and evaluate cleanup options to address the contamination at the Site. This evaluation considered the source, nature, and extent of contamination and associated potential risks developed during the Remedial Investigation (AECOM 2014) and additional assessments to determine and evaluate potential remedial alternatives and their overall protection of human health and the environment. Each remedial alternative evaluated by SCDES is summarized below. Additional details on each alternative can be found in the Feasibility Study (AECOM 2023) located in the Administrative Record.

Remedial Alternatives	Description
Alternative 1 No Action	• Required as a baseline for comparison to other alternatives by the National Contingency Plan. • No remedial action for soil, groundwater, or vapor intrusion. • Cost $0.
Alternative 2 Excavation, Groundwater Capture and Recovery, Sub-Slab Depressurization (SSD), Monitored Natural Attenuation (MNA), and Institutional Controls (IC)	• Removal of impacted source area soils for treatment and/or off-site disposal. • Extraction of contaminated groundwater for treatment. • Installation of a sub-slab depressurization system underneath building to prevent vapor intrusion. • Monitoring the natural degradation of CoCs in groundwater with the existing monitoring network. • Restrictions on land and groundwater use on-site. • Cost: Approximately $5,344,000

Alternative 3 Dual-Phase Extraction (DPE), Sub-Slab Depressurization (SSD), Monitored Natural Attenuation (MNA), and Institutional Controls (IC)	• Extraction of contaminated groundwater and vapors from the surficial aquifer to then be separated and treated. • Installation of a sub-slab depressurization system underneath building to prevent vapor intrusion. • Monitoring the natural degradation of CoCs in groundwater with the existing monitoring network. • Restrictions on land and groundwater use on-site. • Cost: Approximately $3,546,000
Alternative 4 In Situ Chemical Oxidation (ISCO), Sub-Slab Depressurization (SSD), Monitored Natural Attenuation (MNA), and Institutional Controls (IC)	• Injection of chemical oxidants and adsorption amendments to degrade CoCs in place and to reduce contaminant migration. • Installation of a sub-slab depressurization system underneath building to prevent vapor intrusion. • Monitoring the natural degradation of CoCs in groundwater with the existing monitoring network. • Restrictions on land and groundwater use on-site. • Cost: Approximately $2,706,00
Alternative 5 Air Sparging (AS), Soil Vapor Extraction (SVE), Monitored Natural Attenuation (MNA), and Institutional Controls (IC)	• Addition of increased airflow in subsurface soils and groundwater in order to increase volatilization of CoCs. • Using a vacuum system to flush the soil in the vadose zone and prevent vapor intrusion. • Monitoring the natural degradation of CoCs in groundwater with the existing monitoring network. • Restrictions on land and groundwater use on-site. • Cost: Approximately $2,962,000

Note: A final Remedial Design will be developed after the selection of a final remedy and prior to implementation of any alternative once a remedy has been selected.

DESCRIPTION OF REMEDIAL ALTERNATIVES

Alternative 1 - No Action

The No Action Alternative is required by the National Contingency Plan to be included as a baseline for comparison with other alternatives. Under this remedial alternative, there would be no groundwater monitoring or any further active remedial treatment measures. There is no cost associated with implementing this alternative.

Alternative 2 - Excavation, Groundwater Capture and Recovery, Sub-Slab Depressurization (SSD), Monitored Natural Attenuation (MNA), and Institutional Controls (ICs)

Excavation is the physical removal of contaminated soil. Unsaturated soils would be removed from beneath the main manufacturing building near the former PCE degreaser and the former PCE UST areas. Each area would be approximately 25ft by 15ft and to a depth of 10ft. This is estimated to take less than one year.

Groundwater capture and recovery would involve taking up large amounts of water to be treated and/or disposed of off-site to prevent further migration of the contamination. Recovery wells would be installed in both the shallow and the limestone zones of the aquifer downgradient of the source area. The groundwater would then be either treated on-site and discharged back into the environment (back underground, to a local stream, or a municipal sewer system) or be hauled off-site for proper disposal. Groundwater capture is estimated to last up to 30 years.

A Sub-Slab Depressurization (SSD) system would be installed underneath current or future structures to prevent vapor intrusion from impacted soil and groundwater. Small penetrations would be made through the current flooring of the buildings to install conveyance piping, and the addition of a blower would create a negative pressure. The captured gasses would them be released after recovery. The treatment and permitting of this off-gassing would be contingent on the concentrations of the VOCs present. SSD is estimated to run approximately 10 years.

Monitored Natural Attenuation (MNA) is a passive method that relies on natural processes to degrade the VOCs to levels below regulatory limits. MNA is measured through a variety of sampling parameters and analysis of the existing VOCs using the established well network. Groundwater monitoring is proposed for 30 years with 5-year remedy reviews to determine the effectiveness of the active remediation.

Institutional controls (ICs) would include restrictions on land use, soil management, development, and groundwater use on-site.

The 30-year present worth cost of Alternative 2 is estimated to be $5,344,000.

Alternative 3 – Dual Phase Extraction (DPE), Sub-Slab Depressurization (SSD), Monitored Natural Attenuation (MNA), and Institutional Controls (ICs)

Dual Phase Extraction (DPE) is a combination of both groundwater and vapor recovery from the subsurface. Extraction wells are installed to allow access to the vadose zone and groundwater table. The groundwater table is then lowered in and around the wells by groundwater extraction to expose the previously saturated soils. Vapors are then extracted from the soils. The resulting effluent can then be treated on-site and released into the environment (both water and vapors) or it can be containerized and hauled off-site for proper disposal. DPE would be expected to run for approximately 5 years.

A Sub-Slab Depressurization (SSD) system would be installed underneath current or future structures to prevent vapor intrusion from impacted soil and groundwater. Small penetrations would be made through the current flooring of the buildings to install conveyance piping, and the addition of a blower would create a negative pressure. The captured gasses would them be released after recovery. The treatment and permitting of this off-gassing would be contingent on the concentrations of the VOCs present. SSD is estimated to run approximately 10 years.

Monitored Natural Attenuation (MNA) is a passive method that relies on natural processes to degrade the VOCs to levels below regulatory limits. MNA is measured through a variety of sampling parameters and analysis of the existing VOCs using the established well network. Groundwater monitoring is proposed for 30 years with 5-year remedy reviews to determine the effectiveness of the active remediation.

Institutional controls (ICs) would include restrictions on land use, soil management, development, and groundwater use on-site.

The 30-year present worth cost of Alternative 2 is estimated to be $3,546,000.

Alternative 4 – In Situ Chemical Oxidation (ISCO), Sub-Slab Depressurization (SSD), Monitored Natural Attenuation (MNA), and Institutional Controls (ICs)

Chemical oxidation uses chemicals called “oxidants” to help change contaminants into less toxic ones. It is commonly described as “in situ” as it is conducted in place, without having to excavate soil or pump groundwater for aboveground cleanup. The oxidant would be introduced to the groundwater through injection points. ISCO is usually used to treat soil and groundwater contamination in the source area where the contaminants were originally released. There are a variety of oxidizing agents that can be used for this technology. Both the injection points and the oxidants must be reviewed and approved by the SCDES Underground Injection Control Program before a permit is issued for ISCO. ISCO injection events are estimated to take approximately 12 months.

A Sub-Slab Depressurization (SSD) system would be installed underneath current or future structures to prevent vapor intrusion from impacted soil and groundwater. Small penetrations would be made through the current flooring of the buildings to install conveyance piping, and the addition of a blower would create a negative pressure. The captured gasses would them be released after recovery. The treatment and permitting of this off-gassing would be contingent on the concentrations of the VOCs present. SSD is estimated to run approximately 10 years.

Monitored Natural Attenuation (MNA) is a passive method that relies on natural processes to degrade the VOCs to levels below regulatory limits. MNA is measured through a variety of sampling parameters and analysis of the existing VOCs using the established well network. Groundwater monitoring is proposed for 30 years with 5-year remedy reviews to determine the effectiveness of the active remediation.

Institutional controls (ICs) would include restrictions on land use, soil management, development, and groundwater use on-site.

The 30-year present worth cost of Alternative 4 is estimated to be $2,706,000.

Alternative 5 –Air Sparging (AS), Soil Vapor Extraction (SVE), Monitored Natural Attenuation (MNA), and Institutional Controls (ICs)

Air Sparging (AS) and Soil Vapor Extraction (SVE) are two technologies that are often combined. Air sparging introduces increased airflow into saturated and unsaturated soils to increase volatilization of the CoCs. Horizontal air sparge wells would be installed underneath the main manufacturing building, running parallel to one another. SVE is then used to remove those increased vapors from the soil and with a robust system, prevent vapor intrusion. The SVE wells would be installed either vertically through the current flooring of the building, or horizontally under the flooring, into the vadose zone. Conveyance piping would be installed between the extraction wells to connect to a blower, which would create a negative pressure similar to an SSD system and remove the vapors for off-gassing. An SVE system is already in place underneath the main manufacturing building. The air sparge system would be installed at a greater depth than the SVE system. The combined system of AS and SVE would be running for approximately 3 years.

Monitored Natural Attenuation (MNA) is a passive method that relies on natural processes to degrade the VOCs to levels below regulatory limits. MNA is measured through a variety of sampling parameters and analysis of the existing VOCs using the established well network. Groundwater monitoring is proposed for 30 years with 5-year remedy reviews to determine the effectiveness of the active remediation.

Institutional controls (ICs) would include restrictions on land use, soil management, development, and groundwater use on-site.

The 30-year present worth cost of Alternative 5 is estimated to be $2,962,000.

EVALUATION OF ALTERNATIVES

The National Contingency Plan establishes specific criteria to evaluate and compare the different remediation alternatives individually and against each other to select a remedy. This section of the Proposed Plan profiles the relative performance of each alternative against the criteria, noting how it compares to the other alternatives under consideration. The criteria are:

1. Overall protection of human health and the environment;
2. Compliance with Applicable or Relevant and Appropriate Requirements (ARARs);
3. Short-term effectiveness;
4. Long-term effectiveness and permanence;
5. Reduction of toxicity, mobility, or volume through treatment;
6. Implementability;
7. Cost; and
8. Community acceptance.

The primary objective for the preferred remedial action is to be protective of human health and the environment and to comply with State and Federal regulations. These two objectives are considered *threshold criteria*. Threshold criteria are requirements each alternative must meet in order to be eligible for selection.

The following measures are considered *balancing criteria*: long-term effectiveness and permanence; reduction of toxicity, mobility, or volume through treatment; short-term effectiveness; implementability; and cost. These criteria are used to weigh the technical feasibility, strengths and weaknesses, and cost advantages and disadvantages of each alternative. Community acceptance of the cleanup alternative is a *modifying criterion* that will be carefully considered by SCDES prior to final remedy selection.

COMPARATIVE ANALYSIS OF ALTERNATIVES

A comparative analysis of each alternative was performed and is illustrated in Comparison of Remedy Alternative to Evaluation Criteria Table within this document. The alternatives were evaluated in relation to one another for each of the evaluation criteria. The purpose of the analysis is to identify the relative advantages and disadvantages of each alternative.

Overall Protection of Human Health and the Environment

When evaluating alternatives in terms of overall protection of human health and the environment, consideration is given to the way site-related risks are eliminated, reduced, or controlled through treatment, engineering controls, or institutional controls.

Alternative 1 (No Action) does not provide adequate protection of Human Health and the Environment as it does not control or actively reduce the contamination at the Site. This alternative is retained for comparison to active remedies. Alternative 2 received a low score as the excavation would be completed to a relatively shallow depth and may leave residual source contamination that would continue to leach into the groundwater and release vapors. Alternative 4 also received a low score as unsaturated soils would not be targeted using ISCO and could leave residual contamination. Alternative 3 received a moderate score, as DPE would target a larger area in the subsurface and include saturated soils where excavation would not. Alternative 5 achieved the highest score, as it would treat the largest area of source contamination present under the building.

Compliance with ARARs (Applicable or Relevant and Appropriate Requirements)

This evaluation criterion evaluates whether an alternative meets federal and state environmental statutes and regulations that pertain to the site. Each alternative is evaluated with respect to its ability to comply with such requirements.

Alternative 1 does not meet regulatory limits for groundwater or soil in an acceptable timeframe since no remediation would be conducted. There is no mitigation for vapor intrusion concerns. Alternatives 2 thru 5 would meet regulatory limits for groundwater and soil in various timeframes. All four alternatives have mitigation planned for vapor intrusion concerns. Alternatives 2 and 3 would require discharge permits and a licensed wastewater operator for the systems but alternative 2 would take longer. Alternatives 4 and 5 would require Underground Injection Control (UIC) Permits.

Short-Term Effectiveness

The short-term effectiveness evaluation takes into consideration any risk the alternative poses to on-site workers, the surrounding community, or the environment during implementation, as well as the length of time needed to implement the alternative.

Alternative 1 received the lowest score, as it would increase risk to on-site workers from the shutdown of the current SVE system and no implementation of a viable alternative. Alternatives 2, 3, 4 and 5 would immediately provide impact on the CoCs in the soil and groundwater at the site. Alternative 2 would include a large amount of risk to workers, cause major disruptions to facility operations, and require a large amount of space. Alternative 3 would provide moderate risks to on-site workers and require relocation of facility equipment. Alternative 4 would come with moderate risk to on-site workers from injection activities. Alternative 5 achieved the highest score due to an SVE system has already been installed and an air sparging system installation would not impact facility operations nearly as much as the other alternatives.

Long-Term Effectiveness and Permanence

This criterion requires an evaluation of the potential long-term risks remaining after implementation of the remedy. Issues addressed for each alternative include the magnitude of long-term risks and the long-term reliability of the management controls.

Alternative 1 received the lowest score as there would be no positive change towards longevity or permanence. Alternative 2 received a low score as the removal of the contaminated soil would be a permanent solution, however the recovery and treatment of the groundwater would take the longest as a remediation strategy. Alternative 4 also received a low score due to the hit-or-miss nature of the ISCO injections caused by variable subsurface conditions, which could lead to a rebound. Alternatives 3 and 5 achieved moderate scores; Alternative 3 would affect both the contaminated vapor and groundwater in the saturated and unsaturated zones, influencing a larger source area. Alternative 5 would affect all three media – soil, groundwater and vapor – and permanently change the source area.

Reduction of Toxicity, Mobility, or Volume through Treatment (TMV)

This criterion measures the degree to which an alternative employs treatment to reduce the harmful effects of contaminants, their ability to move in the environment, and the amount of contamination present.

Alternative 1 received the lowest score as this remedy would not address the toxicity, mobility or volume of contamination in a timely manner. Alternatives 2, 3 and 4 received moderate scores, as they are active remedies and treat the source area and would reach remediation goals within a reasonable timeframe. Alternative 5 received the highest rating as it remediates the source area by reducing toxicity, mobility and volume through active treatment and would likely reach the remediation goal in the fastest timeframe.

Implementability

The analysis of implementability considers the technical and administrative feasibility of remedy implementation, as well as the availability of required materials and services needed.

Alternative 2 received the lowest score as it would require a longer shutdown of the facility, potentially cause structural damages to the buildings, and require the most amount of free space. Alternatives 3 and 4 received moderate scores as they would require many additional installations and would require interruptions to facility operations, movement of facility equipment and difficult space management. Alternatives 1 and 5 received the highest implementation score; Alternative 1 has no actions that need to be taken for implementation, and Alternative 5 allows for the use of the already installed SVE system, requiring only the installation of the air sparging system.

Cost

The following list presents the estimated net present worth cost for each alternative over a 30-year period:

Alternative 1 (No Action)	$0
Alternative 2 (Excavation, Groundwater Capture, SSD, MNA and ICs)	$5,344,000
Alternative 3 (DPE, SSD, MNA and ICs)	$3,546,000
Alternative 4 (ISCO, SSD, MNA and ICs)	$2,706,000
Alternative 5 (AS, SVE, MNA and ICs)	$2,962,000

Community Acceptance

Community acceptance of the preferred remedy will be evaluated after the public meeting and comment period. Public comments will be summarized, and responses provided in the Responsiveness Summary Section of the Record of Decision document that will present the SCDES's final remedy selection. SCDES may choose to modify the preferred alternative or select another remedy evaluated in the Feasibility Study based on public comments or new information.

COMPARISON OF REMEDIAL ALTERNATIVES TO EVALUATION CRITERIA

Alternatives 1-5 are compared against each other for groundwater cleanup. The tables below rank the alternatives from 0-5 based off their effectiveness for each category with 0 being the lowest score and 4 being the highest score. The remedy with the highest total score is considered the best alternative.

Criterion	**Alternative 1 No Action**	**Alternative 2 Excavation, Groundwater Capture, SSD, MNA & ICs**	**Alternative 3 DPE, SSD, MNA & ICs**	**Alternative 4 ISCO, SSD, MNA & ICs**	**Alternative 5 AS, SVE, MNA & ICs**
Protection Human Health and the Environment	Does not protect human health nor the environment.	Treats some source area contamination. Provides protection of human health and the environment throughout the remedial process.	Treats source area contamination. Provides protection of human health and the environment throughout the remedial process.	Treats source area contamination. Provides protection of human health and the environment throughout the remedial process.	Treats the largest area of source contamination. Provides protection of human health and the environment throughout the remedial process.
	1	**2**	**3**	**2**	**4**
Compliance with ARARs	Does not comply with ARARs.	Complies with ARARs in a longer time frame. Discharge permit and licensed operator would be required.	Complies with ARARs in a reasonable timeframe. Discharge permit and licensed operator would be required.	Complies with ARARs in a reasonable timeframe. Injection permit would be required.	Complies with ARARs in a reasonable timeframe. Injection permit would be required.
	0	**2**	**3**	**3**	**3**
Short-Term Effectiveness	Do not provide short-term effectiveness. Increased risk from shutting down SVE system.	Provides short-term effectiveness with IC and SSD but brings a large risk to on-site workers and nearby residents with removal.	Provides short-term effectiveness with IC, SSD and DPE but brings a moderate risk to on-site workers with installation.	Provides short-term effectiveness with IC, SSD and ISCO but brings a moderate risk to on-site workers with installation.	Provides short-term effectiveness with IC and AS. An SVE system has already been installed, and modifications would be minor.
	1	**3**	**3**	**3**	**4**
Long-Term Effectiveness and Permanence	Does not provide long term effectiveness and permanence.	Provides some long-term effectiveness through excavation, groundwater capture and SSD by removing subsurface CoCs. Timeframe to reach remediation goals is much longer than other alternatives.	Provides long-term effectiveness through DPE and SSD by removing subsurface CoCs. Timeframe to reach remediation goals is moderate.	Provides long-term effectiveness through ISCO and SSD by removing subsurface CoCs. Soil composition may affect the target area effectiveness. Timeframe to reach remediation goals is longer than other alternatives.	Provides long-term effectiveness through AS and SVE by removing CoCs from subsurface soils and groundwater. Timeframe to reach remediation goals is moderate.
	1	**2**	**3**	**2**	**3**

Table is continued on next page.

Criterion	Alternative 1 No Action	Alternative 2 Excavation, Groundwater Capture, SSD, MNA & ICs	Alternative 3 DPE, SSD, MNA & ICs	Alternative 4 ISCO, SSD, MNA & ICs	Alternative 5 AS, SVE, MNA & ICs
Reduction of toxicity, mobility, & volume through treatment	Does not actively reduce toxicity, mobility nor volume by active treatment.	Reduction in volume through excavation. Mobility is addressed with groundwater capture and recovery and SSD. Residual source area is expected to remain in saturated soils.	Reduction in volume through DPE. Vapor mobility is addressed with DPE and SSD. Some residual source area is expected to remain.	Reduction in toxicity and volume through ISCO. Vapor Mobility is addressed with SSD. Some residual source area is expected to remain.	Reduction in toxicity and volume through AS and SVE. SVE is more effective than SSD. Some residual source area is expected to remain.
	1	**3**	**3**	**3**	**4**
Implementability	No issues to be implemented.	Facility operations may need to cease for excavation. Facility equipment would need to be moved, some permanently. SSD system would need to be installed in the building	Facility equipment would need to be moved and major interruptions to facility operations would be expected. SSD system would need to be installed in the building	Facility equipment would need to be moved and interruptions to facility operations would be expected. SSD system would need to be installed in the building	Resources are readily available. Implementation not expected to hinder facility operation.
	4	**1**	**2**	**2**	**4**
Costs	$0	$5,344,000	$3,546,000	$2,706,000	$2,962,000
	4	**1**	**2**	**3**	**3**
Total Score	**8**	**14**	**19**	**19**	**24**

SUMMARY OF SCDES'S PREFERRED ALTERNATIVE

SCDES has identified Alternative 5, which combines the use of Air Sparge (AS), Soil Vapor Extraction (SVE), Monitored Natural Attenuation (MNA), and Institutional Controls (ICs) as the preferred alternative to address the contamination at the Delavan Spray Technologies Site. Community acceptance is a critical part of the final decision-making process, and the final selection could change based on input from the public. A final Remedial Design will be developed prior to implementation of the preferred remedial alternative.

Alternative 5 utilizes the existing SVE system that was installed in 2022 as an interim measure under the main building of the facility. Additional vertical sparge wells are proposed to compliment the in-use system in the areas of highest groundwater contamination. An SVE system creates a large vacuum and influences both the saturated and unsaturated soils. This would be combined with an AS system installed at a deeper interval and perpendicular to the SVE system, using horizontally drilled injection wells. The AS system is designed to volatilize the CoCs present in the groundwater and soil and then capture the vapors. These technologies would run in tandem, complementing one another for increased remediation of the targeted media.

Groundwater monitoring would be conducted throughout the treatment process and continue monitoring post-remediation CoC concentrations at the Site to ensure the progress of the treatment. MNA can be used almost immediately with these active technologies to assess effectiveness of the system and help fine-tune the remedy. Institutional controls such as land and groundwater use restrictions would be implemented on-site as part of the remedial plan.

This alternative would have five-year reviews post treatment to demonstrate that cleanup goals are being achieved.

The total estimated net present worth of this alternative combination is approximately $2,962,000 over a 30-year period.

It is the judgment of SCDES that the Preferred Alternative identified in this Proposed Plan is necessary to protect public health and the environment.

USE THIS SPACE TO WRITE YOUR COMMENTS

Your input on the Proposed Plan for the Delavan Spray Technologies Site is important. Comments provided by the public are valuable in helping SCDES select a final cleanup remedy.

You may use the space below to write your comments, then fold and mail. Comments must be postmarked by April 1, 2026. If you have any questions, please contact Genevieve Keller-Milliken at 803-898-0722. You may also submit your questions and/or comments electronically to: genevieve.kellermilliken@des.sc.gov.

Name ____ Telephone ________________________________

Address ____ Email ___________________________________

City ____ State ______________ Zip ______________