RECORD OF DECISION

Dzus Fastener Co., Inc.
Operable Unit Number 03: Willetts Creek Wetland Areas
State Superfund Project
West Islip, Suffolk County
Site No. 152033
October 2017

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

DECLARATION STATEMENT - RECORD OF DECISION

Dzus Fastener Co., Inc.
Operable Unit Number: 03
State Superfund Project
West Islip, Suffolk County
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Statement of Purpose and Basis

This document presents the remedy for Operable Unit Number: 03: Willetts Creek Wetland Areas of the Dzus Fastener Co., Inc. site, a Class 2 inactive hazardous waste disposal site. The remedial program was chosen in accordance with the New York State Environmental Conservation Law and Title 6 of the Official Compilation of Codes, Rules and Regulations of the State of New York (6 NYCRR) Part 375, and is not inconsistent with the National Oil and Hazardous Substances Pollution Contingency Plan of March 8, 1990 (40CFR300), as amended.

This decision is based on the Administrative Record of the New York State Department of Environmental Conservation (the Department) for Operable Unit Number: 03 of the Dzus Fastener Co., Inc. site and the public's input to the proposed remedy presented by the Department. A listing of the documents included as a part of the Administrative Record is included in Appendix B of the ROD.

Description of Selected Remedy

The elements of the selected remedy are as follows:

1. Pre-design investigation to refine excavation boundaries.

2. Clearing, chipping, and grubbing of woody material and subgrade preparation of the site would be conducted.

3. Soil and Sediment removal:
- removal of bank soil that exceeds cadmium and chromium residential use SCOs
- removal of sediment to native material in the zone of impact. The zone of impact is the portion of Willetts Creek (and associated floodplain) where cadmium and chromium were consistently observed above residential SCOs for soil and for sediment above the lowest end of the Class B SGVs- an indication of a potential for moderate ecological impact.

This zone extends from behind the shopping plaza (CR4) downstream to approximately 500 ft. south of the footbridge at Edmore Lane (CR36).

4. The excavated area would be restored to a stable riparian corridor with stable stream and

floodplain wetlands. A restoration plan will be included in the remedial design to specify the details of the restoration. Wetland habitat will be restored to the maximum extent possible while allowing sufficient flood capacity and appropriate stream flow. Details regarding substrates, plantings, and seeding for restoration will be included in the restoration plan

5. When confirmation sample results indicate all soil containing cadmium and chromium exceeding residential use SCOs, and all sediment within the area of impact have been removed to native material, the area will be restored. Restoration will use clean fill from an off-site source to achieve appropriate grades to restore stream and wetland functions including new stream channel, riffles, pools, and grade controls, and to enable re-vegetation and stabilization. Grade control structures may be necessary in certain locations to prevent scour and erosion to the replaced soil materials. The excavated area will be restored to a stable riparian corridor with stable stream banks and floodplain.

6. The excavated area within the Creek will be stabilized with an appropriate wetland and riparian seed mix and appropriate soil for a growing medium. The vegetative community will be established be in accordance with the native ecology present in similar systems.

The excavated upland areas will be replaced with topsoil, plantings, and grass seed and restored to a condition similar to existing conditions, to the extent feasible.

New York State Department of Health Acceptance

The New York State Department of Health (NYSDOH) concurs that the remedy for this site is protective of human health.

Declaration

The selected remedy is protective of human health and the environment, complies with State and Federal requirements that are legally applicable or relevant and appropriate to the remedial action to the extent practicable, and is cost effective. This remedy utilizes permanent solutions and alternative treatment or resource recovery technologies, to the maximum extent practicable, and satisfies the preference for remedies that reduce toxicity, mobility, or volume as a principal element.

October 18, 2017

Date

Robert W. Schick, P.E., Director
Division of Environmental Remediation

RECORD OF DECISION

Dzus Fastener Co., Inc.
West Islip, Suffolk County
Site No. 152033
October 2017

SECTION 1: SUMMARY AND PURPOSE

The New York State Department of Environmental Conservation (the Department), in consultation with the New York State Department of Health (NYSDOH), has selected a remedy for the above referenced site. The disposal of hazardous wastes at the site has resulted in threats to public health and the environment that would be addressed by the remedy. The disposal or release of hazardous wastes at this site, as more fully described in this document, has contaminated various environmental media. The remedy is intended to attain the remedial action objectives identified for this site for the protection of public health and the environment. This Record of Decision (ROD) identifies the selected remedy, summarizes the other alternatives considered, and discusses the reasons for selecting the remedy.

The New York State Inactive Hazardous Waste Disposal Site Remedial Program (also known as the State Superfund Program) is an enforcement program, the mission of which is to identify and characterize suspected inactive hazardous waste disposal sites and to investigate and remediate those sites found to pose a significant threat to public health and environment.

The Department has issued this document in accordance with the requirements of New York State Environmental Conservation Law and 6 NYCRR Part 375. This document is a summary of the information that can be found in the site-related reports and documents.

SECTION 2: CITIZEN PARTICIPATION

The Department seeks input from the community on all remedies. A public comment period was held, during which the public was encouraged to submit comment on the proposed remedy. All comments on the remedy received during the comment period were considered by the Department in selecting a remedy for the site. Site-related reports and documents were made available for review by the public at the following document repository:

West Islip Public Library
Attn: Donna MacGilvray
3 Higbie Lane
West Islip, NY 11795
Phone: (631) 661-7080

A public meeting was also conducted. At the meeting, the findings of the remedial investigation

(RI) and the feasibility study (FS) were presented along with a summary of the proposed remedy. After the presentation, a question-and-answer period was held, during which verbal or written comments were accepted on the proposed remedy.

Comments on the remedy received during the comment period are summarized and addressed in the responsiveness summary section of the ROD.

Receive Site Citizen Participation Information By Email

Please note that the Department's Division of Environmental Remediation (DER) is "going paperless" relative to citizen participation information. The ultimate goal is to distribute citizen participation information about contaminated sites electronically by way of county email listservs. Information will be distributed for all sites that are being investigated and cleaned up in a particular county under the State Superfund Program, Environmental Restoration Program, Brownfield Cleanup Program, Voluntary Cleanup Program, and Resource Conservation and Recovery Act Program. We encourage the public to sign up for one or more county listservs at http://www.dec.ny.gov/chemical/61092.html

SECTION 3: SITE DESCRIPTION AND HISTORY

Location:
The Dzus Fastener Co. site is located at 425 Union Boulevard, West Islip, Suffolk County.

Site Features:
The site is one acre in size and is located in a mixed residential, commercial, and industrial area. The site is triangular in shape and is defined as the portion of the former 4 acre Dzus facility where leaching pools were located. There are no buildings located on the site. The site is bounded by Union Avenue to the south, the former Dzus facility and Beach Street to the west, and Long Island Rail Road tracks to the north. Immediately to the east of the site is Willetts Creek which drains south into Lake Capri, an eight-acre man-made lake. Lake Capri drains into the tidal portion of Willetts Creek through a culvert located under Montauk Highway.

Current Zoning/Use(s):
The company that owns the site changed its name from Dzus Fastener Co. Inc. to DFCI Solutions, Inc. in 2001, but operations at the facility have remained the same since its construction in 1937. In 2015, DFCI ceased operations and moved all equipment out of the facility. The facility is currently vacant and is undergoing RCRA closure. Current zoning for the property (including the site) is industrial-manufacturing and processing.

Historic Use(s):
The Dzus Fastener Co. Inc., produced fasteners and springs from 1932 to 2015. Dzus Fasteners Co. Inc. moved operations to 425 union Boulvard in 1937. Operations included the design and manufacture of ¼-turn fasteners, quick acting latches and panel strips in steel, stainless steel, aluminum and plastic for use in military and commercial aerospace, transportation, electronics, air handling, refrigeration, motor control and computer industries to secure access panels, covers or detachable components. Wastes from metal plating, tumbling, electroplating, chromic acid,

anodizing, and special finishing operations consisted of oils, heavy metals and salts. Leaching pools on-site were used for the disposal of wastes. A Phase I Investigation was completed by the Department in 1984 and a Phase II Investigation report was submitted by Dzus in August of 1990.

Operable Unit(s):
The site has four operable units. An operable unit (OU) represents a portion of a remedial program for a site that for technical or administrative reasons can be addressed separately to investigate, eliminate or mitigate a release, threat of release or exposure pathway resulting from the site contamination.

Operable Unit 1 (OU1) originally encompassed the entire four-acre on-site source area at the eastern end of the former Dzus facility property and the Dzus facility itself. OU1 Record of Decision (ROD) was issued March 1995. In 2016, a boundary modification reduce the site to only the 1 acre stabilized area.

Operable Unit 2 (OU2) included contaminated sediments in Willetts Creek and Lake Capri, and groundwater downgradient of the facility. The OU2 ROD was issued September 1997. A remedial action for OU2 was implemented in 1999.

Operable Unit 3 (OU3) encompasses the area of off-site impacted wetlands located behind a strip mall on Union Boulevard and includes a portion of the Willetts Creek channel upstream of Lake Capri, West Islip School properties, and low-lying residential property recently found to be have been re-contaminated during testing undertaken to monitor the effectiveness of the OU2 remedy

Operable Unit 4 (OU4) encompasses contaminated sediment in Lake Capri. OU4 will be subject to a future remedy decision, which will follow the OU3 action.

Site Geology and Hydrogeology:
Groundwater flow is to the south across the site, parallel to the flow of Willetts Creek and towards Lake Capri, with a depth to groundwater of approximately 10 feet. Willetts Creek is a north-south flowing, slow moving creek, approximately 16-23 feet wide and less than 7 inches in depth. Willetts Creek is located immediately to the east of the Dzus facility, and flows in a southerly direction approximately 4,500 ft to Lake Capri, a privately owned, 8-acre man-made lake. From Lake Capri, the tidal portion of the creek flows another 3,000 ft below the lake to Babylon Cove. The creek is fed by both upstream surface water runoff and groundwater base flow. The creek is divided into an upper and a lower reach. The upper portion is the freshwater reach located upstream of the lake; the lower portion is the tidal channelized reach downstream of the lake.

Operable Unit (OU) Number 03 is the subject of this document.

A Record of Decision was issued previously for OU 01 and 02. A Record of Decision will be issued for OU 04 in the future.

A site location map is attached as Figure 1.

SECTION 4: LAND USE AND PHYSICAL SETTING

The Department may consider the current, intended, and reasonably anticipated future land use of the site and its surroundings when evaluating a remedy for soil remediation. For this site, alternatives (or an alternative) that restrict(s) the use of the site to residential use (which allows for restricted-residential use, commercial use and industrial use) as described in Part 375-1.8(g) were/was evaluated in addition to an alternative which would allow for unrestricted use of the site.

A comparison of the results of the RI to the appropriate standards, criteria and guidance values (SCGs) for the identified land use and the unrestricted use SCGs for the site contaminants is included in the Tables for the media being evaluated in Exhibit A.

SECTION 5: ENFORCEMENT STATUS

Potentially Responsible Parties (PRPs) are those who may be legally liable for contamination at a site. This may include past or present owners and operators, waste generators, and haulers.

The PRPs for the site, documented to date, include:

Dzus Fastener Co., Inc.

Dzus International Limited

DFCI Solutions

The Department has determined that a significant threat is posed to public health and the environment by the current off-site contamination. Previously, the PRPs entered into an agreement in 1994. The DEC performed the RI for OU3 and intends to undertake the necessary remedial action for OU3.

SECTION 6: SITE CONTAMINATION

6.1: Summary of the Remedial Investigation

A Remedial Investigation (RI) has been conducted. The purpose of the RI was to define the nature and extent of any contamination resulting from previous activities at the site. The field activities and findings of the investigation are described in the RI Report.

The following general activities are conducted during an RI:

- Research of historical information,
- Geophysical survey to determine the lateral extent of wastes,

- Test pits, soil borings, and monitoring well installations,
- Sampling of waste, surface and subsurface soils, groundwater, and soil vapor,
- Sampling of surface water and sediment,
- Ecological and Human Health Exposure Assessments.

The analytical data collected on this site includes data for:

- surface water
- soil
- sediment

6.1.1: Standards, Criteria, and Guidance (SCGs)

The remedy must conform to promulgated standards and criteria that are directly applicable or that are relevant and appropriate. The selection of a remedy must also take into consideration guidance, as appropriate. Standards, Criteria and Guidance are hereafter called SCGs.

To determine whether the contaminants identified in various media are present at levels of concern, the data from the RI were compared to media-specific SCGs. The Department has developed SCGs for groundwater, surface water, sediments, and soil. The NYSDOH has developed SCGs for drinking water and soil vapor intrusion. The tables found in Exhibit A list the applicable SCGs in the footnotes. For a full listing of all SCGs see: http://www.dec.ny.gov/regulations/61794.html

6.1.2: RI Results

The data have identified contaminants of concern. A "contaminant of concern" is a hazardous waste that is sufficiently present in frequency and concentration in the environment to require evaluation for remedial action. Not all contaminants identified on the property are contaminants of concern. The nature and extent of contamination and environmental media requiring action are summarized in Exhibit A. Additionally, the RI Report contains a full discussion of the data. The contaminant(s) of concern identified for this Operable Unit at this site is/are:

cadmium chromium

As illustrated in Exhibit A, the contaminant(s) of concern exceed the applicable SCGs for:

- soil
- sediment

6.2: Interim Remedial Measures

An interim remedial measure (IRM) is conducted at a site when a source of contamination or exposure pathway can be effectively addressed before issuance of the Record of Decision.

The following IRM(s) has/have been completed at this site based on conditions observed during the RI.

Soil and Sediment Removal

An IRM was conducted in the vicinity of the footbridges at the Beach Street Middle School and the West Islip High School. The IRM included removal of sediment from within culverts lying beneath the footbridges and in areas slightly upstream and downstream of the footbridges to provide surface water storage capacity during heavy rain events. In addition contaminated soil was removed in the vicinity of the footbridges on the school property and in the right-of-way of the footpath on the residential side of the footbridge. Within the area addressed under this IRM, the soil cleanup objectives (SCOs) for cadmium and chromium for residential-use was achieved on the school property and Sediment SCG for class B sediment for ecological use was achieved in the Creek. This IRM was completed in January 2017.

Fence Installation

A demarcation fence was installed to ensure student foot traffic was gently steered away from areas of concern, while still providing an uninhibited path to local businesses. Mulch was placed on the path to ensure students and residents have an obvious path to follow and to reduce direct contact with soil. A second fence made of netting was installed on school property to prevent sports equipment from entering the wetland area. The fences were was installed in June 2016.

6.3: Summary of Environmental Assessment

This section summarizes the assessment of existing and potential future environmental impacts presented by the site. Environmental impacts may include existing and potential future exposure pathways to fish and wildlife receptors, wetlands, groundwater resources, and surface water.

The Fish and Wildlife Resources Impact Analysis (FWRIA) for OU 03, which is included in the RI report, presents a detailed discussion of the existing and potential impacts from the site to fish and wildlife receptors.

Previous Remedial Actions:
In 1991, based on new information at the time, the site was reclassified from a class 3 to a class 2 (a significant threat). An Interim Remedial Measure (IRM) was conducted in 1991 which resulted in removal of a leach pool at the eastern side of the facility. The site was then divided into two operable units. Operable Unit 1 (OU1) consisted of the leaching pools (the source) and areas of soil contamination at the facility. A Record of Decision (ROD) for OU1 was issued in March 1995. The selected remedy consisted of in-situ stabilization/solidification for on-site soil containing cadmium at concentrations greater than 10 parts per million (ppm). Three areas on the western portion of the facility were excavated and mixed with the soils to be treated on the eastern portion of the facility property. A Final topsoil/asphalt cover was placed on the eastern

portion of the facility, to protect the stabilized area from erosion; and an institutional control, in the form of a deed restriction, was placed on the site.

Operable Unit 2 (OU2) is the off-site contamination, of sediment of Willetts Creek and Lake Capri. A ROD for OU2 was issued in October 1997. The implemented remedy included dredging, dewatering and off-site disposal of approximately 12,000 cubic yards of contaminated sediment from Lake Capri; excavation and off-site disposal of approximately 100 cubic yards of sediment from Willetts Creek, corresponding to levels of cadmium exceeding 9 ppm; a long-term monitoring program to evaluate the effectiveness of the on-site remedy and to verify that any existing groundwater plume does not impact public health or environment.

Post Remedial Monitoring:
The remedy for OU-1 (stabilization and asphalt cover) has been shown to be effective.
Regarding OU2, monitoring of the remedy has been performed since its completion in 2009. In 2014, investigation of the wetland sediments and soils near the upper end of Willetts Creek found significant levels of cadmium in soils as high as 8,200 ppm. Based upon this new information, an Operable Unit (OU-3) was created that encompasses these areas. In 2016, OU3 RI field investigation activities included evaluation of surface and subsurface floodplain soils at private residences and on the school properties adjacent to Willetts Creek, characterization of sediment in the tidal portions of Willetts Creek, characterization of fill material in a shopping plaza, collection of additional sediment samples to fill data gaps related to the nature and extent of cadmium and chromium in Willetts Creek, and completion of visual inspection and sampling of select outfalls and culvert pipes located along the length of Willetts Creek. It appears this migration of cadmium and chromium are from a previous unidentified area that was effected by recent significant rain events, such as, Superstorm Sandy

6.4: Summary of Human Exposure Pathways

This human exposure assessment identifies ways in which people may be exposed to site-related contaminants. Chemicals can enter the body through three major pathways (breathing, touching or swallowing). This is referred to as *exposure*.

Insufficient information exists to evaluate the potential for contact with contaminants on the adjacent DCFI property and will be addressed under another State program. Since the site is covered by an asphalt cover, people will not come into contact with site related soil and groundwater contamination on-site unless they dig below this cover. People are not drinking contaminated groundwater as the area is served by a public water supply that is not affected by this contamination. People may come into contact with contaminants present in sediments and floodplain soils of Willetts Creek and Lake Capri upon entering or exiting the Creek/Lake and adjacent wetland and floodplain areas.

6.5: Summary of the Remediation Objectives

The objectives for the remedial program have been established through the remedy selection process stated in 6 NYCRR Part 375. The goal for the remedial program is to restore the site to pre-disposal conditions to the extent feasible. At a minimum, the remedy shall eliminate or

mitigate all significant threats to public health and the environment presented by the contamination identified at the site through the proper application of scientific and engineering principles.

The remedial action objectives for this site are:

Soil

RAOs for Public Health Protection

- Prevent ingestion/direct contact with contaminated soil.

RAOs for Environmental Protection

- Prevent impacts to biota from ingestion/direct contact with soil causing toxicity or impacts from bioaccumulation through the terrestrial food chain.

Sediment

RAOs for Public Health Protection

- Prevent direct contact with contaminated sediments.

RAOs for Environmental Protection

- Prevent impacts to biota from ingestion/direct contact with sediments causing toxicity or impacts from bioaccumulation through the marine or aquatic food chain.
- Restore sediments to pre-release/background conditions to the extent feasible.

SECTION 7: SUMMARY OF THE SELECTED REMEDY

To be selected the remedy must be protective of human health and the environment, be cost-effective, comply with other statutory requirements, and utilize permanent solutions, alternative technologies or resource recovery technologies to the maximum extent practicable. The remedy must also attain the remedial action objectives identified for the site, which are presented in Section 6.5. Potential remedial alternatives for the Site were identified, screened and evaluated in the feasibility study (FS) report.

A summary of the remedial alternatives that were considered for this site is presented in Exhibit B. Cost information is presented in the form of present worth, which represents the amount of money invested in the current year that would be sufficient to cover all present and future costs associated with the alternative. This enables the costs of remedial alternatives to be compared on a common basis. As a convention, a time frame of 30 years is used to evaluate present worth costs for alternatives with an indefinite duration. This does not imply that operation, maintenance, or monitoring would cease after 30 years if remediation goals are not achieved. A summary of the Remedial Alternatives Costs is included as Exhibit C.

The basis for the Department's remedy is set forth at Exhibit D.

The selected remedy is referred to as the excavation of soils and sediments in Willets Creek wetland areas remedy.

The estimated present worth cost to implement the remedy is $12,570,000. The cost to construct the remedy is estimated to be $12,500,000 and the estimated average annual cost is $4,000.

The elements of the selected remedy are as follows:

1. Pre-design investigation to refine excavation boundaries.

2. Clearing, chipping, and grubbing of woody material and subgrade preparation of the site would be conducted.

3. Soil and Sediment removal:
- removal of bank soil that exceeds cadmium and chromium residential use SCOs
- removal of sediment to native material in the zone of impact. The zone of impact is the portion of Willetts Creek (and associated floodplain) where cadmium and chromium were consistently observed above residential SCOs for soil and for sediment above the lowest end of the Class B SGVs- an indication of a potential for moderate ecological impact.

This zone extends from behind the shopping plaza (CR4) downstream to approximately 500 ft. south of the footbridge at Edmore Lane (CR36).

4. The excavated area would be restored to a stable riparian corridor with stable stream and floodplain wetlands. A restoration plan will be included in the remedial design to specify the details of the restoration. Wetland habitat will be restored to the maximum extent possible while allowing sufficient flood capacity and appropriate stream flow. Details regarding substrates, plantings, and seeding for restoration will be included in the restoration plan

5. When confirmation sample results indicate all soil containing cadmium and chromium exceeding residential use SCOs, and all sediment within the area of impact have been removed to native material, the area will be restored. Restoration will use clean fill from an off-site source to achieve appropriate grades to restore stream and wetland functions including new stream channel, riffles, pools, and grade controls, and to enable re-vegetation and stabilization. Grade control structures may be necessary in certain locations to prevent scour and erosion to the replaced soil materials. The excavated area will be restored to a stable riparian corridor with stable stream banks and floodplain.

6. The excavated area within the Creek will be stabilized with an appropriate wetland and riparian seed mix and appropriate soil for a growing medium. The vegetative community will be established be in accordance with the native ecology present in similar systems.

The excavated upland areas will be replaced with topsoil, plantings, and grass seed and restored to a condition similar to existing conditions, to the extent feasible.

Exhibit A

Nature and Extent of Contamination

This section describes the findings of the Remedial Investigation for all environmental media that were evaluated. As described in Section 6.1, samples were collected from various environmental media to characterize the nature and extent of contamination.

For each medium for which contamination was identified, a table summarizes the findings of the investigation. The tables present the range of contamination found at the site in the media and compares the data with the applicable SCGs for the site. The contaminants are metals and the media are soil and sediment. For comparison purposes, the SCGs are provided for each medium that allows for unrestricted use. For soil, if applicable, the Restricted Use SCGs identified in Section 4 and Section 6.1.1 are also presented.

Operable Unit 3 (OU3) is defined as the off-site Willetts Creek channel and creek bank including a low lying floodplain area located behind a strip mall on Union Blvd.

Soil

Soil samples were collected at 23 locations from areas along the Creek on the Beach Street Middle School and West Islip Senior High School properties, as well as 197 locations on 39 adjacent residential properties and two commercial properties. Soil was collected from surface soil, sub-surface soil, and gardens, if present. Soil was also collected from the rear of the commercial properties adjacent to the floodplain area from the fill-sand interface to characterize the fill material used. Contaminated surface soil (defined as the 0 to 2 inch range) was found in limited areas on the banks of Willetts Creek in the vicinity of the footbridges leading to both schools, low lying residential properties and in the low lying wetland area. Sub-surface soil (defined as the 6 inch to 1 foot range) contamination was discovered along the banks of Willetts Creek in the vicinity of moderately low lying residential properties where fill was brought in to raise the property level to reduce flooding and in the low lying floodplain area.

Table 1 – Soil

Detected Constituents	Concentration Range Detected (ppm)[a]	Unrestricted SCG[b] (ppm)	Frequency Exceeding Unrestricted SCG	Residential Use SCG[c] (ppm)	Frequency Exceeding Residential SCG
Cadmium	1.4-84	2.5	31 of 271	2.5	31 of 271
Chromium, Trivalent	5.5-130	30	9 of 271	36	7 of 271

a - ppm: parts per million, which is equivalent to milligrams per kilogram, mg/kg, in soil.
b - SCG: Part 375-6.8(a), Unrestricted Soil Cleanup Objectives.
c - SCG: Part 375-6.8(b), Restricted Use Soil Cleanup Objectives for the Protection of Public Health for Residential Use, unless otherwise noted.

The site related contaminants identified in the soil which are considered the primary contaminants of concern, to be addressed by the remedy selection process are cadmium and trivalent chromium. Contamination is limited to low lying soils immediately adjacent to Willetts Creek. Contamination that was discovered on the Beach Street Middle school property was removed during the IRM-Maintenance of the Beach Street Middle School footbridge. Contamination remaining in residential yards will be addressed with the selected remedy.

Sediment

Sediment samples were collected in Willets Creek from Union Blvd. to Lake Capri along the Willetts Creek channel and low lying wetland. Samples were collected from the sediment surface to a depth where the sediment-native sand interface was encountered. Sediment was also collected from all identified outfall pipes draining into Willetts Creek in this area. Contaminated sediment was found within the Willetts Creek channel downgradient of the low lying floodplain area to the West Islip High School footbridge. The most contaminated sediment was found in the upper 1-foot interval, with a maximum depth of 6 feet in limited areas.

Table 2 – Sediment

Detected Constituents	Concentration Range Detected (ppm)[a]	SCG[b] Class A (ppm)	Frequency Exceeding Class A	SCG[c] Class B (ppm)	Frequency Exceeding Class B	SCG[d] Class C (ppm)	Frequency Exceeding Class C
Inorganics							
Cadmium	0.61-8,200	1	214/270	1-5	151/270	5	151/270
Chromium, Trivalent	0.43-60	43	6/32	43-110	0/31	110	0/31

a - ppm: parts per million, which is equivalent to milligrams per kilogram, mg/kg, in sediment.
b - SCG: Class A-The Department's Screening and Assessment of Contaminated Sediment (June 2014).
c - SCG: Class B-The Department's Screening and Assessment of Contaminated Sediment (June 2014).
d - SCG: Class C-The Department's Screening and Assessment of Contaminated Sediment (June 2014).

Based on the findings of the Remedial Investigation, the disposal of hazardous waste has resulted in the contamination of sediment. The site contaminants identified in the sediment which are considered the primary contaminants of concern, to be addressed by the remedy selection process are cadmium and trivalent chromium.

Sewer and outfall inspection

All outfalls, which were identified during the Willetts Creek sediment sampling potion of the remedial investigation, were sampled and traced back to the origins. It was discovered that none of the outfall encountered contributed to the contamination of Willetts Creek.

Exhibit B

Description of Remedial Alternatives

The following alternatives were considered based on the remedial action objectives (see Section 6.5) to address the contaminated media identified at the site as described in Exhibit A.

Alternative 1: No Action

The no action alternative is evaluated as a procedural requirement and as a basis for comparison. This alternative would leave the area in its present condition.

Present Worth: *$0*
Capital Cost: *$0*
Annual Costs: *$0*

Alternative 2: Site Management

The Site Management Alternative requires modification to the existing Site Management plan for additional sampling within Willetts Creek. The expanded sampling to include sediment and surface water in Willetts Creek to monitor the migration of contaminated sediment.

This alternative would leave the site in its present physical condition, but would address the RAO "prevent ingestion/direct contact with contaminated soil/sediment" through engineering controls (e.g., fence). Additionally, site perimeter controls and access points would be installed, and warning signage posted.

Present Worth: *$25,000*
Capital Cost: *$25,000*
Annual Costs: *$0*

Alternative 3: Excavation of Soil to residential use SCOs and Sediment in zone of impact to native material with Off-site Disposal

This alternative is aimed at removing soil that exceeds cadmium and chromium residential use SCOs (for private residences, school properties and commercial property) and removing sediment to native material in the zone of impact. The zone of impact is the portion of Willetts Creek (and associated floodplain) where cadmium and chromium were observed above Residential SCOs for soil and for sediment above the lowest end of the Class B SGVs– an indication of a potential for moderate ecological impact. This zone extends from behind the shopping plaza (CR4) downstream to approximately 500 ft. south of the footbridge at Edmore Lane (CR36).

Excavation is a common remedy used to remove contaminated soil and sediment impacted by contaminants from a source area. This approach can be effective at eliminating exposure and

preventing transport of contaminants. *Ex situ* physical/chemical amendment (e.g., Portland cement) to help facilitate handling and off-site disposal of wastes. It requires addition of amendments that decrease water content and mobility of contaminants. The excavated area would be restored to a stable riparian corridor with stable stream and floodplain.

This alternative could be implemented as follows:

- Pre-design investigation to refine excavation boundaries.
- Clearing, chipping, and grubbing of woody material and subgrade preparation of the site would be conducted.
- Stream may be diverted by pipe diversion of base flow with storm capacity of Willetts Creek. Dewatering and maintenance of flow measures would be utilized to create a stable work area, especially when excavating below the water table. Options for water management include use of temporary storage tanks for off-site disposal or onsite treatment for discharge. Water management can be minimized by planning for excavation during late summer when there are favorable hydrologic situations such as low creek flows and groundwater levels.
- Approximately 32,645 cy of contaminated sediment and soil covering 5.7 acres averaging a depth of 3 feet would be excavated from the area. Excavated sediment would be stockpiled onsite at a staging area for gravity dewatering and stabilized on or near the area of excavation using Portland cement or a similar product to meet paint filter test requirements.

When confirmation sample analytical results indicate all soil containing cadmium and chromium exceeding Residential Use SCOs and all sediment and soil within the area of impact have been removed, the site would be restored with the following:

- Clean fill from an off-site source meeting the requirements of 6 NYCRR Part 375-6.7(d) would be used to achieve appropriate grades to restore stream and wetland functions including new stream channel, riffles, pools, and grade controls, and enable re-vegetation and stabilization. Grade control structures may be necessary in certain location to prevent scour and erosion to the replaced soil materials.
- The excavated and disturbed area within the Creek would be stabilized with an appropriate wetland and riparian seed mix and topsoil for growing medium. It is recommended that any vegetative community established be in accordance with the native ecology present in similar systems.
- Clean fill from an off-site source meeting the requirements of 6 NYCRR Part 375-6.7(d) will be brought in to replace the excavated soil and establish the designed grades at the upland properties, and if appropriate top soil and grass seed.
- Monitoring as part of the Dzus site management plan to assure the restoration is successful and the remedy remains protective.

Present Worth: *$12,570,000*
Capital Cost: *$12,500,000*
Annual Costs: *$4,000*

Alternative 4: Excavation of Soil to Applicable Use Based SCO and Sediment to Class B SCG with Off-site Disposal

The fourth potential remediation alternative evaluated is excavation of soil that exceeds the applicable use based SCO (residential use for private residences, restricted residential for school properties and commercial use for commercial property in a near-by shopping plaza), and sediment that exceeds the lower of residential use soil cleanup objectives for cadmium and chromium and Class B SCG and off-site disposal at an authorized facility. For Alternative 4, contamination will remain in place this alternative depends on agreement with property owners to allow access for the continued monitoring of the remaining contamination, modification the Dzus Site Management Plan to address ongoing monitoring of the OU3 area, and the implementation of Deed Restrictions on private property.

This alternative would be implemented in the same way as Alternative 3, with differences for handling of soil highlighted below:

- Approximately 14,003 cy of contaminated sediment covering 3.9 acres would be excavated from the site to a 6 ft maximum depth. Excavated soil/sediment would be stockpiled on or near the area for staging, gravity dewatering and stabilization using Portland cement or a similar product to meet paint filter test requirements.
- Approximately 900 cy of contaminated soil would be excavated from low lying residential properties along Willetts Creek, and Willetts Creek bank. A demarcation layer of geotextile would be placed on top of the remaining soil contamination (exceeding restricted use SCO) before backfilling with clean fill from an off-site source. Grade control structures may be necessary in certain locations to prevent scour and erosion to the replaced soil materials.

Present Worth: *$7,150,000*
Capital Cost: *$7,080,000*
Annual Costs: *$4,000*

Alternative 5: Excavation with multi-media Capping of Soil and Sediment

The fifth potential remediation alternative evaluated is capping of impacted soil and sediment. Capping provides a physical barrier to contain the contaminated media to reduce potential exposures. In this alternative, contaminated soil and sediment would be covered by clean sand, soil, cobble, gravel, top soil, and/or organic matter to recreate a floodplain surface and creek system. Multi-media cap effectively address RAOs and is effective in long-term source control unless inorganics are soluble and upwelling is substantial. In the case of significant upwelling of groundwater, an alternative material might be needed to minimize movement of contaminants upward through the cap. Installation of a cap in residential areas will require 2 ft of excavation, and 1 ft of excavation in commercial areas. For Alternative 5, contamination will remain in place this alternative depends on agreement with property owners to allow access for the continued monitoring of the remaining contamination, modification the Site Management Plan, and the implementation of Deed Restrictions on private property. Since the creek profile cannot be raised, capping will require excavation of 1.5 ft of contaminated sediment for the creek. This

approach will remove contamination in areas with shallow contamination, which is a significant portion of the creek, and consequently will not require capping for those areas; however, backfill will need to be used to return the creek bed to its original contours

This alternative will be implemented in the same way as Alternatives 3 and 4, with differences highlighted below:

- Approximately 9,928 cy of contaminated sediment/soil will be excavated from the Willetts Creek and Creek bank to allow for cap placement without altering the site bathymetry and topography. Excavated sediment and soil would be stockpiled at an adjacent or nearby staging area for gravity dewatering and amended using Portland cement or a similar product to meet paint filter test requirements
- Areas with soil contamination would be capped with clean common fill material and 6 inches of top soil. The residential areas will have 18 inches of common fill and commercial areas will have 6 inches of common fill.
- Multimedia capping would be installed with surface materials and contours conforming to the restored condition of Willetts Creek through the remediation area, including new stream channel, riffles, pools, and grade controls to ensure the long-term stability of the multimedia cap. The cap would be underlain by a protective layer of geotextile, to define the lower limit of the cap in the event of any future excavation in the area. This geotextile underlayment is typically non-woven geotextile and is orange in color to serve as a warning of the contaminated materials below.

Once excavation and cap placement are completed, the site would be restored with the following:

- The site would be stabilized with an appropriate wetland and riparian seed mix to stabilize the capped and excavated areas. Topsoil amendment may be necessary. It is recommended that any vegetative community established be in accordance with the native ecology.
- Additionally, the creation of an emergent or scrub-shrub system would decrease the likelihood of the establishment of large trees, which through flood flows, wind or other natural processes could uproot, damaging the multi-media capping system and risking exposure of contaminated sediments beneath.

Following completion, the cap would be inspected semi-annually for the first 5 years and annually thereafter. The cap inspection will serve to monitor effectiveness of the cap and identify any areas requiring repair.

Present Worth: *$6,215,000*
Capital Cost: *$5,540,000*
Annual Costs: *$4,000*

Exhibit C

Remedial Alternative Costs

Remedial Alternative	Capital Cost ($)	Annual Costs ($)	Total Present Worth ($)
1. No Action	$0	$0	$0
2. Site Management	$25,000	$0	$25,000
3. Excavation of Soil to residential Use SCOs and Sediment in zone of impact to native with Off-site Disposal	$12,500,000	$4000	$*12,570,000*
4. Excavation of Soil to Restricted Use SCOs and Sediment to Class B SCGs with Off-site Disposal	$7,080,000	$4,000	$*7,150,000*
5. Multi-media Capping of Soil and Sediment	$5,540,000	$4,000	$*5,600,000*

Exhibit D

SUMMARY OF THE SELECTED REMEDY

The Department has selected Alternative 3, Excavation of Soil to residential use SCOs and Sediment to native material with Off-site Disposal, as the remedy for this site. Alternative 3 would achieve the remediation goals for the site by removal of approximately 33,000 cubic yards of sediment from Willetts Creek and soil from residential yards and commercial property Upon competition of the remedy the above listed areas will be restored. The elements of this remedy are described in Section 7. The selected remedy is depicted in Figure 2.

Basis for Selection

The selected remedy is based on the results of the RI and the evaluation of alternatives. The criteria to which potential remedial alternatives are compared are defined in 6 NYCRR Part 375. A detailed discussion of the evaluation criteria and comparative analysis is included in the FS report.

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

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

Alternatives 1 and 2 do not meet this criterion. Alternative 2 moderately fulfills this criterion by protecting public health by the modification of the Dzus Site Management Plan to address OU3. Alternative 3 fulfill this criterion by removing the contaminated soil/sediment exceeding applicable SCGs. Alternative 4 moderately fulfills this criterion by removing contamination to the restricted residential SCGs Alternative 5 fulfills this criterion by closing off the soil/sediment exposure pathway; and thereby, preventing human and biota contact with remaining contamination with proper site management.

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

Alternatives 1 and 2 do not meet this criterion. Alternatives 3 meets this criterion by removing cadmium and chromium in soil and sediment exceeding residential use SCOs and by removing sediment to native material in the zone of impact.

The next six "primary balancing criteria" are used to compare the positive and negative aspects of each of the remedial strategies.

3. Long-term Effectiveness and Permanence. This criterion evaluates the long-term effectiveness of the remedial alternatives after implementation. If wastes or treated residuals

remain on-site after the selected remedy has been implemented, the following items are evaluated: 1) the magnitude of the remaining risks, 2) the adequacy of the engineering and/or institutional controls intended to limit the risk, and 3) the reliability of these controls.

Alternatives 3 will fulfill this criterion because contaminants at concentrations exceeding unrestricted SCOs would be permanently removed from the site. Alternative 4 and 5 will fulfill this criterion but would require long-term maintenance of cap and monitoring as the impacted soil/sediment would remain on site.

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

Alternatives 3 will fulfill this criterion by removal of concentration of contamination exceeding SCOs. Alternative 4 and 5 will fulfill this criterion by modest removal and containment of contaminated soil/sediment. Alternatives 3 reduce the toxicity, mobility and volume, 4 and 5 reduces the volume to a degree, and mobility of what is left under the cap.

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

The alternatives each pose a limited increase in short-term risks to the public during excavation/dredging, grading, treatment, and other site activities through the noise, increased truck traffic; and ground disturbance, these effects can be reduced by limiting hours of operations to during school hours, where students will within the school building and away from these activities and use of designated truck routes. Workers can potentially be exposed to contaminated media during excavation and/or treatment activities involved. Risks can be minimized by implementing health and safety controls, including the use of appropriate personal protective equipment and community air monitoring and engineering controls. These alternatives will pose increased short-term risks to the environment in the form of site disturbances. These disturbances will be from tree removal and stream channel changes. This risk will be reduced though a comprehensive site restoration plan detailing creek and site restoration to a stable riparian corridor. Alternatives 3 and 4 have short-term impacts, though Alternative 5 has fewer, because not all the sediment is disturbed.

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

All alternatives are implementable and have been used nationally, although implementing Alternatives 2-5 will present challenges due to the proximity of the schools and residences which will impact timing and efficiency of the implementation.

7. Cost-Effectiveness. Capital costs and annual operation, maintenance, and monitoring costs are estimated for each alternative and compared on a present worth basis. Although cost-effectiveness is the last balancing criterion evaluated, where two or more alternatives have met the requirements of the other criteria, it can be used as the basis for the final decision.

Alternative 4 is more cost-effective. Alternative 3 is the most expensive alternative, however, Alternative 3 provides the most protection to public health and the environment. Alternative 5 is at a lesser cost but is also less effective.

8. Land Use. When cleanup to pre-disposal conditions is determined to be infeasible, the Department may consider the current, intended, and reasonable anticipated future land use of the site and its surroundings in the selection of the soil remedy.

Under Alternative 3, the land use will be returned to current use and would allow for higher use if desired in the areas of the current commercial and school properties. Under Alternatives 4 and 5, some of impacted media would remain on site, so the land use would be restricted.

The final criterion, Community Acceptance, is considered a "modifying criterion" and is taken into account after evaluating those above. It is evaluated after public comments on the Proposed Remedial Action Plan have been received.

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

Alternative 3 has been selected because, as described above, it satisfies the threshold criteria and provides the best balance of the balancing criterion.

Figure 1: Site Lacation Map

July 2017

Site Number 152033

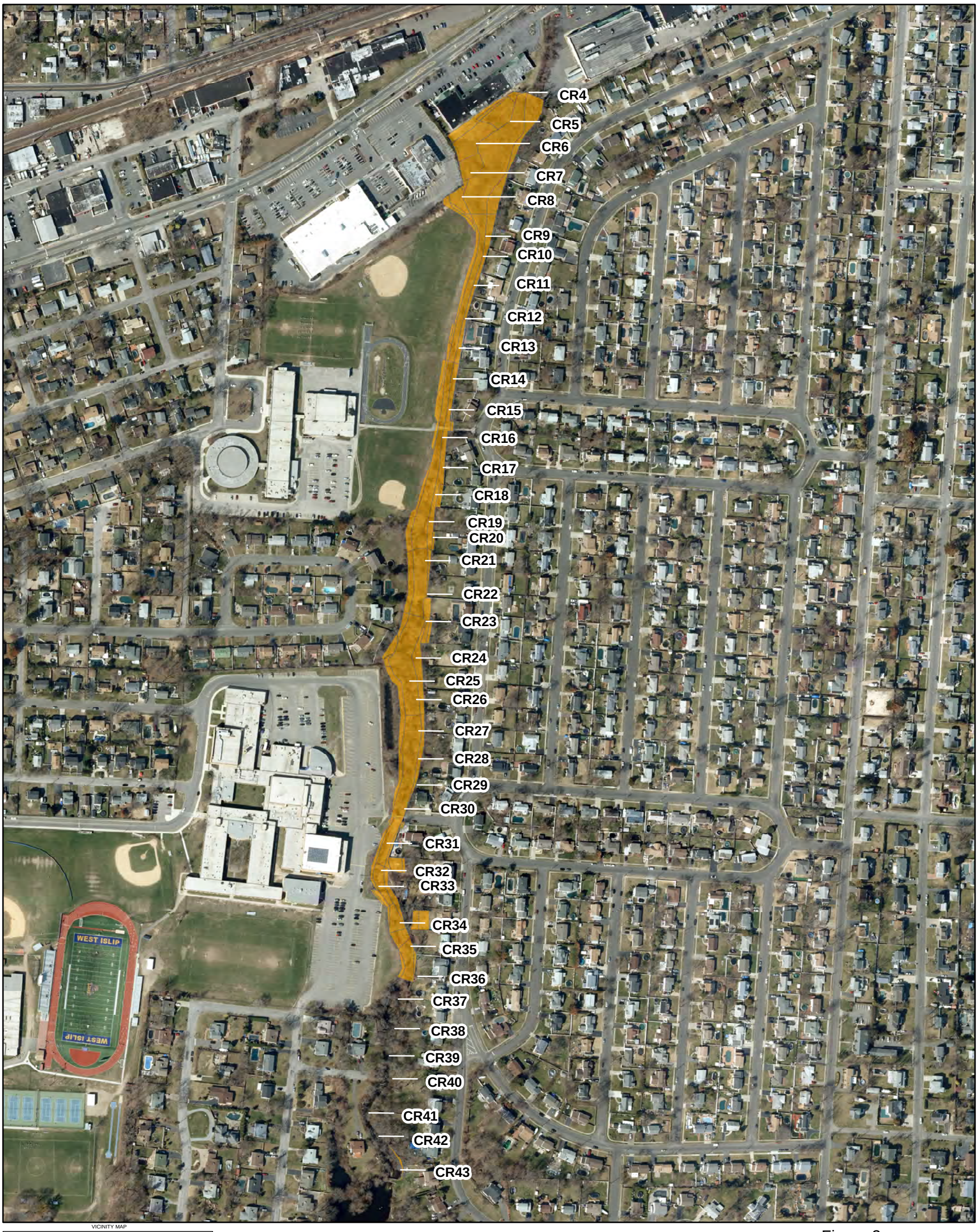
West Islip, NY

N

0 462.5 925 1,850 2,775 3,700 Feet

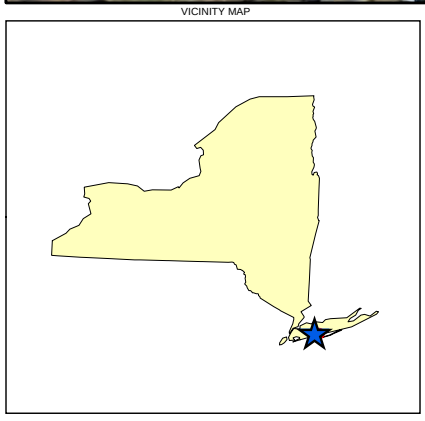
NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

Site Managed by: Payson Long
Map Created by: Payson Long



G:\Projects\State&Local\NYSDEC - D007624\D007624 - Work Assignments\14907.33 - Dzus Fastner Company, Inc\GIS\MXD\FS\Comments\Figure4_AllExcavations_ChromCad.mxd

VICINITY MAP



0 150 300
Feet

N

Legend

Zone of Impact

Figure 2
Zone of Impact
Operable Unit 03

Dzus Fastener Company, Inc.
West Islip, NY

Note:
Zone of Impact is defined as the bounds of sediment area covering class A SCG exceedances
Residential Use Soil Cleanup Objective for Cadmium (SCO)= 2.5 mg/kg and for Chromium= 36 mg/kg
as determined by NYSDEC 6 NYCRR Table 375-6.8(b)
Class A sediment Standards, Criteria and Guidance (SCG) for
Cadmium= < 1 mg/kg and Chromium = <43 mg/kg for low risk to aquatic life
as determined by NYSDEC Technical Guidance for Screening and Assessment of Contaminated Sediment.

Map Date: 4/10/2017
Source: ESRI, 2011
Projection: NAD83 State Plane New York Long Island

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation | EA

APPENDIX A

Responsiveness Summary

RESPONSIVENESS SUMMARY

Dzus Fastener Co., Inc.
Operable Unit Number 03: Willetts Creek Wetland Areas
State Superfund Project
West Islip, Suffolk County
Site No. 152033

The Proposed Remedial Action Plan (PRAP) for the Dzus Fastener Co., Inc. Operable Unit Number 03: Willetts Creek Wetland Areas was prepared by the New York State Department of Environmental Conservation (the Department) in consultation with the New York State Department of Health (NYSDOH) and was issued to the document repositories on July 21, 2017. The PRAP outlined the remedial measure proposed for the contaminated sediment and soil associated with Willetts Creek.

The release of the PRAP was announced by sending a notice to the public contact list, informing the public of the opportunity to comment on the proposed remedy.

A public meeting was held on August 9, 2017, which included a presentation of the remedial investigation/feasibility study (RI/FS) for the Dzus Fastener Co., Inc. Operable Unit Number 03: Willetts Creek Wetland Areas as well as a discussion of the proposed remedy. The meeting provided an opportunity for citizens to discuss their concerns, ask questions and comment on the proposed remedy. These comments have become part of the Administrative Record for this site. The public comment period for the PRAP ended on August 21, 2017.

This responsiveness summary responds to all questions and comments raised during the public comment period. The following are the comments received, with the Department's responses:

Comments from the Dzus Fastener OU3 PRAP public meeting August 9, 2017

COMMENT 1: Who owns the creek?

RESPONSE 1: The Department is reviewing ownership of Willetts Creek. Once the owners have been identified access agreements will be obtained.

COMMENT 2: Once the cleanup is completed who will inspect and maintain the creek?

RESPONSE 2: Any necessary monitoring or maintenance responsibility for Willetts Creek after the remedy is implemented are expected to be very limited. DEC will work with the owner one identified (see Response 1) on any needed actions. The Department will periodically monitor sediments in the creek to ensure the effectiveness of the remedy.

COMMENT 3: Does NYSDOH have any update on the cancer study that was requested by the 22 women who had breast cancer and live on dead end streets along the creek? Is there a cancer map?

RESPONSE 3: There have been no updates to the 1996 NYS Department of Health cancer incidence study. Information about more recent cancer diagnoses is available at: https://www.health.ny.gov/statistics/cancer/environmental_facilities/mapping/

COMMENT 4: How is a dog affected when they eat the grass in the backyards along the creek?

RESPONSE 4: Individuals with questions about how their pets might be affected by ingesting contaminated soil or grass growing in contaminated soil may wish to discuss the matter with their veterinarian.

COMMENT 5: When is the next phase of the project going out to bid?

RESPONSE 5: Remedial action is expected to commence in the late Summer or early Fall of 2018. The bid process will be completed prior to the start of the remedial action.

COMMENT 6: What was found in the tidal area of the creek south of Montauk Highway?

RESPONSE 6: Of the two samples collected in the Willetts Creek Tidal area, results were 3.5 parts per million (ppm) and 6.3 ppm for cadmium. The brackish water standard for cadmium is 5 ppm.

COMMENT 7: Where were the sediment samples taken in the tidal area of the creek?

RESPONSE 7: The samples were collected from either side of the outfall weir from Lake Capri.

COMMENT 8: Are there any plans to check the marine life in the Bay?

RESPONSE 8: There are no plans to check the marine life in the bay.

COMMENT 9: Is there more recent monitoring well data than 2012?

RESPONSE 9: Yes, the most recent groundwater monitoring report is dated May 2016. There are also groundwater monitoring reports dated March 2015 and November 2013.

COMMENT 10: How can we see it?

RESPONSE 10: The West Islip Public Library has been designated as a document repository. All site related documents are available for review there.

COMMENT 11: What will happen to the flow in the creek when you do your remediation of the creek?

RESPONSE 11: Changes to the flow of Willetts Creek are generally not anticipated, but there will be some alterations to the creek during the removal and restoration process. The details will be determined through the design process.

COMMENT 12: When the sediment removal of the creek was just done there was dust and runoff coming from the areas being worked on. Will somebody be watching this future work better?

RESPONSE 12: During the interim remedial measure completed at the two footbridges, a community air monitoring plan (CAMP) was in effect with upwind and downwind air monitoring stations in place during all intrusive work. No exceedances were detected. There will be a CAMP in effect with provisions for dust control and air monitoring, during the future work as well as storm water management and erosion control measures. Also, the Department anticipates full time oversight of the remedial activities.

COMMENT 13: Is there a ground water plume and where is it?

RESPONSE 13: Previous groundwater data, obtained annually since 2006, shows that cadmium is in groundwater downgradient from the site. Levels of cadmium in groundwater have been decreasing, especially since 2012. This decrease in groundwater contamination suggests that the plume is now separated from the on-site source area. This separation indicates that the on-site stabilized area is effectively containing the contaminants. It is expected that contaminant levels in groundwater will continue to decrease over time. Data from wells near Willetts Creek indicate that shallow groundwater may enter the creek, but current cadmium concentrations are very near the groundwater standard and therefore unlikely to impact the creek sediments or surface water in the future. Deeper groundwater is slightly more contaminated than the shallow groundwater. In the deeper zone, cadmium may be moving with groundwater beneath the creek, however there is no exposure pathway since residents are on public water.

COMMENT 14: Are people's irrigation wells affected and are they spreading the contamination?

RESPONSE 14: There are no known irrigation wells within the footprint of the plume.

COMMENT 15: What is the next step in this process?

RESPONSE 15: Upon issuance of the Record of Decision (ROD), the next steps are to complete the design, procure a remedial contractor and implement the remedial program.

COMMENT 16: Where will the excavated sediments go?

RESPONSE 16: Sediments will be characterized and properly disposed of at a permitted facility.

COMMENT 17: Is there more remediation at the Dzus site itself?

RESPONSE 17: Once the RCRA closure is complete, there is no further remediation expected. However, the stabilized area will continue to be monitored and maintained through a site management program. There will be additional investigation of Lake Capri sediments, which is expected to result in a future ROD.

COMMENT 18: Will DEC or somebody have warning signs up about not eating fish from the lake or crabs?

RESPONSE 18: Currently on the fence along Montauk Highway, there is signage warning fishermen to limit intake of fish from Lake Capri.

COMMENT 19: Should people be eating crabs or commercial crabbing by the tidal section of Willetts Creek?

RESPONSE 19: Based on our published advisory information for Lake Capri and Long Island South Shore waters, our general protective approach for children and women under the age of 50, and our consideration of connected waterways with specific advice, NYS DOH recommends for the tidal portion of Willetts Creek that:

- women under 50 and children under 15 should not eat any crab tomalley ("green stuff", hepatopancreas, mustard, liver), and should discard crab cooking liquid because cadmium, PCBs, and other contaminants concentrate there. In addition, they should also not eat any crab muscle meat from the tidal portion of Willetts Creek.
- men over 15 and women over 50 should also not eat any crab tomalley, and should discard crab cooking liquid. We do not have any restrictive advice on consumption of crab muscle tissue for this group from this water.

COMMENT 20: Was there surface water samples taken in the creek and lake?

RESPONSE 20: Surface water and sediment samples are collected during each groundwater sampling event. Six surface and collocated sediment sample locations have been monitored during each of the historic sampling events.

COMMENT 21: Where is this data?

RESPONSE 21: The data is included in the Groundwater Sampling reports. These reports are available for review at the document repository, the West Islip Public Library located at 3 Higbie lane, West Islip.

COMMENT 22: Why is the soil in my backyard contaminated now and not in 1994 when it was previously sampled?

RESPONSE 22: Contamination was discovered in a wetland adjacent to Willetts Creek and it is believed that this contamination became mobilized during recent high water events.

COMMENT 23: Will the hot spot of contamination be removed in my backyard?

RESPONSE 23: Contamination located in backyards adjacent to Willetts Creek, from a point located behind the strip mall located south of Union Blvd (CR4) to a point located south of the West Islip Senior high school footbridge (CR36) will be removed. A signed Access Agreement must be in place in order to complete the removal of contaminated soil.

COMMENT 24: Has there been or will there be a health study done in this area?

RESPONSE 24: A NYS Department of Health study published in 1996 evaluated the incidence of cancer in the neighborhoods surrounding the Dzus Fasteners site over a 20-year period.

COMMENT 25: Have the two schools been notified of the problem and the cleanup that is needed?

RESPONSE 25: The West Islip School District, through the Superintendent and Head of Grounds, have been in constant communication with the Department throughout the entire remedial investigation process. The District office has been disseminating information to the appropriate schools as well as district wide. The Department and the West Islip School District will remain in communication throughout the remedial design and remedial action phases of Operable Unit 3, as well as throughout the entire process of Operable Unit 4.

COMMENT 26: How is DEC going to handle the residents who did not respond to access requests to do samples on their property?

RESPONSE 26: A door knock campaign will be initiated. The Department also encourages residents in the area to pass on information to neighbors along Willetts Creek. The Department has also requested the assistance of local elected officials and civic organizations.

COMMENT 27: Are you just going to skip over them and leave contamination behind again?

RESPONSE 27: The Department will make good faith efforts to include every property in the remedial program, but ultimately it is up to the property owner whether or not to grant access for work to be completed.

COMMENT 28: If you just remove the soil, won't that divert the water?

RESPONSE 28: Initially, by the removal of soil, the course of the creek will be deepened. Water from upstream may be temporarily diverted in order to perform the removal work in drier conditions. However, the remedy contemplates creek restoration to maintain a viable stream habitat.

COMMENT 29: Isn't the contamination in the groundwater and removing the soil will not solve the problem.

RESPONSE 29: The majority of contamination is located in soil and sediments. Cadmium and chromium strongly adhere to soil and sediment particles. Once the soils and sediments are removed/remediated, recontamination from groundwater is not expected.

COMMENT 30: How is DEC treating the groundwater?

RESPONSE 30: The Department is periodically monitoring groundwater. The latest groundwater monitoring event was May 2016.

Comments received via email

COMMENT 31: You mentioned three classes of creek health A B and C. Which is Willetts Creek and what does this mean?

RESPONSE 31: Class A: Low risk to aquatic life. Class B: Slightly to moderately contaminated and additional testing is required to evaluate the potential risks to aquatic life. Class C: Highly contaminated and likely to pose a risk to aquatic life. Currently Willetts Creek is designated as a Class C. For Willetts Creek, this means remediation is warranted.

COMMENT 32: Will there be a rodent plan in place when excavation of the contaminated soil is removed?

RESPONSE 32: There will be provisions for the control of rodents in place for all remedial work completed on Willetts Creek.

COMMENT 33: Can you send me a species list for Willetts Creek?

RESPONSE 33: A complete survey of all species present in Willetts Creek is outside of the normal requirements for assessing contaminated sites and has not been developed. However, records of species collected during fish tissue sampling has been documented in each sampling report. All sampling data is available at the Document Repository. For the Dzus Fasteners' site the document repository is the West Islip Library located at 3 Higbie Lane, West Islip, NY.

COMMENT 34: Has the water been tested at the grocery store (Stop and Shop) which is directly south of the Dzus parcel and sprays water all over the fresh produce?

RESPONSE 34: The grocery store is served by a public water supply (Suffolk County Water Authority) that is sampled regularly to ensure it meets all drinking water quality standards. The Department of Agriculture and Markets regulates grocery stores, and may have additional information on the produce mist system.

COMMENT 35: And what about every single building, residential and commercial and municipal that lies within the plume area? The testing process is swift, inexpensive and responsible. All designated plume property dwellers could take precautions moving forward while the discussion and remediation process lives out its long life.

RESPONSE 35: Public water in this area is served by Suffolk County Water Authority, District Area 1, and is sampled regularly to ensure it meets all drinking water quality standards.

COMMENT 36: I would like to know what remedial measures will be taken for Lake Capri and when they are planned to be implemented. I live across the street from the Lake and I would like to know if my family and can be affected by the contamination in Lake Capri?

RESPONSE 36: The public will be kept informed of plans relative to Lake Capri. The remedial measures for Lake Capri have not yet been identified. A remedial investigation is underway and will be

followed by a feasibility study and culminating in the Proposed Remedial Action Plan and Record of Decision, at which time the remedial measures will be identified.

Comments from a Letter sent in from the Citizens Campaign for the Environment

COMMENT 37: The NYS DEC needs to ensure that all residential properties, along the corridor of Willetts Creek, are tested for Cadmium and Chromium.

CCE is concerned that some property owners did not respond to the requests by DEC to test backyard soils. Residential properties that were tested revealed cadmium in soil, detected in concentrations ranging from 1.4 to 84ppm. The clean-up standard is 2.5ppm. Cadmium was also detected in river sediment in concentrations ranging from .61-8,200ppm. The cleanup standard is 1ppm. Chromium was detected in soil in concentrations ranging from 5.5-130ppm. The cleanup standard is 30ppm. Chromium was also detected in sediment in concentrations of .43-60ppm. The cleanup standard is 43ppm. The U.S. Department of Health and Human Services (DHHS) has determined that cadmium and chromium compounds are known human carcinogens. The International Agency for Research on Cancer (IARC) has determined that cadmium is carcinogenic to humans. The EPA has determined that cadmium is a probable human carcinogen. Exposure to Cadmium is linked to health impacts including kidney, bone, and lung disease. Chromium is also a known carcinogen. The Department of Health and Human Services (DHHS), the International Agency for Research on Cancer (IARC), and the EPA have determined that chromium (VI) compounds are known human carcinogens.

DEC needs to ensure all properties are tested and remediated. A full clean up cannot move forward if potential “hot spots” are unidentified.

RESPONSE 37: The Department is also concerned about residential participation and will make every effort to gain total participation. However, enough data has been collected to extrapolate where contamination is even without direct sampling of individual properties. During the remedial design a plan will be developed to minimize contaminant contribution after the remedial process has been completed. Also see Response 27.

COMMENT 38: It is CCE’s position that the NYS Department of Health’s position that residents living along Willetts Creek can raise vegetables in contaminated soils as long as they “wash the dirt off the vegetables” is simply not protective of public health.

According to the Agency for Toxic Substances and Disease Registry, cadmium can accumulate in aquatic organisms and agricultural crops. They state, “Cadmium and its compounds may travel through soil, but its mobility depends on several factors such as pH and amount of organic matter, which will vary depending on the local environment. Generally, cadmium binds strongly to organic matter where it will be immobile in soil and be taken up by plant life, eventually, entering the food supply.”

Homeowners should be advised to avoid growing vegetable, fruit, and herb gardens in contaminated soil. The NYS DEC should provide this advisory, since the NYDOH seems to be unwilling to do so. DEC needs to implement a blue claw crab testing and monitoring program, where crabs are tested for heavy metals within Willetts Creek and Lake Capri.

RESPONSE 38: To determine if contaminated soil and sediment is present, NYS DOH recommends that all property owners along Willetts Creek and Lake Capri allow NYSDEC access to their properties for investigation and if needed remediation in accordance with the Record of Decision. NYS DOH staff have stated that people concerned about the potential exposure to contaminated soil as a result of gardening can take various steps to reduce potential exposures, ranging from not having a garden to having one and being careful to thoroughly wash, and (if appropriate to the vegetable type) peel homegrown produce before preparing it for consumption. Other measures that could be considered include installing raised beds and filling them with clean soil or with bagged products prepared for this purpose that are commercially available. In addition, gardeners can make decisions about what type of vegetables to grow, taking into consideration the general observation that the highest uptake of metals from soil is observed in leafy types, such as lettuce, chard, cabbage, etc., followed by rooting types (beets, carrots, etc.). The lowest uptake is observed for fruiting types (corn, peas, beans, tomatoes, etc.). With this information, combined with knowledge of the contaminant levels and their locations in individual yards, residents are fully empowered to make decisions about whether they want to pursue home gardening, and if so, what they want to grow, and where. If they choose to pursue gardening in raised beds filled with uncontaminated soil materials such as described above, then uptake from contaminated soil can be avoided altogether. In addition, we also recommend following good hygiene practices including thorough handwashing following exposure to soils in general, without regard for whether that exposure is related to gardening or to other leisure or recreational activities of any kind.

COMMENT 39: Crabbing is an extremely popular hobby on Long Island, where residents go to their local creeks, rivers, and streams to catch and eat blue craw crabs. At the August public meeting, residents asked if the crabs were safe to eat when caught in the creek. Unfortunately, the New York State Health Department fumbled the answer and told the public not eat the “tamale” of the crabs, which no one eats anyway. The public was asking if the crab meat was safe. No answer was provided. Fish advisory information is given to residents that obtain a fishing permit. No permit is needed for crabbing on Long Island. The Agency for Toxic Substances and Disease Registry notes that “aquatic organisms will accumulate cadmium, possibly entering the food supply. People who fish in local waters as a means of food should be cautious and abide by any advisories.

RESPONSE 39: See Response 19.

COMMENT 40: DEC needs to publicly post all data on fish and crab tissue samples that were taken in Willetts Creek and Lake Capri.

It was noted in a 2013 AECOM report that “Fish tissue data results were documented in separate reports, the most recent of which was submitted in January 2013 for the September 2012 sampling event.” These reports are not found on the DEC website and should be immediately made available to the public.

RESPONSE 40: All sampling data is available at the Document Repository. For the Dzus Fasteners’ site the document repository is the West Islip Library located at 3 Higbie Lane, West Islip, NY.

COMMENT 41: The DEC needs to fully understand where the source of the heavy metals to ensure it does not re-contaminate the creek once again. CCE is concerned that there has not been a meaningful investigation into the spike in levels of Cadmium and Chromium in the creek. We do not believe

Superstorm Sandy "pushed the contamination" up. But rather, it may be attributed to a continuous source that was not identified or a groundwater plume.

DEC needs to assess the impacts from the contaminated groundwater discharging into the creek, and any potential contribution to contaminating creek sediments. OU-1 remediation efforts consisted of in-situ stabilization/solidification for soils containing cadmium at concentrations greater than 10 parts per million (ppm). CCE is concerned that this initial remediation effort could be failing, potentially putting the community and the environment at risk. If the stabilization/solidification effort is failing the $12.5 million remediation effort would be wasted.

At a minimum, we are requesting that collection of pore water samples in the creek are taken to find where the contaminated groundwater is discharging and the contaminant concentrations in the pore water. If cadmium is being transported to the creek sediment via groundwater, and groundwater is not being addressed, another creek cleanup may have to be performed in another 10 years.

RESPONSE 41: See Response 13.

COMMENT 42: DEC should post all sampling reports on their website.

The latest sampling results posted on the DEC website are from 2013. This data is 4 years old. A comprehensive monitoring plan for the site would require additionally sampling to be done. These sampling reports need to publically accessible.

RESPONSE 42: All Sampling data and reports are available at the Document Repository Located at the West Islip Library, 3 Higbie Lane, West Islip, NY.

COMMENT 43: DEC should work with the community and the Town of Islip to ensure a Willetts Creek Stream restoration program is implemented after remediation is completed.

Willetts Creek is a tributary to the South Shore Estuary Reserve. Unfortunately, initial interim remediation measures uncovered trash, debris, and excessive sediment build up in the Creek. Once remediation efforts are completed it is imperative that the creek be maintained. Ensuring a long-term restoration plan is vital to ensuring a functioning, healthy tributary.

RESPONSE 43: See Response 2.

COMMENT 44: DEC needs to implement a community air monitoring program before excavation of contaminated soils begins. Excavation could potentially cause contaminates to become airborne. Background data should be obtained and all data should be posted on DEC's website.

RESPONSE 44: See Responses 12 and 42.

COMMENT 45: DEC should address how potential soil contamination can affect homeowner's pets and issue appropriate guidance to homeowners.

RESPONSE 45: See Response 4.

COMMENT 46: DEC needs to investigate if there are private wells within the affected area that residents might be using for irrigation.

At the community meeting, one resident stated that he was aware of “several homeowners” who use their private wells for irrigation.

RESPONSE 46: See Response 14.

COMMENT 47: DEC needs to expedite a clean-up plan for Lake Capri.

RESPONSE 47: The remedial investigation work associated with Operable Unit 4, Lake Capri, has commenced.

Comments from a letter sent in by Suffolk County Health Department

COMMENT 48: Hexavalent Chromium Analysis:

The unrestricted soil cleanup objective (SCO) for hexavalent chromium is lower than trivalent chromium (1 vs 30 mg/kg, respectively). During the Operable Unit 3 Remedial Investigation (RI), only three of the 234 soil samples were analyzed specifically for hexavalent chromium; residential samples RQ-1, RQ-2 and RH-3. Hexavalent chromium was not detected in any of those samples based on a detection limit slightly above 1 mg/kg. For this reason the PRAP proposes a remedy based on cadmium and trivalent chromium. Were the number of samples and sample locations selected for hexavalent chromium analysis sufficient to provide confidence that the potential occurrence of hexavalent chromium has been adequately characterized?

RESPONSE 48: Hexavalent chromium was not a material used in any known process at the Dzus Facility. All three samples referenced, tested for hexavalent chromium, were shown to be non-detect. During the design additional testing for hexavalent chromium will be undertaken.

COMMENT 49: Table 1-Soil:

Please note that in the heading of the last column, "Restricted" should be deleted so that it reads "Frequency Exceeding Residential SCG".

RESPONSE 49: Table 1 has been corrected.

COMMENT 50: Tidal Portion of Willetts Creek:

A task of the Operable Unit 3 RI was the characterization of sediment in the tidal portions of Willetts Creek (OU 3 RI, August 2017, page ES-2). Two sediment samples were analyzed from the tidal portion and both appear to have been collected directly below the outfall from Capri Lake. Based on the RI Table 4-3, one sample did have a detection of cadmium slightly above the NYSDEC Class C Sediment Guidance Value. The PRAP does not propose to remove any sediment in the tidal portion. At the public meeting on August 9th concern regarding sediment in the tidal portion and potential human exposure

from the consumption of crabs in the creek was raised. We recommend that additional sediment sampling in the tidal portion of Willetts Creek be conducted during Operable Unit 4-Lake Capri monitoring so that a determination can be made of whether biota monitoring and/or sediment removal is necessary.

RESPONSE 50: Additional samples of sediment in the tidal portion of the creek will be collected in conjunction with the Lake Capri (Operable Unit 4) remedial investigation. This characterization will help guide the extent of the remedial program for Lake Capri.

APPENDIX B

Administrative Record

Dzus Fastener Co., Inc.
Operable Unit No. 3: Willetts Creek Wetland Areas
State Superfund Project
West Islip, Suffolk County New York
Site No. 152033

1. Proposed Remedial Action Plan for the Dzus Fastener Co., Inc. site, Operable Unit No. 03, dated July 2017, prepared by the Department.

2. Referral Memorandum dated September 2017 for SSF Referral-Dzus Fasteners, Site No. 152033 Operable Unit 03 & 04

3. RI/FS Work Plan Dzus Fastener Co., Inc. site, Operable Unit No. 03, dated August 2016 Remedial Investigation Letter Work Plan – Phase 1B

4. IRM OU 03A Work plan Dzus Fastener Company OU-3 Interim Remedial Measure Letter Work Plan, Dated December 2016

5. Final RI Report Dzus Fastener Co., Inc. site, Operable Unit No. 03, dated August 2017

6. Final FS Report Dzus Fastener Co., Inc. site, Operable Unit No. 03, dated August 2017

7. IRM Completion Report, Dzus Fastener Co., Inc. site, Operable Unit No. 03A, dated September 2017

8. Letter dated August 21, 2017 from Maureen Murphy, Executive Programs Manager, Citizens Campaign for the Environment

9. Letter dated August 21, 2017 from Walter Dawydiak, P.E., Director, Division of Environmental Quality, Suffolk County Department of Health.