DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION
RCRA Corrective Action
Environmental Indicator (EI) RCRIS code (CA725)
Current Human Exposures Under Control

Facility Name: Solid State Scientific, Inc. (SSS)
Facility Address: 160, 200 and 201 Commerce Drive, Montgomery Township, PA 18936
Facility EPA ID #: PAD002278331

1. Has **all** available relevant/significant information on known and reasonably suspected releases to soil, groundwater, surface water/sediments, and air, subject to RCRA Corrective Action (e.g., from Solid Waste Management Units (SWMU), Regulated Units (RU), and Areas of Concern (AOC)), been **considered** in this EI determination?

☒ If yes - check here and continue with #2 below.

☐ If no - re-evaluate existing data, or

☐ if data are not available, skip to #8 and enter "IN" (more information needed) status code.

BACKGROUND

Definition of Environmental Indicators (for the RCRA Corrective Action)

Environmental Indicators (EI) are measures being used by the RCRA Corrective Action program to go beyond programmatic activity measures (e.g., reports received and approved, etc.) to track changes in the quality of the environment. The two EI developed to-date indicate the quality of the environment in relation to current human exposures to contamination and the migration of contaminated groundwater. An EI for non-human (ecological) receptors is intended to be developed in the future.

Definition of "Current Human Exposures Under Control" EI

A positive "Current Human Exposures Under Control" EI determination ("YE" status code) indicates that there are no "unacceptable" human exposures to "contamination" (i.e., contaminants in concentrations in excess of appropriate risk-based levels) that can be reasonably expected under current land- and groundwater-use conditions (for all "contamination" subject to RCRA corrective action at or from the identified facility (i.e., site-wide)).

Relationship of EI to Final Remedies

While Final remedies remain the long-term objective of the RCRA Corrective Action program the EI are near-term objectives which are currently being used as Program measures for the Government Performance and Results Act of 1993, GPRA). The "Current Human Exposures Under Control" EI are for reasonably expected human exposures under current land- and groundwater-use conditions ONLY, and do not consider potential future land- or groundwater-use conditions or ecological receptors. The RCRA Corrective Action program's overall mission to protect human health and the environment requires that Final remedies address these issues (i.e., potential future human exposure scenarios, future land and groundwater uses, and ecological receptors).

Duration / Applicability of EI Determinations

EI Determinations status codes should remain in RCRIS national database ONLY as long as they remain true (i.e., RCRIS status codes must be changed when the regulatory authorities become aware of contrary information).

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2. Are groundwater, soil, surface water, sediments, or air **media** known or reasonably suspected to be **"contaminated"**[1] above appropriately protective risk-based "levels" (applicable promulgated standards, as well as other appropriate standards, guidelines, guidance, or criteria) from releases subject to RCRA Corrective Action

(from SWMUs, RUs or AOCs)?

	Yes	No	?	Rationale / Key Contaminants
Groundwater	X			VOCs are detected in groundwater at concentrations greater than MCLs
Air (indoors) [2]		X		Concentrations of VOCs in groundwater are below the EPA and/or PADEP groundwater screening levels for indoor air.
Surface Soil (e.g., <2 ft)		X		Concentrations of constituents are below the EPA Region 3 Non-Residential SLs. The property is currently used for non-residential purposes
Surface Water		X		No releasesdocumented
Sediment		X		No Releases documented
Subsurf. Soil (e.g., >2 ft)		X		Concentrations of hazardous constituents are below the EPA/PADEP non-residential SLs/MSCs
Air (outdoors)		X		No releases documented

☐ If no (for all media) - skip to #6, and enter "YE," status code after providing or citing appropriate "levels," and referencing sufficient supporting documentation demonstrating that these "levels" are not exceeded.

☒ If yes (for any media) - continue after identifying key contaminants in each "contaminated" medium, citing appropriate "levels" (or provide an explanation for the determination that the medium could pose an unacceptable risk), and referencing supporting documentation.

☐ If unknown (for any media) - skip to #6 and enter "IN" status code.

Rationale and Reference(s):

A. Background:

The former Solid State Scientific (SSS) facility was located at the corner of Commerce Drive and Enterprise Road in Montgomeryville, PA. The facility consisted primarily of three buildings in the Montgomeryville Industrial Park. The facility no longer exists and the property has been subdivided into three properties, which each correspond to one of the SSS buildings. Located at 201 Commerce Drive is SSS Building #1, which is currently owned by Aztec Products that manufactures floor care equipment. The SSS building #2 located at 160 Commerce Drive is currently owned and operated by 160 Commerce Drive LP which leases portions of the building to commercial tenants. Current uses include storage, a closet assembly business, and a water resource consulting firm office. At 200 Commerce Drive is SSS Building #3, which is currently owned by Grampians, LP and operated by Saint-Gobain Abrasives, Inc. The three properties are located in an industrial park. Neighboring properties are mostly industrial and commercial with some residences in the general vicinity

The facility was a semiconductor manufacturing facility that produced large-scale integrated circuits. These circuits were used in watches, clocks, smoke detectors, computers, space and telecommunications, military communications, and various other uses. The circuits were produced on the surface of a silicone wafer with each wafer containing as many as 800 circuits. The wafers were mass-produced using photographic techniques, high temperature heat treatments, and chemical processing.

Two of the SSS buildings (Buildings #2 and Building #3) processed the silicone wafers and the third building (Building #1) contained the photo processing operation. The facility utilized variety of acids, solvents, and photo chemicals. All spent acids and low pH rinse streams were neutralized with sodium bicarbonate before

being discharged to a tributary of Park Creek. Used solvents were transported to a neighboring chemical company for reclamation.

On August 18, 1980, SSS filed a Notification of Hazardous Waste Activity for its generation and treatment/storage/disposal of hazardous waste. SSS submitted a Part A Permit Application in November 1980.

B. Investigations and Remediation

The Solid Waste Management Units (SWMUs) identified at the facility included Empty Drum Storage Area, Acid Treatment Tank, Underground Waste Solvent Tank, Drum Storage Shed, and Aboveground Waste Storage Tanks. A closure plan for the SSS facility was submitted in December 1984. Closure activities for the Waste Chemical Storage Areas, the Underground Waste Solvent Tank, and Drum Storage Shed were performed. It was determined that closure was performed in accordance with the approved closure plan and PADEP approved the closure on September 26, 1985.

Investigations and remediation under PADEP Act 2 program have been performed at the Facility. VOCs contaminated soils around the former waste solvent tank were excavated. Approximately 250 tons of impacted soil were excavated and removed from the site. The Facility's Act 2 Final Reports were approved by PADEP. Groundwater investigations revealed that TCE, 1,1-DCE, and vinyl chloride were detected in groundwater at the facility at concentrations above the MCLs. The groundwater contamination, however, does not migrate offsite and is confined within the facility's property boundary.

Footnotes:

[1] "Contamination" and "contaminated" describes media containing contaminants (in any form, NAPL and/or dissolved, vapors, or solids, that are subject to RCRA) in concentrations in excess of appropriately protective risk-based "levels" (for the media, that identify risks within the acceptable risk range).

[2] Recent evidence (from the Colorado Dept. of Public Health and Environment, and others) suggest that unacceptable indoor air concentrations are more common in structures above groundwater with volatile contaminants than previously believed. This is a rapidly developing field and reviewers are encouraged to look to the latest guidance for the appropriate methods and scale of demonstration necessary to be reasonably certain that indoor air (in structures located above (and adjacent to) groundwater with volatile contaminants) does not present unacceptable risks.

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3. Are there **complete pathways** between "contamination" and human receptors such that exposures can be reasonably expected under the current (land- and groundwater-use) conditions?

Summary Exposure Pathway Evaluation Table

Potential **Human Receptors** (Under Current Conditions)

"Contaminated" Media	Residents	Workers	Day-Care	Construction	Trespassers	Recreation	Food[3]
Groundwater	No	No	No	No			No
~~Air (indoors)~~							
Soil (surface, e.g., <2 ft)	No	No	No	No	No	No	No
~~Surface Water~~							
~~Sediment~~							
Soil (subsurface e.g., >2 ft)				No			No
~~Air (outdoors)~~							

Instructions for Summary Exposure Pathway Evaluation Table:

1. Strike-out specific Media including Human Receptors' spaces for Media which are not "contaminated" as identified in #2 above.

2. enter "yes" or "no" for potential "completeness" under each "Contaminated" Media -- Human Receptor combination (Pathway).

Note: In order to focus the evaluation to the most probable combinations some potential "Contaminated" Media - Human Receptor combinations (Pathways) do not have check spaces ("___"). While these combinations may not be probable in most situations they may be possible in some settings and should be added as necessary.

☒ If no (pathways are not complete for any contaminated media-receptor combination) - skip to #6, and enter "YE" status code, after explaining and/or referencing condition(s) in-place, whether natural or man-made, preventing a complete exposure pathway from each contaminated medium (e.g., use optional Pathway Evaluation Work Sheet to analyze major pathways).

☐ If yes (pathways are complete for any "Contaminated" Media - Human Receptor combination) - continue after providing supporting explanation.

☐ If unknown (for any "Contaminated" Media - Human Receptor combination) - skip to #6 and enter "IN" status code.

Rationale and Reference(s):

Analytical results of soil samples at the facility showed that VOCs were detected at concentrations below the EPA non-residential direct contact SLs. Groundwater is not used at the facility for potable purposes. The groundwater contamination is confined within the Facility's property boundary. The facility is currently used for non-residential purpose. Construction worker exposures would be protected thru PPE.

[3] Indirect Pathway/Receptor (e.g., vegetables, fruits, crops, meat and dairy products, fish, shellfish, etc.)

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4. Can the **exposures** from any of the complete pathways identified in #3 be reasonably expected to be **"significant"**[4] (i.e., potentially "unacceptable" because exposures can be reasonably expected to be: 1) greater in magnitude (intensity, frequency and/or duration) than assumed in the derivation of the acceptable "levels" (used to identify the "contamination"); or 2) the combination of exposure magnitude (perhaps even though low) and contaminant concentrations (which may be substantially above the acceptable "levels") could result in greater than acceptable risks)?

☐ If no (exposures can not be reasonably expected to be significant (i.e., potentially "unacceptable") for any complete exposure pathway) - skip to #6 and enter "YE" status code after explaining and/or referencing documentation justifying why the exposures (from each of the complete pathways) to "contamination" (identified in #3) are not expected to be "significant."

☐ If yes (exposures could be reasonably expected to be "significant" (i.e., potentially "unacceptable") for any complete exposure pathway) - continue after providing a description (of each potentially "unacceptable" exposure pathway) and explaining and/or referencing documentation justifying why the exposures (from each of the remaining complete pathways) to "contamination" (identified in #3) are not expected to be "significant."

☐ If unknown (for any complete pathway) - skip to #6 and enter "IN" status code

Rationale and Reference(s):

[4] If there is any question on whether the identified exposures are "significant" (i.e., potentially "unacceptable") consult a human health Risk Assessment specialist with appropriate education, training and experience.

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5. Can the "significant" **exposures** (identified in #4) be shown to be within **acceptable** limits?

☐ If yes (all "significant" exposures have been shown to be within acceptable limits) - continue and enter "YE" after summarizing and referencing documentation justifying why all "significant" exposures to "contamination" are within acceptable limits (e.g., a site-specific Human Health Risk Assessment).

☐ If no - (there are current exposures that can be reasonably expected to be "unacceptable")- continue and enter "NO" status code after providing a description of each potentially "unacceptable" exposure.

☐ If unknown (for any potentially "unacceptable" exposure) - continue and enter "IN" status code.

Rationale and Reference(s):

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6. Check the appropriate RCRIS status codes for the Current Human Exposures Under Control EI (event code CA725), and obtain Supervisor (or appropriate Manager) signature and date on the EI determination below (attach appropriate supporting documentation as well as a map of the facility).

☒ YE - Yes, "Current Human Exposures Under Control" has been verified. Based on a review of the information contained in this EI Determination, "Current Human Exposures" are expected to be "Under Control" at the Solid State Scientific, Inc. facility, EPA ID # PAD002278331, located at 160, 200, and 201 Commerce Drive, Montgomeryville, PA 18936 under current and reasonably expected conditions. This determination will be re-evaluated when the Agency/State becomes aware of significant changes at the facility.

☐ NO - "Current Human Exposures" are NOT "Under Control."

☐ IN - More information is needed to make a determination.

Completed by (signature) _____ Date 6-29-18
Tran Tran
Project Manager

Supervisor (signature) _____ Date 6-29-18
Paul Gotthold
Associate Director
EPA Region 3

Locations where References may be found:

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