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JUN 2 9 2015
DIVISION OF WATER QUALITY

ATTACHMENT E – NOTICE OF INTENT

ORDER WQ 2014-0174-DWQ
GENERAL PERMIT NO. CAG990002

STATEWIDE GENERAL NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT FOR DISCHARGES FROM UTILITY VAULTS AND UNDERGROUND STRUCTURES TO WATERS OF THE UNITED STATES

I. NOTICE OF INTENT STATUS *(See Instructions)*

MARK ONLY ONE ITEM	1.☐ New Discharger 2.☑ Existing Discharger WDID# 5000U000030 3.☐ Change of Information: WDID # _____ 4.☐ Change of ownership or responsibility: WDID# _____

II. OWNER/OPERATOR (If additional owners/operators are involved, provide the information in a supplemental page.)

A. Name Southern California Edison Company			Owner/Operator Type (Check One) 1.☐ City 2.☐ County 3.☐ State 4.☐ Gov. Combo 5.☑ Private
B. Mailing Address 2244 Walnut Grove Ave.			
C. City Rosemead	D. County Los Angeles	E. State CA	F. Zip Code 91770
G. Contact Person Hazem Gabr	H. Title Water Quality Manager		I. Phone (626) 302-1212
J. Email Address hazem.gabr@sce.com			

☐ **Additional Owners** _____

III. BILLING ADDRESS (Enter information only if different from II. above)

Send to: ☑ **Owner/Operator** ☐ **Other**	A. Name Hazem Gabr		B. Title Water Quality Manager
	C. Mailing Address 2244 Walnut Grove Ave.		
D. City Rosemead	E. County Los Angeles	F. State CA	G. Zip Code 91770

IV. RECEIVING WATER INFORMATION

A. Attach a project map(s) that shows (1) the service area within the a specific Regional Water Board boundary and maps of(2) the corresponding major surface water(s) bodies and watersheds to which utility vault or underground structure water may be discharged. Map features must also include ASBS boundaries, MS4 discharge points to the ASBS, and major roadways.

See Attachment 1 of PLAN

B. Regional Water Quality Control Board(s) where discharge sites are located
List the Water Board Regions where discharge of wastewater is proposed, i.e. Region(s) 1, 2, 3, 4, 5, 6, 7, 8, or 9:

Region 5

V. LAND DISPOSAL/RECLAMATION

The State Water Resources Control Board's water rights authority encourages the disposal of wastewater on land or re-use of wastewater where practical. You must evaluate and rule out this alternative prior to any discharge to surface water under this Order.

Is land disposal/reclamation feasible for all sites? ☐ **Yes** ☑ **No**

Is land disposal/reclamation applicable to a portion of the total number of sites? ☐ **Yes** ☑ **No**

If **Yes** to one or both questions, you should contact the Regional Water Board. This Order does not apply if there is no discharge to surface waters. **If No** to either or both questions, explain:

VI. VERIFICATION

Have you contacted the appropriate Regional Water Board or verified in accordance with the appropriate Basin Plan that the proposed discharge will not violate prohibitions or orders of that Regional Water Board? ☑ **Yes** ☐ **No**

VII. TYPE OF UTILITY VAULT OR UNDERGROUND STRUCTURE (Check All That Apply)

☑ **Electric** ☐ **Natural Gas** ☐ **Telecommunications** ☐ **Other:** _____

VIII. POLLUTION PREVENTION PLAN CONTACT INFORMATION

Each Discharger is required to provide a copy of their PLAN with their completed NOI. The PLAN requirements are provided in Section VII.C.3 of the Order. In the space below, provide the contact information for the person responsible for the development of the PLAN.

A. Company Name	B. Contact Person		
Southern California Edison	Hazem Gabr		
C. Street Address Where PLAN is Located	D. Title of Contact Person		
2244 Walnut Grove Ave.	Water Quality Manager		
E. City	F. County	G. State	H. Zip Code
Rosemead	Los Angeles	CA	91770
I. Phone	J. Email Address		
(626) 302-1212	hazem.gabr@sce.com		

IX. DESCRIPTION OF DISCHARGE(S)

Describe the discharge(s) proposed. List any potential pollutants in the discharge. Attach additional sheets if needed.

Discharge may come from water that enters electric utility vaults and underground substructures. Potential pollutants include: suspended solids, oil, and grease from runoff entering the structure.

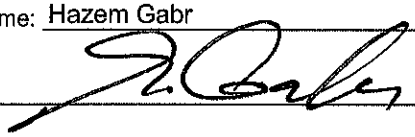
X. REMINDERS

A. Have you included service territory/watershed map(s) with this submittal? Separate maps must be submitted for each Regional Water Board where a proposed discharge will occur.	☑ Yes	☐ No	
B. Have you included payment of the filing fee (for first-time enrollees only) with this submittal?	☐ Yes	☐ No	☑ N/A
C. Have you included your PLAN?	☑ Yes	☐ No	

XI. CERTIFICATION

"I certify under penalty of law that this document and all attachments were prepared under my direction and supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine or imprisonment."

A. Printed Name: Hazem Gabr

B. Signature: 

C. Date: 6/29/2015

D. Title: Water Quality Manager

PLEASE SUBMIT THE NOI, FIRST ANNUAL FEE, PLAN, AND MAP
TO THE FOLLOWING ADDRESS:

UTILITY VAULTS NOI
NPDES UNIT
DIVISION OF WATER QUALITY
STATE WATER RESOURCES CONTROL BOARD
P.O. BOX 100
SACRAMENTO, CA 95812-0100

STATE USE ONLY

WDID:	Regional Board Office	Date NOI Received:	Date NOI Processed:
Case Handler's Initial:	Fee Amount Received: $	Check #:	

SOUTHERN CALIFORNIA EDISON®
An EDISON INTERNATIONAL® Company

Pollution Prevention Plan

FOR DISCHARGES FROM UTILITY VAULTS AND UNDERGROUND STRUCTURES

Prepared in Accordance with California State Water Resources Control Board General National Pollutant Discharge Elimination System (NPDES) Permit for Discharges from Utility Vaults and Underground Structures to Waters of the United States; Order WQ 2014-0174-DWQ; General Permit No. CAG990002

Regional Water Quality Control Board, Central Valley Region

Date: [06.29.15]

CERTIFICATION STATEMENT

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Name: Hazem Gabr Title: Corporate Water Quality manager

Signature: _____ Date: 6/29/2015

PLAN CONTACT LIST

Operators:

Southern California Edison Company

Paul Ahn
1218 South Fifth Avenue,
Monrovia, CA 91016
(626) 462-8711
Paul.Ahn@sce.com

Hazem Gabr
1218 South Fifth Avenue,
Monrovia, CA 91016
(626) 462-8715
Hazem.Gabr@sce.com

Emergency 24-Hour Contact:

On Duty Environmental Specialist
(626) 302-1212

PLAN LOCATION

A hard copy of this PLAN shall be maintained at all times by the Southern California Edison Water Quality Section at 2244 Walnut Grove Ave., Rosemead, CA 91770. Electronic copies of this PLAN shall be maintained and up to date on the SCE Portal.

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ABBREVIATIONS

ASBS	Area of Special Biological Significance
ASP	Automatic Sump Pumps
BMP	Best Management Practices
CEHS	Corporate Environment, Health and Safety
CF	Cubic Feet
CWA	Clean Water Act
EN-2	SCE Environmental Policies and Procedures – Vault Dewatering
EPA	United States Environmental Protection Agency
MRP	Monitoring and Reporting Program
MS4	Municipal Separate Stormwater Sewer Systems
NALs	Numeric Action Levels
NPDES	National Pollutant Discharge Elimination System
O&M	Operations & Maintenance
OU	Organization Unit
PCB	Polychlorinated-biphenyls
PLAN	Pollution Prevention Plan
PPT	Pollution Prevention Team
SCE	Southern California Edison Company
SWRCB	California State Water Resources Control Board
TDBU	Transmission and Distribution Business Unit
TSS	Total Suspended Solids
TPH	Total Petroleum Hydrocarbons
UVUS	Utility Vaults and Underground Structures
WOUS	Waters of the United States

1. INTRODUCTION

Southern California Edison (SCE) periodically discharges water from its Utility Vaults and Underground Structures (vaults or utility vaults) to Waters of the United States. This discharge to Waters of the United States must comply with the National Pollutant Discharge Elimination System (NPDES) authorized under Section 402 of the Clean Water Act (CWA). The California State Water Resources Control Board (SWRCB), the regulatory agency responsible for implementation of the Utility Vault NPDES Program, adopted the Utility Vault NPDES Permit. This permit, the General NPDES Permit for Discharges from Utility Vaults and Underground Structures to Waters of the United States, Order WQ 2014-0174-DWQ, General Permit No. CAG990002 (Permit), was adopted in October 21, 2014 with an effective date of July 1, 2015. This Permit requires each enrolled discharger to develop and implement a Pollution Prevention Plan (PLAN).

1.1. PURPOSE

This PLAN describes SCE's compliance approach for meeting the requirements of the Permit. In accordance with Section VII.C.3.c of the Order, this PLAN includes:

- Identification of the Pollution Prevention Team
- Employee Training
- Identification of potential pollutant sources
- Drainage map
- Best Management Practices (BMPs) designed to prevent or control the discharge of pollutants
- Procedures for evaluating potential pollutant sources, pollutants of concern, conditions at a utility vault, and specific control measures which utility company personnel may use to control the discharge of the pollutant
- Procedures for evaluating water quality within a vault the discharge path to the nearest storm drain or surface water prior to discharge
- Measures that will be implemented to prevent or control discharge of pollutants, including good housekeeping, discharge procedures, and pollution control and waste disposal procedures

1.2. BACKGROUND

SCE owns and operates underground distribution equipment vaults, subsurface transmission cable trenches, underground transmission cable vaults and underground carrier solutions cable vaults for which the Permit covers. The distribution and transmission service territory encompasses seven Regional Board regions, 50,000 square miles and serves approximately 15 million people. This area extends roughly from Mono County to San Diego County in California.

In order to protect the electrical equipment, eliminate safety hazards and provide access to equipment for repair and maintenance, it is necessary to pump accumulated liquid from underground structures.

SCE owns and operates approximately 400,000 underground utility structures. The SCE Transmission and Distribution (T&D) Organization Unit has developed a procedure for scheduled and unscheduled vault discharges or emergency situations: Environmental Policies and Procedures (EN-2) Underground Structures Water Handling and Disposal (Attachment 2). This procedure outlines the steps that field personnel must take to ensure that the beneficial uses of the receiving water body and water quality objectives are not impacted by water discharged from an underground structure.

SCE also owns and operates approximately 50 underground structures located within the hydro powerhouses. These additional 50 structures are also covered by the Permit. In order to protect the equipment and provide access for repair and maintenance, it is necessary to periodically pump accumulated liquid from these structures. The structures are often impacted by ground water infiltrated through the concrete and system water leakage from the turbine process.

The discharges from SCE utility vaults are intermittent and of low volume, generally on the order of a few thousand gallons. Figure 1 below shows common pump rates for normal discharge operations. Figure 2 shows a typical section of a utility vault. Table 1 provides the structure descriptions and dimensions for the vaults.

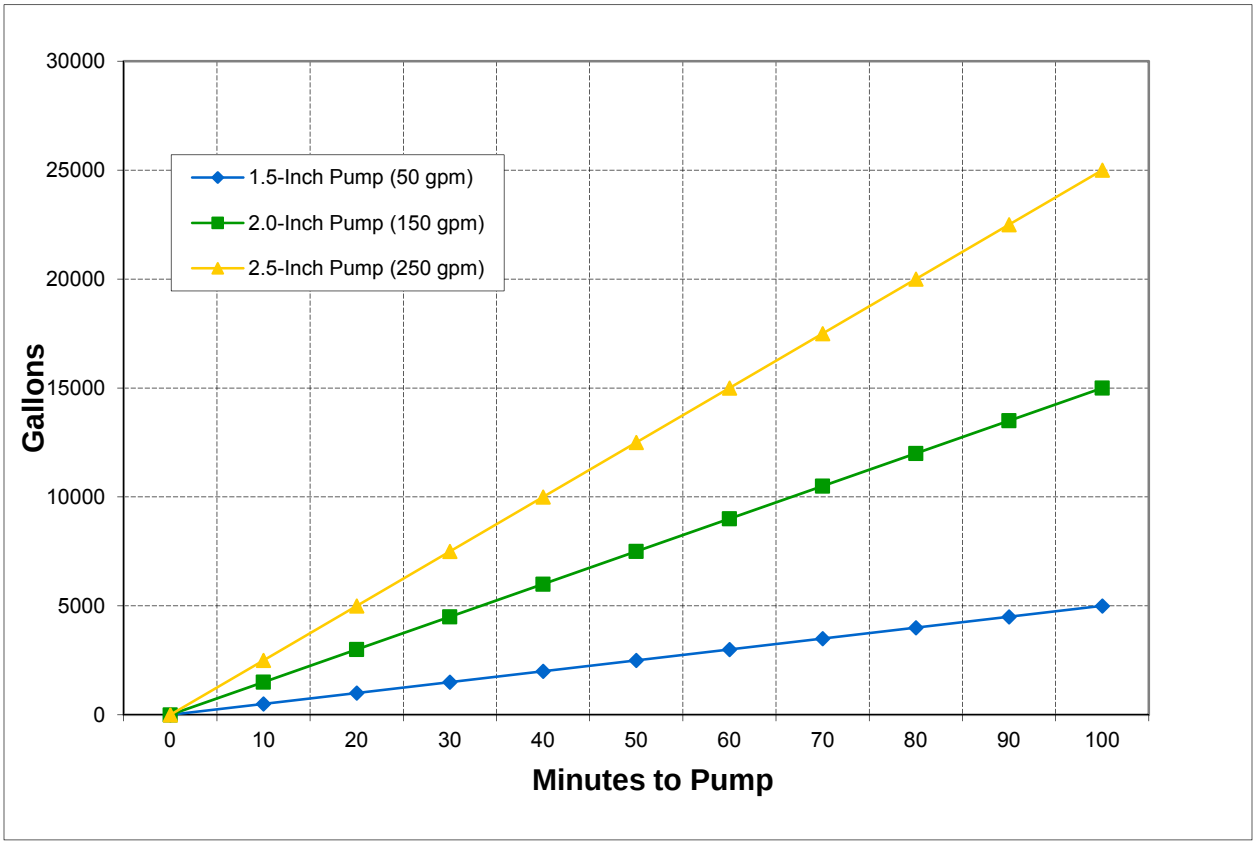


Figure 1. Estimated Pumping Time

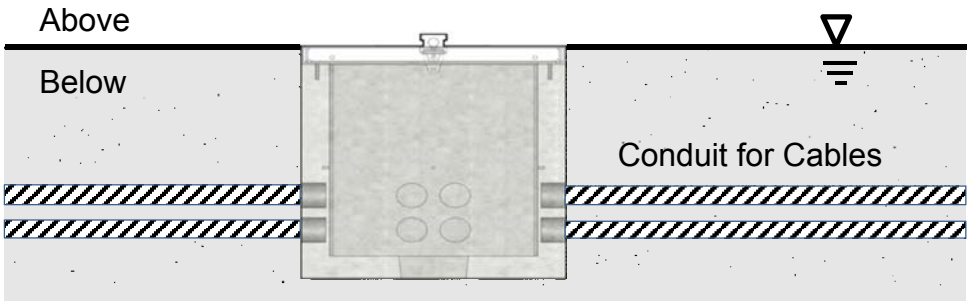


Figure 2. Cross Section of Typical Vault

Table 1. Structure Descriptions and Dimensions

Group	Equipment	Location / Description	Type	Size (approx.)
Distribution Vaults/Carrier Solution Vaults	Transformers, Switches, Cables	Located underneath streets, parking lots, within building structures. These structures contain electrical equipment.	Vault	Typical size is 10 ft x 10 ft x 10 ft, but may vary according to use and location. These structures are large enough to hold equipment and personnel to work on equipment.
Transmission Vaults	Cables	Located either underneath streets or at substations. These structures contain electrical equipment.	Vault	Various sizes: typical size is 15 ft x 15 ft x 15 ft
Cable Trenches	Cables	Located exclusively at substations in and around the equipment leading to the control building. These rectangular ditches are approximately 1–8 feet deep and have removable covers.	Trench	Various sizes: typical size is 50 ft x 3 ft x 3 ft
Underground structures: generator and valve pits	Water pipe; turbine shutoff valve; turbine power needle; power needle servo motor; deflector linkage	Located within hydro powerhouses throughout SCE service area.	Manhole	4 ft x 6 ft x 7 ft
			Hand Hole / Pull Box	3 ft x 5 ft x 4 ft
			Underground structures	Various sizes: 4 x 3 x 3 to 12 x 12 x 20. Structures are large enough to hold equipment and personnel to work on equipment.

2. POTENTIAL SOURCES OF POLLUTION

Utility vaults are often impacted by storm water or infiltrated ground water. Due to engineering limitations, in most cases these structures are not watertight, and water can accumulate in them. Depending on the type of utility vault and surrounding land uses, accumulated water may contain solids, hydrocarbons, sediment, vegetation, or oil & grease. The pollutant source is rarely from the vault itself, but rather originates with the accumulated water in the vault.

2.1. POTENTIAL POLLUTANTS

As can be understood from the types of underground structures described in Table 1 of section 1.2 of this PLAN, SCE's utility vaults are not a major source of water or pollutants by themselves.

Discharges from these underground structures consist mainly of storm water runoff, water from over irrigation, waste water from broken sewer lines, or groundwater intrusion. As a result, the primary variable in vault water quality is the land use above the structure.

The three main land use categories that may have an impact on water quality of the discharges are:

a. Industrial/Commercial
b. Residential, and
c. Rural/Agricultural/ Landscape.

Typical pollutants that have been found in utility vault discharges as a result of surrounding land include gasoline, diesel, motor oil, debris, and sewage. Table 2 below shows the pollutants and their origins.

Table 2. Pollutant Sources from Surrounding Land Uses

Pollutant	Origin
Total Petroleum Hydrocarbons (TPH), motor oil, gasoline and diesel range	hydrocarbons introduced through storm water or ground water infiltration
Vegetation, litter	Debris that enters vaults during maintenance
Sewage	Utility cross connections, leakage from nearby sewer lines

In addition, pollutant sources originating from utility vaults include mineral oil, grease, metals, asbestos, and polychlorinated-biphenyls (PCBs). Table 3 below shows the pollutants and their origins.

Table 3. Pollutant Sources from within Utility Vaults

Pollutant	Origin
Mineral Oil	Electrical equipment within the utility vault. Mineral oil is used as a dielectric to prevent arcing.
Grease/lubricants	Electrical equipment within the utility vault.
Metals	Copper (from cables) Zinc (from galvanized equipment) Lead (from lead shielding on cables)
Asbestos	Cable wrapping within vault equipment
Polychlorinated-biphenyls (PCB)	Mineral oil in electrical equipment manufactured prior to 1980. Note that SCE standard procedure for vault dewatering (EN-2) states that for vaults with equipment older than 1980, the vault may only be dewatered using a vacuum truck, and the water hauled to a permitted disposal facility.

2.2. PLAN AREA AND DRAINAGE MAPS

The SCE service territory in this region includes all land use types. Both urban and rural land uses, as well as coastal, mountain and desert climates are present.

Attachment 1 provides a map of the SCE service area. The maps show:

(1) the SCE service area within the Regional Water Board boundary,
(2) the corresponding major surface water bodies and watersheds to which utility vault water may discharge, and
(3) ASBS boundaries, MS4 discharge points to the ASBS, and major roadways as appropriate to the Region.

2.3. POLLUTION ASSESSMENT

As part of the annual report associated with the previous Utility Vault NPDES Permit (Order No. 2006-0008-DWQ), SCE conducted representative sampling of its utility vaults. Sampling was conducted for Total Suspended Solids (TSS), pH, Oil and Grease and Total Petroleum Hydrocarbons (Gasoline and Diesel).

The SCE Annual Monitoring Report for the last 9 monitoring period concluded that the vast majority of sample were within EPA parameter benchmarks for TSS, TPH, oil and grease, and pH. The results are summarized in Figure 3 through Figure 7.

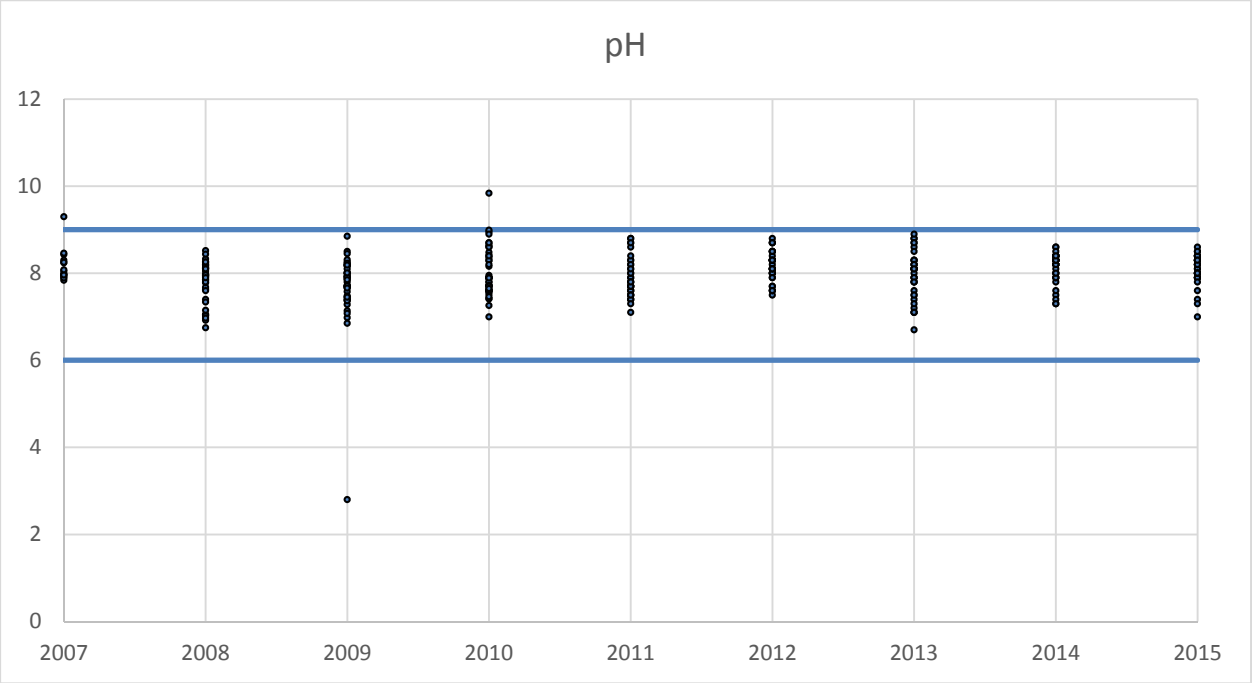


Figure 3. Historical Analytical Results for pH

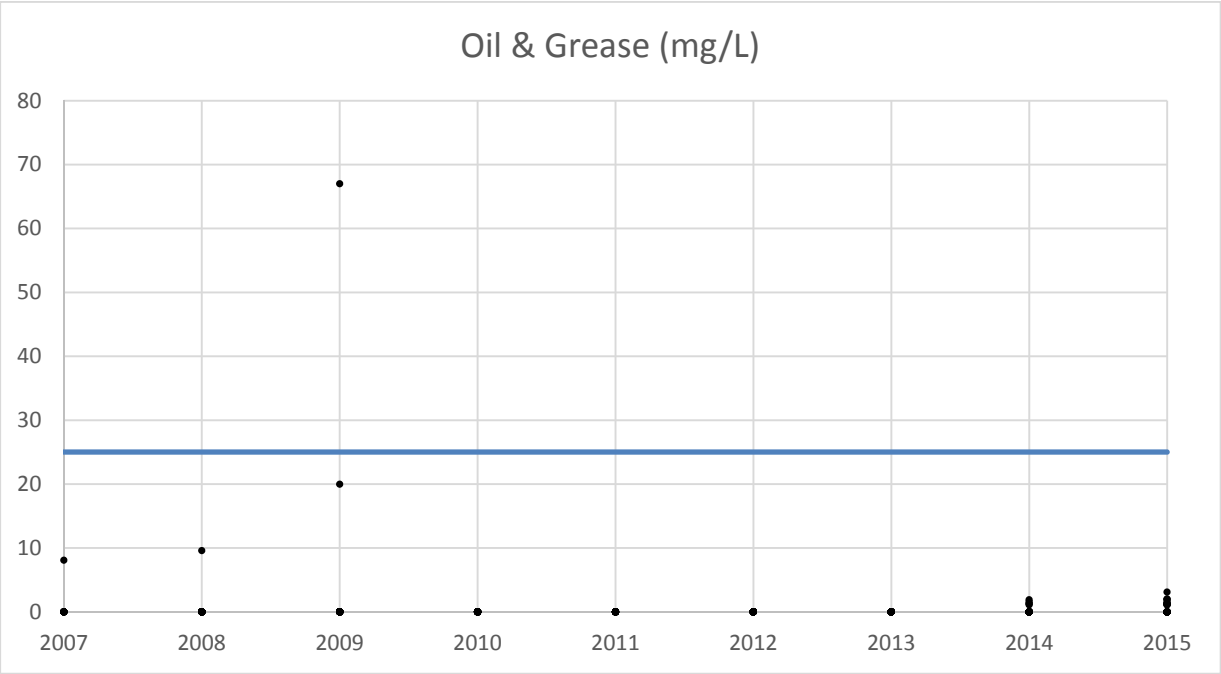


Figure 4. Historical Analytical Results for Oil & Grease

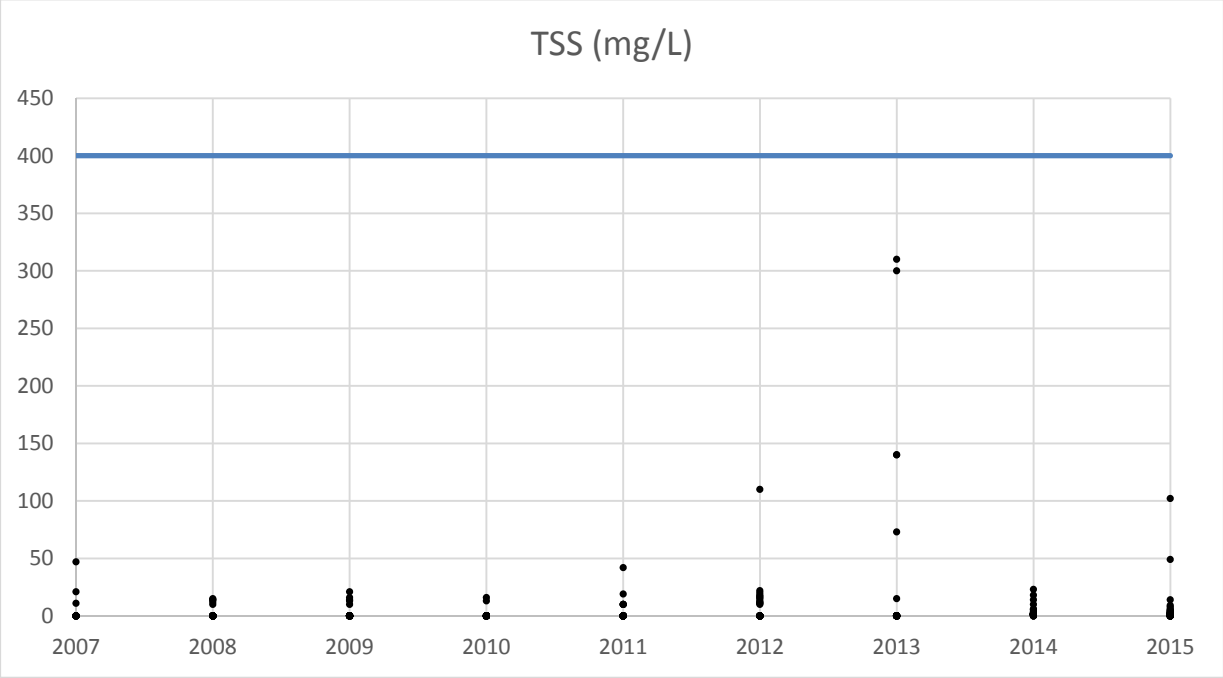


Figure 5. Historical Analytical Results for TSS

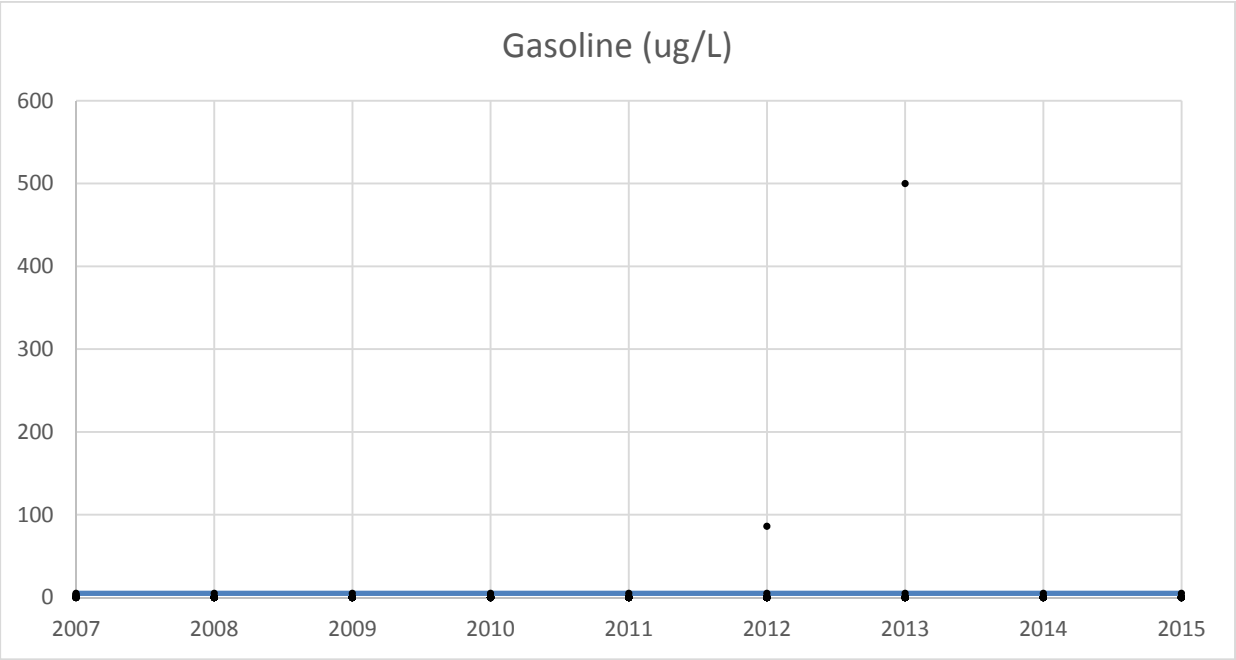


Figure 6. Historical Analytical Results for Gasoline

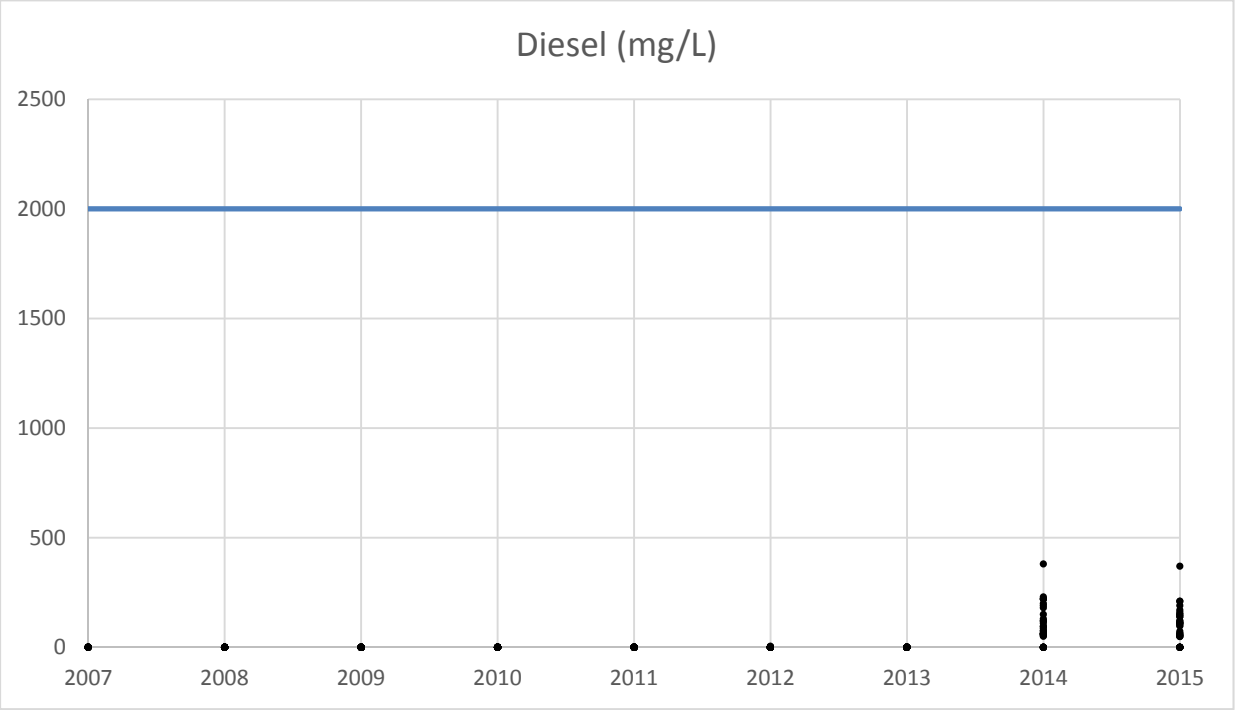


Figure 7. Historical Analytical Results for Diesel

3. POLLUTION CONTROL

SCE employs a combination of administrative tracking, research, technical methods, employee training, and continuous development and refinement of standard dewatering procedures to control pollution potentially caused by discharges from its utility vaults and underground structures. By creating a Pollution Prevention Team, as well as conducting routine field personnel training on discharge procedures and structural/non-structural Best Management Practice, the company stays in compliance with the Permit.

3.1. POLLUTION PREVENTION TEAM

As required by the Permit, SCE formed a Pollution Prevention Team (PPT) with members of different roles to develop, implement, maintain, evaluate, and revise the PLAN. Table 4 below provides a list of the team members and their responsibilities.

Table 4. List of SCE Pollution Prevention Team Members and Responsibilities

No.	Name	Title	Organization Unit	Role in PPT
1	Hazem Gabr	Manager, CEHS Water Quality	Corporate Environmental, Health & Safety	Duly Authorized Signatory Person
2	Paul Ahn	NPDES Program Manager	Corporate Environmental, Health & Safety	CEHS Lead for Administrative Permit Compliance and Training
3	Kenneth Herrera	Manager, T&D Environmental	Transmission & Distribution	Organization Unit Lead for T&D
4	Denise Yaffe	Manager, Safety and Environmental Services	Power Supply	Organization Unit Lead for PS
5	Ricardo Moreno	Sr. Environmental Specialist	Corporate Environmental, Health & Safety	CEHS Lead for Annual Sampling and Reporting
6	Pat Amott	Safety and Environmental Specialist	Transmission and Distribution	Organization Unit Liaison for Field Personnel

Figure 8 below shows organization of the Pollution Prevention Team.

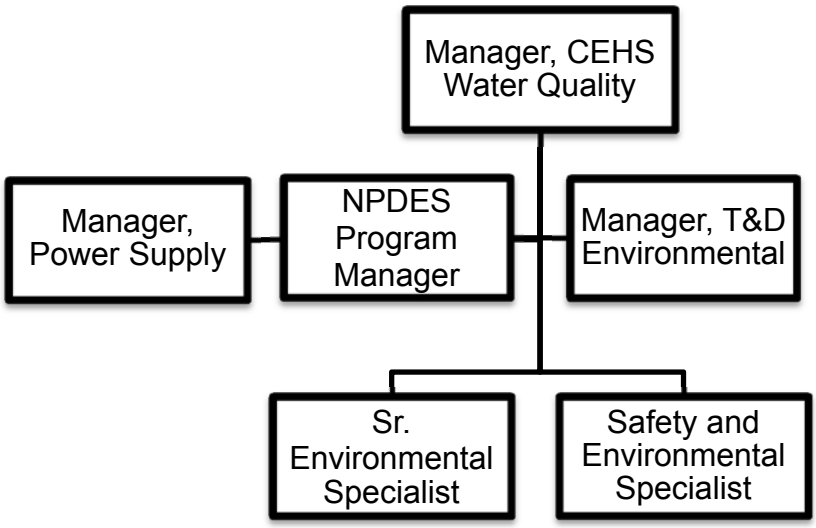


Figure 8 Organization of Pollution Prevention Team

3.2. EMPLOYEE TRAINING

SCE training programs inform personnel at all levels of responsibility of dewatering vaults the components and goals of the PLAN.

Personnel responsible for field implementation of utility vault dewatering are trained in routine vault dewatering procedures, as well as spill response, good housekeeping, pollution control procedures, and material management practices. SCE field personnel are provided training on the above topics on an as-needed basis. The video-based training includes step by step guidance for conducting a visual assessment of vault water and determining the vault dewatering procedure for that vault. This video follows the procedures laid out in EN-2 (Attachment 2).

To review the training video, please refer to the Utility Vault Dewatering Video in Attachment 3.

3.3. DISCHARGE PROCEDURES

Procedures to evaluate the quality of the water prior to a planned (non-emergency or non-automated critical) discharge, as well as procedures that are used for discharges that occur during emergency situations are explained below.

3.3.1 Planned Discharges

SCE conducts regular inspections and maintenance of equipment housed in its underground structures at least once every three years (California Public Utilities Commission requirement). During the inspections, the field personnel will determine if the equipment meets requirements and if general maintenance is required. As part of SCE's Operation and Maintenance Policy and Procedures, SCE has identified the procedures, checklists and forms for performing these underground detail inspections. These inspections evaluate the safety and condition of all transmission and distribution cable, equipment and apparatus within the underground structures.

During routine inspections, the personnel are instructed to verify the condition, corrosion level and inventory records of each piece of equipment in each structure inspected. In terms of safety issues, gas and oxygen levels are monitored before entering the confined structure. Infrared heat scanning of the cable, components and equipment are then performed. SCE has established procedures for line routine patrol, inspection, scheduling and record keeping.

During routine inspections, SCE personnel often encounter storm water or intruded ground water in underground vaults or cable trenches. Upon discovery, it is necessary to pump water from these structures for the protection and maintenance of the equipment/cable and to protect the safety of personnel entering these structures. Potential pollutants from scheduled discharges may include oil and grease, turbidity and suspended solids. These discharges are intermittent and of low volume, on the order of a few hundred gallons to a few thousand gallons.

Once the initial inspection activities are completed, SCE will implement the environmental requirements outlined in the EN-2 procedure. The procedure provides direction in making a visual determination of the potential pollutants that may be found in an underground structure. The visual determination guides the selection of how the vault will be dewatered. If the water is found to be clean, the Permit allows for its discharge to the street or storm drain. However, if the water is cloudy, rusty, muddy, has sheen, oil or odor, the vault contents must be pumped using a filter sock or a vacuum truck.

3.3.2 Emergency Operation Discharges

If there is an equipment failure and or if an emergency condition exists (i.e. power outage), SCE field personnel will need to access the underground structure to make repairs or replace equipment. The field personnel are directed to contact the Safety & Environmental Specialist for guidance and follow EN-2 when feasible.

3.3.3 Hydro-Power Generation Operational Procedures

The following steps have been developed to help employees evacuate water from an underground structure and comply with applicable laws. Potential contamination of water must be assessed before discharging within hydro-power generation facilities.

Upon discovery of water in an underground structure, the personnel will determine if a sheen on water is visible. If the water appears clean (i.e., no unusual odor, nor is it colored or unusually cloudy based on observation), it is acceptable to discharge the water. As you begin the process of pumping water from the structure, place the pump at the lowest point of the structure and initially place the discharge hose back into the structure until the water is observed to be clean. Once the water is observed to be clean, it is acceptable to discharge the water outside of the structure.

If there are only small amounts of oil on the surface, use absorbent pads or material to skim the oil from the top of the water prior to pumping. Material codes for the absorbent pads or materials are listed below:

1. Absorbent products designed to remove oil only:
    - 1.75 CF Bag Material Code # 860-04249
    - 4 ft sock Material Code # 860-04256
    - Netted bilge boom Material Code # 860-04298
2. Absorbent product designed to remove oil and water:
    - 25 lb. bag Material Code # 846-00873

Once the personnel is ready to pump the structure, ensure that the pump is placed into the lowest point of the structure and follow the same process of pumping the water back into the structure until clean water is detected. Care shall be taken not to pump any oil into the surrounding environment. Once the water is evacuated from the structure, the remaining oily water mixture must then be pumped into 55-gallon drums or a vacuum truck and disposed of appropriately. If there are sediments or solids at the bottom of the vault, these must be placed in 55-gallon drums and disposed of appropriately.

The Power Supply OU Lead for this Permit (Table 4: List of SCE Pollution Prevention Team Members and Responsibilities) must be contacted prior to the evacuation of the structure to help determine procedures for labeling and disposing of any drummed material.

3.3.4 Automated Critical Discharges

Automatic Sump Pumps (ASP) are used by utility companies to keep chronic water intrusion from harming equipment in underground vaults or areas subject to drainage. SCE evaluates ASP installation on a case-by-case basis where an automatic discharge is need.

3.4. BEST MANAGEMENT PRACTICES

SCE has developed a set of Best Management Practices (BMP) for utility vault discharges. These BMPs remove potential pollutants out of utility vault discharges prior to reaching receiving waters:

- Visual Screening
- Filter Sock
- Automatic Sump Pump (ECOPump)
- Vacuum Truck

Visual Screening BMP

Accumulated vault water that is not appropriate for discharge to the storm drain or surface water must be hauled to a treatment facility for disposal. The procedure sets specific field evaluation steps to determine the proper disposal method for accumulated vault water. The BMP procedure requires SCE personnel to collect a bailer sample of the vault water (see Page 2-6 of EN-2 in Attachment 2) and visually compare the water sample with a set of SCE visual water quality standards, shown in the photo below. The results of the visual comparison are used to determine the correct management of the vault water, as shown in Table 5 and Figure 9 below.

Table 5. Filter Sock Field Guidelines

Sample Appearance	Dewatering Method
■ Clear, no sediment, no oil sheen, no odor. Bailer sample appears like sample in Figure 4(a) below.	Discharge to storm drain without a filter sock
● Slightly cloudy or discolored, light sediment or minimal oil sheen, no odor. Bailer sample appears like samples in Figure 4(b) below.	Discharge to storm drain using a filter sock
▬ Very cloudy, excessive sediment, rust, odor and/or oil sheen. Bailer sample appears like samples Figure 4(c).	Vacuum truck pumps vault and hauls to disposal facility

Figure 9. Bailer Water Sample Appearance for Visual Screening BMP

Filter Sock BMP

SCE uses a filter sock BMP that removes rust, sediment, and hydrocarbon discharge from utility vault dewatering discharges. In 2006, SCE completed research and testing of the filter sock and facilitated a company-wide filter sock program roll out. The filter sock was shown to reduce hydrocarbon and sediment levels in the vault water discharge. SCE trained its field personnel in the correct use of the filter sock in the field through a combination of field training, video training, and supervisor-assisted activities.

Figure 10 below shows the filter socks in use and the bucket SCE field personnel use to store the new and used filter socks. The label of the bucket is designed by SCE and has the photographs in Figure 9 for field personnel reference. Detailed procedures are presented in page 2-8 and 2-9 of EN-2 in Attachment 2. Additional details regarding the Filter Socks are presented in Attachment 4.

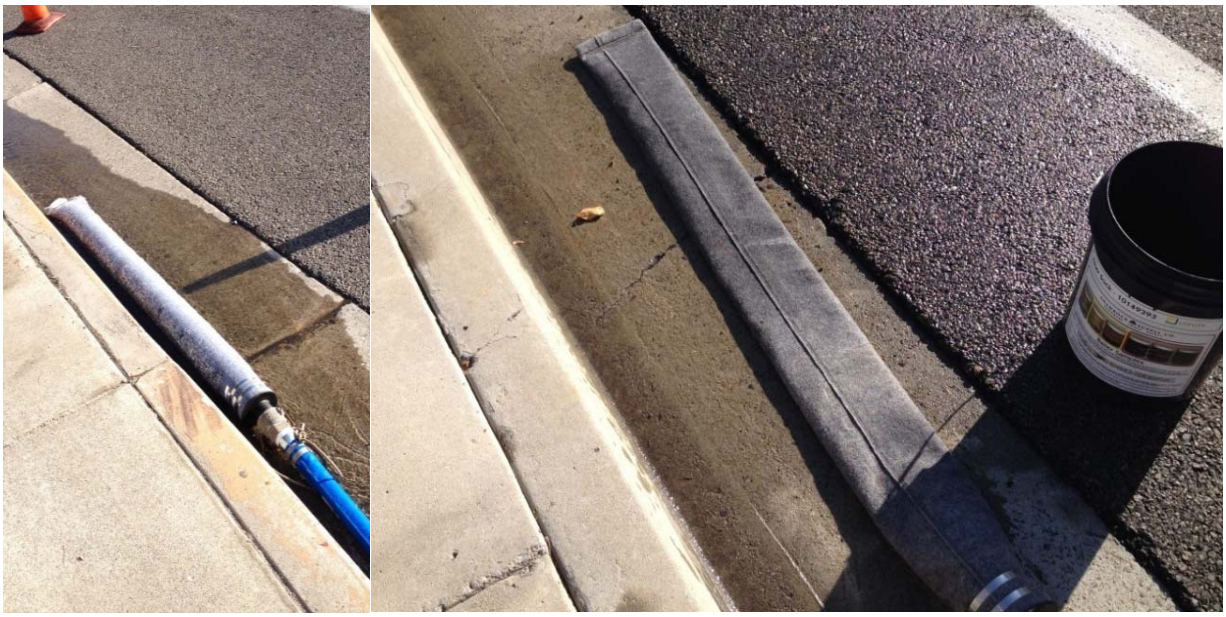


Figure 10 Filter Socks BMP

Automatic Sump Pump BMP

A method was needed to ensure pollutants would not be discharged uncontrolled to the environment. A new design of ASP (ECOPump) with safe guards was developed and is designed to filter hydrocarbons and sediment while allowing water to pass. ECOPump, or equivalent BMP, will be used where automated critical discharge is needed. Additional information regarding the ECOPump are presented in Attachment 5.

Vacuum Truck BMP

SCE field personnel make the determination whether to dewater using a vacuum truck when the bailer sample fails the visual screening BMP. This BMP requires pumping the vault water into vacuum truck(s) and transporting it to a permitted wastewater treatment facility for treatment and disposal. The BMP is used for the vault water that fails the screening BMP for sediment, rust, odor, or petroleum hydrocarbons.

3.5. POLLUTION CONTROL AND WASTE DISPOSAL PROCEDURES

Upon completion of the visual screening procedure, SCE field personnel make a determination the method of vault dewatering approach that will be used: implement a filter sock, or use of a vacuum truck. Where the vacuum truck is required, the field personnel mobilize vacuum truck(s) to the utility vault location prior to commencing work. For waste disposal procedure details, see pages 2-9 and 2-10 of EN-2 in Attachment 2.

4. ANNUAL PLAN EVALUATION AND REVISION PROCEDURE

SCE conducts an overall evaluation of the effectiveness of its PLAN in controlling the discharge of pollutants during a discharge event and revises the PLAN as necessary to address procedures and BMPS found to not be effective in minimizing the discharge of pollutants.

4.1. PLAN EVALUATION REQUIREMENTS

At least once per year, SCE conducts an evaluation of the effectiveness of this PLAN in controlling the discharge of pollutants during a discharge event. At a minimum, the PLAN evaluation includes the following:

(a) Evaluate the PLAN measures to reduce pollutant loadings to determine whether they are adequate and properly implemented in accordance with the terms of the Permit or whether additional control measures are needed. Ensure that utility source control measures, sediment and erosion control measures, and other structural BMPs identified in the PLAN are operating correctly. Perform an evaluation of equipment needed to implement the PLAN.

(b) If the results of the annual monitoring at five representative sites required in the Monitoring and Reporting Program (MRP) exceed of one or more of the Numeric Action Levels (NALs) listed in Table 6 below (Permit Section VII.C.3.d.i), then SCE evaluates the potential cause(s) of the NAL exceedance(s). At a minimum, this evaluation includes an assessment of the potential source(s) of the pollutant and whether the procedures and BMPs contained in the PLAN need to be revised to address the identified source(s) in future discharges. According to the Permit, additional NALs may be added in the future based on the results of the Discharge Characterization Study.

Table 6. Numeric Action Levels for Pollutants of Concern

Parameter	Units	Numeric Action Levels	
		Minimum Daily	Maximum Daily
Oil and Grease	mg/L	---	25
pH	Standard Units	6.0	9.0
Total Petroleum Hydrocarbons-Diesel Range Organics	mg/L	---	2
Total Petroleum Hydrocarbons-Gasoline Range Organics	µg/L	---	5
Total Suspended Solids	mg/L	---	400

4.2. PLAN REVISIONS

The PLAN is a dynamic compliance document that changes frequently during the term of the Permit cycle. If PLAN revisions are necessary based on the PLAN evaluation required in section VII.C.3.d.i of the Permit, SCE shall develop a revised PLAN with new or revised BMPs to comply with the Permit. SCE implements the BMPs year round, and documents the progress of their implementation and effectiveness in the Annual Report to the Regional Water Board Executive Officer.

If it is determined that the cause(s) of an exceedance of an NAL was the result of inadequate PLAN implementation, procedures, or BMPs, then SCE will make appropriate revisions to the PLAN. SCE provides as part of the Annual Report an explanation detailing PLAN updates and outcomes.

4.3. ANNUAL PLAN EVALUATION AND DOCUMENT MAINTENANCE

SCE provides the results of the annual PLAN evaluation and any revisions to the PLAN as part of the Annual Report required in section VI.B. of the MRP (Attachment C to the Permit Order, Attachment 5).

SCE retains for five years records summarizing the scope of the annual PLAN evaluation, personnel making the evaluation, the date(s) of the evaluation(s), significant observations relating to the implementation of the PLAN, and actions taken to revise the PLAN.

5. ANNUAL REPORTS

As required by the Permit, SCE shall conduct the required routine annual monitoring and provide the data to the appropriate Regional Board as part of the Annual Report, no later than June 1 of each year. Based on data compiled by this monitoring event, SCE reevaluates its activities and approaches to ensure all steps are being taken to address permitting requirements.

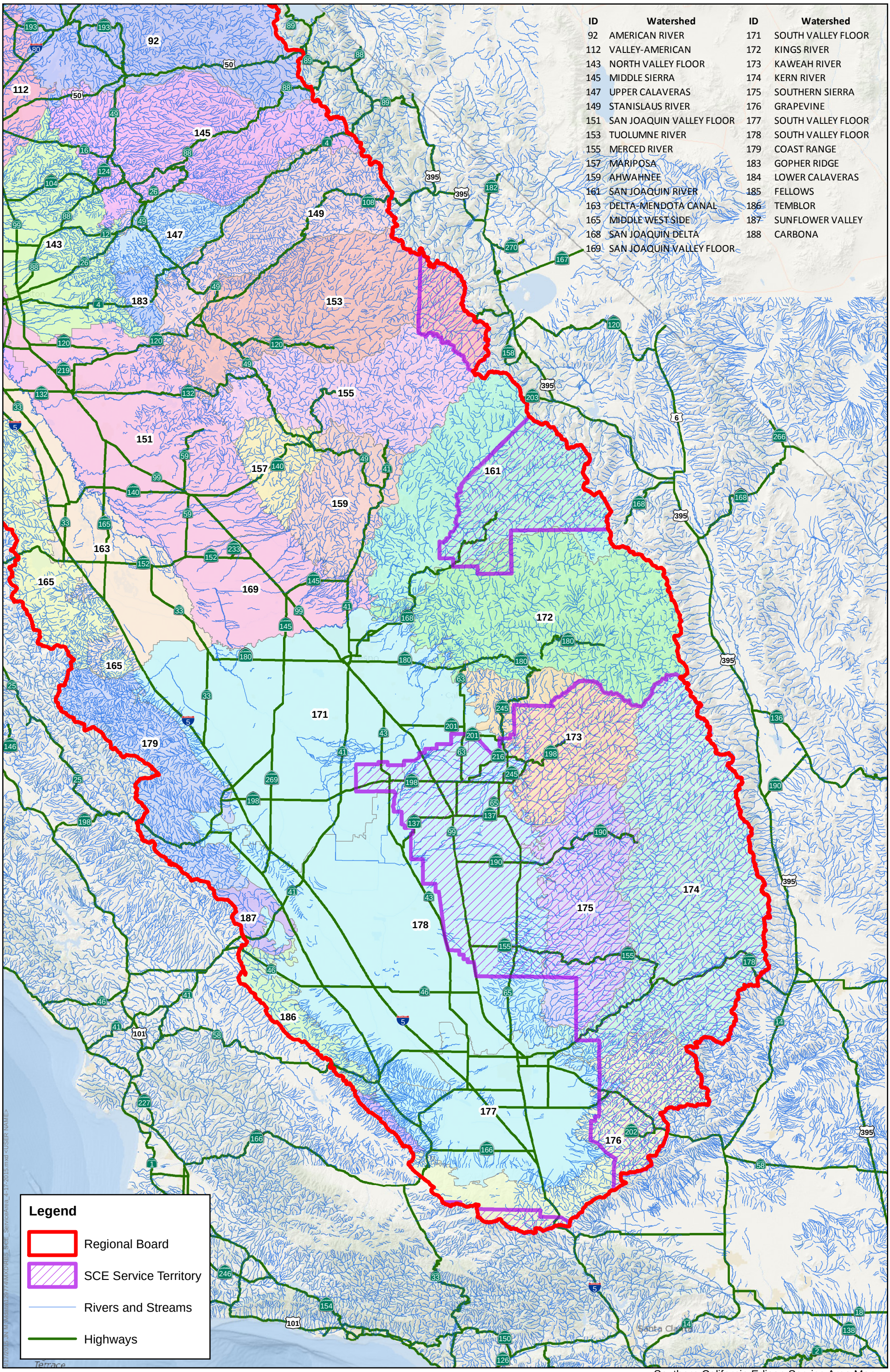
As required by the Permit, Annual Reports shall contain an executive summary, a summary of monitoring data, a summary of relevant field observations including a map showing the location of each monitored discharge location, a list of all monitored discharge locations with identification, location information and date, and the estimated volume of water discharged. The Annual Report shall describe SCE's sample collection, analysis, and quality control procedures. SCE complies with all Annual Report requirements outlined in the Permit and in Attachment C.

The Annual Report shall be submitted to the appropriate Regional Water Board, signed and certified by LRP, with the required certification statement.

When requested by EPA, SCE also completes and submits DMRs to EPA. The submittal date will be specified in the EPA request.

6. ATTACHMENTS

ATTACHMENT 1: DRAINAGE MAPS



Southern California Edison Service Area Map

Regional Board 5 Central Valley

Watersheds and Water Bodies

ATTACHMENT 2: EN-2

Southern California Edison
Transmission and Distribution Business Unit

EN–2: Underground Structures Water Handling and Disposal

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EN–2
Underground Structures Water Handling and Disposal

1.0 PURPOSE

This chapter describes underground structures water handling and disposal. It establishes the requirements that are necessary to ensure that all applicable laws and regulations regarding the handling and disposal of water from underground structures (such as vaults, manholes, Buried Underground Residential Distribution (BURD) structures, and cable trenches) are followed by SCE field crews.

Southern California Edison (SCE) owns, maintains, and operates underground distribution equipment vaults, subsurface transmission cable trenches, underground transmission cable vaults, and underground carrier solution cable vaults (telecommunication). The Transmission and Distribution service territory encompasses 50,000 square miles and serves approximately 14 million customers. This area extends roughly from Mono County to San Diego County and is primarily concentrated in Los Angeles, San Bernardino, Ventura, Riverside and Orange Counties. There are over 396,000 various underground structures that exist in the SCE system.

The use of local water resources is a privilege that SCE maintains by successfully meeting community water quality criteria and standards. Because these standards vary from region to region, vault dewatering and pumping shall follow SCE procedures and permit conditions as well as local city agency requirements.

2.0 POLICY STATEMENTS

2.1 This procedure is intended to ensure compliance with SCE's current General National Pollutant Discharge Elimination System Permit (NPDES) for discharges from utility vaults and underground structures to surface waters. Provided these approved procedures are followed, the NPDES permit authorizes the proper discharge of water to the streets and storm drains within the municipalities of the State of California. The NPDES permit must also be accessible to SCE's field crews and located at the facilities if an agency or internal auditor requests the document.

2.2 When oil-filled electrical equipment leaks or ruptures in structures containing water, the result is usually a mixture of oil and water that must be handled according to the U.S. Environmental Protection Agency (EPA) and state regulations regarding the handling of oil water mixtures (Attachment 2–1 [Page 2–14]). On those occasions or where other contaminants are discovered, such as biological wastes, solids, gasoline, sewage, or grease, special procedures must be followed. Contact the TDBU Environmental Specialist for guidance.

2.3 A determination must be made concerning the PCB content of the oil layer, in the water, to ensure proper handling and disposal. Records of prior PCB lab testing on equipment oil can be used, if available, to determine PCB content of the oily-water mixture. If no records are available, oily water must be sent to the laboratory for analysis.

Distribution equipment purchased by SCE, specifically transformers and oil-filled switches, are not of the PCB (Askarel) type, but studies have shown a small percentage of delivered equipment may have been contaminated through misapplication of the manufacturer's oil-filling equipment processes. SCE assumes that equipment manufactured in 1980 or earlier may be PCB-contaminated, unless additional information indicates otherwise.

If records indicate the equipment is manufactured during or after 1981, SCE assumes the equipment does not contain PCBs.

2.4 Pursuant to the requirement of the NPDES permit, accumulated water in utility vault structures shall not be automated or have unmonitored discharge without having determined the quality of the water. However, in special circumstances, a vault may require an Automatic Sump Pump (ASP). Do not install ASPs in any future utility vaults unless T&D Environmental Services concurs with Corporate Environmental Health and Safety. They must authorize it after a comprehensive site-specific assessment and feasibility evaluation.

To meet safety standards, utility vault structures must be dewatered before performing maintenance. An unknown, but likely small percentage, of the utility vaults are equipped with Automatic Sump Pumps (ASPs). To meet federal and state water quality regulatory requirements, ASPs, when discovered, shall be disabled and may be removed from vault structures. If an ASP cannot safely be removed, the ASP is to be left in manual mode or non-automatic for future monitored discharges of water from utility vault structures.

3.0 REFERENCES

3.1 U.S. Environmental Protection Agency (EPA) Regulations 40 CFR 761

3.2 California Code of Regulations Title 22, Division 4.5

3.3 State Water Resources Control Board's Statewide General NPDES Permit for Discharges from Utility Vaults and Underground Structures to Surface Water

3.4 EN Procedure EN–1, Oil Spill/Release Cleanup Procedures

4.0 OPERATIONS

The following steps have been developed to help employees evacuate water (dewater) from underground structures, restore service, and comply with applicable laws. After evaluating conditions to safely enter the underground structure, potential contamination of the water must be assessed before discharging (Attachment 2–1 [Page 2–14]).

4.1 Initial Inspection

A. Upon discovery of water in the underground utility vault, the field crew must visually inspect the water surface for the presence of oil (sheen or layer). Use a flashlight, if needed, and inspect the water surface. Oil sheen will appear as drops of oil floating on the surface of the water. An oil layer may be more difficult to detect, and may require a bailer test, as described in the next section.

B. Once the underground utility vault contents have been checked for oil, an evaluation of other potential contaminants must be made. The evaluation can be done both visually and by carefully detecting the odor of the water. Never test odor by breathing directly from or inside the structure. The following list includes examples of potential pollutants in a utility vault or underground structure, and potential indicators.

1. Sewage

   The presence of sewage in a utility vault may cause the water to appear black, or have a characteristic sewer smell. If the employee is potentially exposed to raw sewage, another person's blood or other potentially infectious material as defined in the Corporate Bloodborne Pathogen Exposure Control Program (EHS-CS-PG-009), ensure that TDBU's reporting-accidents-and-illnesses-at-work procedure is followed.

2. Vegetation

   The presence of vegetation in a utility vault should be easily detectable. If decomposing vegetation is seen, a decaying odor may also be present.

3. Sediment

   The presence of sediment in a utility vault may cause the water to appear brown and cloudy. Generally there is no additional odor due to sediment.

4. Chemicals or Solvents

   The presence of chemicals or solvents may cause the water to appear cloudy. A wide range of chemical odors may be present, including pesticide or chlorine odor.

5. Fuel or Oil Layer Hydrocarbons (Grease)

   Fuel, oil, or hydrocarbons will float on top of the vault water and may appear similar to oil sheen on pavement after rain. The odor of fuel will be the best method to determine its presence.

C. If any of the above pollutants, except sediment or oil sheen, is detected, the vault water may not be pumped to the storm drain. In this case, call your TDBU Environmental Specialist to schedule a vacuum truck to dewater the vault.

D. Other Confined Spaces (OCS)

   Verify that it is safe to enter the space prior to pumping (if applicable). An OCS is a space that meets both of the following conditions:

   - Existing ventilation is insufficient to remove dangerous air contamination, oxygen enrichment, and/or oxygen deficiency that may exist or develop.
   - Ready access to or exit from the space for the removal of a suddenly disabled employee is difficult due to the location and/or size of the opening(s).

   As defined in the Corporate Other Confined Spaces Operations (EHS-CS-PG-016), an OCS can be a room (including manholes) of fire-resistant construction primarily used to house electrical equipment. Generally, the structures applicable to this program are:

   - Underground electrical vaults
   - Underground electrical manholes
   - Telecommunications manholes and unvented vaults

4.2 Bailer Test

A. Using a flashlight, visually inspect the vault for water to detect an oil sheen/layer. If water or sediment is discovered, use an approved bailer (SAP 10142356) to take a water sample from the vault. The sample will give an idea of the solids and layers of liquid in the vault.

B. To use the bailer (Attachment 2–3 [Page 2–16]):

1. Use a one-quarter inch (1/4") cotton or fiber rope, tying the rope to the top of the bailer.
2. Lower the bailer into the vault. The water will enter the bottom of the bailer.
3. Fill the bailer from one-half to three-quarters full. The bailer has a ball check valve at the bottom that will seal once the water has entered it.
4. Raise the bailer out of the vault and look at the content of the water. The bailer contents will allow a visual determination of the amount of oil (sheen or layer) and sediments/solids in the water.
   - If the bailer sample shows the presence of oil sheen, the filter sock may be used once the presence of PCBs has been ruled out.
   - If the bailer sample shows a presence of an oil layer, the oil must be removed using a vacuum truck.

Note: *If a sample will be sent for laboratory analysis, use a **new** bailer. Do not reuse a bailer that has been used to sample other vaults. Even though a reused bailer may look clean, small quantities of contaminants may be present, which can distort lab results.*

C. If the sample has an oil sheen or oil layer, the equipment in the vault may contain PCBs. In this case, determine the manufacture date of the equipment before making a decision to pump the vault.

4.3 Determine PCB Content in Equipment (> 50 ppm)

If the bailer test confirms the presence of oil sheen/layer, follow these steps:

A. Call your Supervisor to check the manufacture date of the vault equipment. This information can be found in SAP (Material Management, Display Equipment Option). If all of the equipment in the vault was manufactured during or after 1981, treat the oil as non-PCB, and see Section 4.4 (page 7) for dewatering instructions.

B. If the equipment was manufactured in 1980 or earlier and the vault must be immediately dewatered to restore electrical service or respond to an emergency, assume the vault contains PCB oil and call your TDBU Environmental Specialist for a vacuum truck.

C. If the equipment was manufactured in 1980 or earlier and the vault project is not an emergency, verify with your Supervisor whether analytical information is available on the equipment in the vault.

- If analytical information is available and shows that there are no PCBs, continue to Section 4.4 (page 7).

- If analytical information shows the presence of PCBs, call your TDBU Environmental Specialist for a vacuum truck.

D. If the PCB content of the oil cannot be determined from prior lab tests, take a sample of oily water. Try to skim the sample off the top to get as much oil as possible.

Oil samples collected are to be sent to SSID for test analysis. A Chain-of Custody Record Form (Attachment 2–5 [Page 2–18]) must be submitted with each oil or oil-and-water sample. Specify on the form that PCB testing is required.

4.4 Removing Non-PCB Oil (<50) and Water from Underground Structures

Figure 2–1: Water Contamination Grading Standard

A. Clean Water Observed (Green)

Use an approved bailer to draw a water sample from the vault. This will indicate the level of contamination that may be in the structure, if an oily sheen or layer is visible. If the water appears clean (Figure 2–1 (page 7), green border) and there is no unusual odor or cloudy appearance, based on observation, it is acceptable to discharge the water from beneath the surface of the oil into the street or storm drain until the oil layer nears the level of the pump intake

Note: *When pumping a vault, with or without the filter sock, physically monitor/inspect the flow of water. Be sure the pump intake is raised 6 to 8 inches off the vault floor to avoid clogging the pump with sediment or debris.*

Constant visual monitoring must be done during dewatering procedures to ensure that no oily water or solids are discharged. If a sediment layer is encountered when pumping at the bottom of the vault, do not continue discharge to the storm drain.

Note: *Any remaining oil layer must then be pumped into 55-gallon drums or a vacuum truck and disposed of appropriately. If there are sediments or solids at the bottom of the vault, these must also be placed in 55-gallon drums.*

B. Low-Level Contamination (Yellow)

If the sample shows a low level of contamination, such as slightly cloudy or discolored, or has light sediment or oil sheen, (Figure 2–1 (page 7), yellow border), the filter sock (SAP 10149393) can be used for water evacuation.

Note: *If the water emits an unusual odor, or is colored or unusually cloudy, or contains a thick layer of oil,* ***do not*** *pump the water into the street or storm drain.*

1. Prior to setting up for vault pumping, complete an inspection of all equipment to ensure a safe environment. This equipment inspection should include, but not be limited to:

   Pump

   Inspect the pump for physical damage, cut or chaffed cables, debris at the inlet or outlets. If using a hydraulic pump, make sure the hydraulic seals are in good working order and not leaking. Leaking seals can quickly fill the filter sock and oil will begin to leak from the sock.

   Hose

   The operator should have sufficient hose in good working order to reach from the pump to as near the storm drain as possible. Inspect the hoses for:

   - cuts
   - pin holes or chaffed sections
   - fittings with tight seals and connections
   - all gasket/fitting seals

     Note: *If the fitting is not a 2-inch diameter female (matching the filter sock 2-inch male end) use an adapter.*

   Filter Sock (SAP 10149393)

   Inspect the filter sock to:

   - determine it is new and unused
   - check for cuts, tears or other imperfections that may prevent it from functioning as a filter device
   - ensure fittings are in good working order with no cracks, or chips

   Note: Do not reuse a filter sock. *A used sock may have a large amount of oil contained within its fibers that could quickly begin to leach out should more oil become present from the new pump operation.*

2. Discharging Vault Water Using an Approved Filter Sock

   a. Determine the location of the storm drain compared to the vault location after inspecting all equipment in the vault. This will determine how much hose should be used and where to roll it out, getting as close to the storm drain as possible.

      1) Take all necessary safety measures to prevent unauthorized personnel access into the work area.
      2) Connect the hose to the vault pump.
      3) Lower the pump down into the vault.
      4) Unroll the hose towards the storm drain. If required, add additional hose to get as close to the storm drain as possible.
      5) Remove the filter sock from the black pail.

6) Attach the filter sock to the end of the hose and lay it on a flat surface near the entrance to the storm drain.

7) Remove any debris between the filter sock and the entrance to the storm drain to prevent street debris from entering the drain.

b. Start the pump. While pumping the vault, be sure to:

1) Regularly inspect the outflow of water from the sock. Constant attention must be paid during dewatering procedures to ensure that no oily water or solids are discharged. Additionally, if the water flow weakens or the sock is filling up with sediment or oil, change the sock, as needed.

Note: *If the vault is large, or contains a significant load of sediment or oil, more than one sock may be required to treat the utility vault water. A new filter sock can filter flows greater than 100 gpm (depending on the pump used). During pumping, leave the truck engine at idle to maintain a constant amount of power to the pump. Once the filter sock becomes laden with sediment, flow will be reduced gradually.*

2) When installing a new filter sock, shut off the pump and replace the sock.

c. Once the pumping operations are complete:

1) Shut the pump off.

2) Pull the pump from the vault and disconnect from the hose.

3) Roll the hose towards the filter sock.

4) If there are multiple hoses, continue rolling hoses toward the filter sock and disconnect the hoses without allowing unfiltered water to escape.

5) When you reach the filter sock:

a) Disconnect from the hose, holding the fitting end up, and continue to drain.

b) Place the filter sock back in the black pail and screw the lid back on to seal in any liquid.

c) If multiple filter socks are used, place in 55-gallon drums and dispose of as non-hazardous waste.

C. Severe Contamination (Red)

If the water is severely contaminated (Figure 2–1 (page 7), red border) and emits an unusual odor or is unusually cloudy, ***do not*** pump the water into the street or storm drain using a filter sock. Additional contamination may be sewage, solids, vegetation, sediment, biological wastes, solvents, grease, chemicals or gasoline.

Contact your TDBU Environmental Specialist to schedule a contractor vacuum tanker.

4.5 Determining Asbestos Content

When entering an underground structure, visually inspect cloth-wrapped equipment to determine if it has been damaged. Based on the information in the SAP database, if cable or other equipment indicates that the manufacturer date is prior to 1980, contact your TDBU Environmental Specialist for guidance.

4.6 If a vacuum tanker is required:

A. Use the vault-pumping matrix to determine the amount of oily water in the utility vault (Attachment 2–7 [Page 2–20]).

B. To obtain a vacuum tanker and pressure washer:

1. During normal working hours, contact the TDBU Environmental Specialist for that area.
2. After-hours: Contact the Edison Operator (PAX 21212 or 800-621-8516) and ask for the on-call TDBU Environmental Specialist.

C. If a water wash-down is required (for example, oil on cables, large quantities of oil on walls or apparatus), request the appropriate equipment at the same time. Only an Edison-approved degreaser (for example, Simple Green) can be used to wash down vaults and equipment. See Section 4.7 (page 10) for pressure washing structures, equipment, components, and cable for further instructions.

D. A Remote Generation/Universal Waste/ERM Shipping Paper must accompany the shipment (Attachment 2–8 [Page 2–21]).

E. The tank on the vacuum tanker ***must*** be clean and empty before pumping the vault. Verify the tanker is clean. If the tanker is not clean, contact your TDBU Environmental Specialist.

4.7 Remote Site Disposal Procedures

A. Disposal Procedures (Waste Management Manual EHS-WW-MN-001)

Note: *If PCB testing is required, the drums or the vacuum tanker load* ***must*** *be held until the test analysis is complete.*

B. Use a Remote Generation/Universal Waste/ERM shipping paper (Attachment 2–8 [Page 2–21]) to transport.

1. When the results of the lab test are known, dispose of the oily water using the procedures in the Waste Management Manual (EHS-WW-MN-001). See labeling examples in Attachment 2–9 (Page 2–22) and Attachment 2–10 (Page 2–23).
2. If the oil fraction tests at 50 ppm PCB and greater, handle the oil and water as PCB waste. Pump the oil into approved 55-gallon drums and ship them to the respective work location within 10 days.
   a. Label the drums with the standard hazardous waste label and the yellow-and-black “Caution Contains PCBs” label.
   b. Write on top of the drums: “PCB/WATER” (if mostly water), or “PCB/OIL” (if mostly oil).
   c. Mark each drum with date of removal, and point of origin (work location).
   d. Tape a copy of the lab test report (once received) on each drum.
3. Keep a copy of the Department of Toxic Substances Control Transportation Registration Variance in the vehicle's glove compartment. The TDBU Environmental Specialist will provide the Transporter Variance.

4. Decontaminate the underground structure according to the PCB spill cleanup described in EN-1: Oil Spill/Release Cleanup Procedures.
5. Notify your TDBU Environmental Specialist of the incident, within 1 hour, after receiving notification that the mixture is 50 ppm PCB or greater.

C. Quantity limitations for remote sites are:

1. 1,600 gallons of vault water classified as non-RCRA hazardous waste in a shipment.
2. 500 gallons of other liquid (non-RCRA) hazardous waste in a shipment.
3. 275 gallons or 2500 pounds of non-RCRA hazardous waste (whichever is greater) from a spill cleanup.

Note: *If the water in the underground structure exceeds the quantities for a remote site, contact your TDBU Environmental Specialist to schedule a vacuum tanker.*

4.8 Pressure-Washing Underground Structures, Equipment, Components, and Cable Once Water Has Been Evacuated

A. When it is necessary to pressure-wash structures, equipment, components, and cable by SCE crews or contractor crews, the following procedure shall apply.

Note: *Do not use a steam cleaner on cables or components. Also,* ***do not*** *allow cleanup contractors to enter "energized" vaults.*

1. Use the approved protective face shield and rain gear.
2. Visually inspect and heat-scan (if applicable) all equipment, components, and cable to be washed. Additionally, perform appropriate oxygen monitoring, if applicable.
3. At the Electrical Crew Supervisor's discretion, request "NO TEST ORDERS" on the circuit or circuits to be washed in the structure.
4. When movement of transmission cable or splices or removal of arc-proofing protection is required, the circuits must be de-energized prior to starting work. When it is necessary to wash in transmission vaults and no cables or splices, "HOT LINE ORDERS" shall be taken on all energized circuits. In the event shield arresters are in the vault, the arresters must be grounded.

Note: *Only approved SCE spill cleanup contractors shall be used to perform or assist in any cleanup activities. Such approved spill contractors shall not perform cleanup procedures within enclosed structures (for example, BURD, CST, Vaults) unless the structure has been de-energized, and only under the direction of a qualified SCE or contract electrical worker.*

5. Clean structures, equipment, components, and cable with Simple Green (SAP 10153434). The degreaser mixture should be adjusted so that the solution just begins to make suds (excessive suds will leave a residue).

Note: *After applying the degreaser solution and completing the cleaning process, including pressure washing, be sure to rinse off any residue left on the equipment and cables.*

6. The temperature and pressure of the power washer shall be:

a. Water temperature 125°–135°F.

b. Water pressure 60–90 psi at the wand tip.

7. De-energize and/or repair any abnormal equipment, component, or cable condition prior to washing.
8. Hand-taped splices shall not be pressure-washed. Instead, use a garden-type Hudson sprayer in conjunction with hand-cleaning. Care must be exercised to ensure that no solution penetrates any splice or component. This does not preclude the use of pressure-washing on cable in looped transmission vaults where the cable jacket is continuous and there are no splices or shield arresters/grounds to compromise the integrity of the cable jacket.
9. When washing pre-molded components, use extreme care not to direct the high-pressure water solution directly at the components. Water and contaminants may be forced past the seal and compromise the integrity of the component. An alternative to spraying components with the pressure washer is to use a garden-type Hudson sprayer (not supplied with the washer truck).
10. When washing equipment, use extreme care not to direct the high-pressure water solution directly at any equipment sealing points (for example, switch lids, dry fuse wells of BURD equipment) as water and contaminants may be forced past the seal and into the equipment.
11. Generally, washing the structure from the top of the structure (for example, equipment, cable) to the bottom will provide the best results.
12. Once the vault has been pressure washed, ensure that no degreaser residue remains on equipment and cables and evacuate the contents into approved 55-gallon drums or a vacuum tanker and transport it to the work location.

4.9 Vaults with Automatic Sump Pumps

A. The NPDES permit regulates discharges from utility vaults. Vault water discharges shall not contribute pollutant loading to the receiving water. Use of ASPs in an activated and unmonitored state increases the potential of non-compliance with the permit. Therefore, it has been recommended that all ASPs be deactivated and could be removed until such time that a long-term solution can be achieved or new technology is deployed. In special circumstances, it may be required to have an ASP in the vault. If so, your TDBU Environmental Specialist will contact Corporate EH&S for a site-specific assessment and evaluation of compliance risks prior to allowing and leaving the ASP in automatic.

B. If the water is found to be contaminated, verify the ASP is in the OFF position and contact your TDBU Environmental Specialist.

5.0 MAINTENANCE

5.1 Special Equipment

The following items should be stocked at the work location:

- 2-ounce glass bottle for oil sampling
- 1-liter (glass or plastic) bottle for water sampling
- 55-gallon UN-approved drum with two-bung head for liquids (SAP 10157806)
- Remote Generation/Universal Waste/ERM Shipping Paper (SCE 37-410)

5.2 Maintenance Records

TDBU Environmental Services will maintain records of all PCB or contaminated mineral-oil spills and cleanups. Additionally, records are kept at the Material Testing Lab for three years.

6.0 ATTACHMENTS

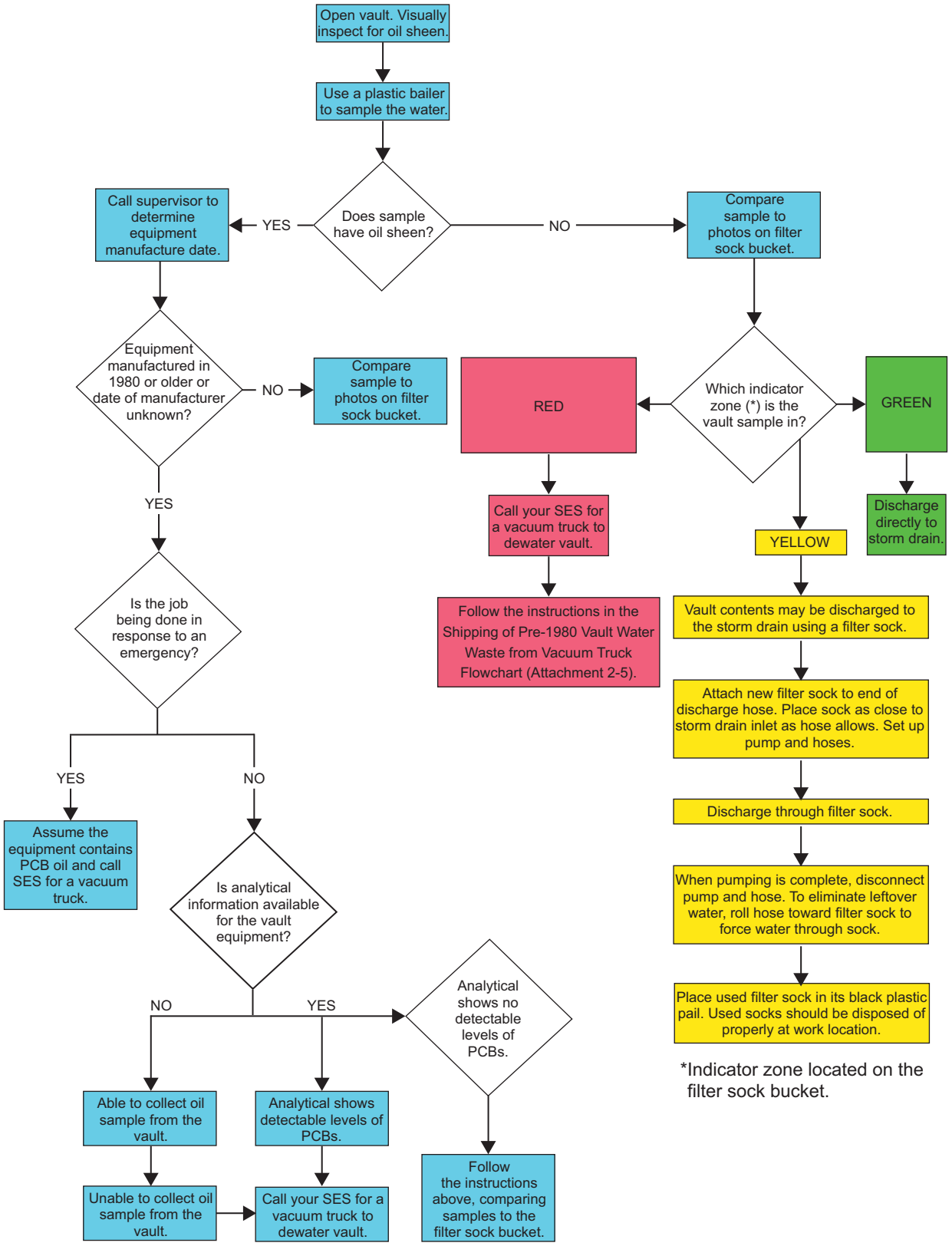
Attachment 2–1: Special Provision

The operator shall report any non-compliance that may endanger health or the environment. Immediately provide any information to the TDBU Environmental Specialist.

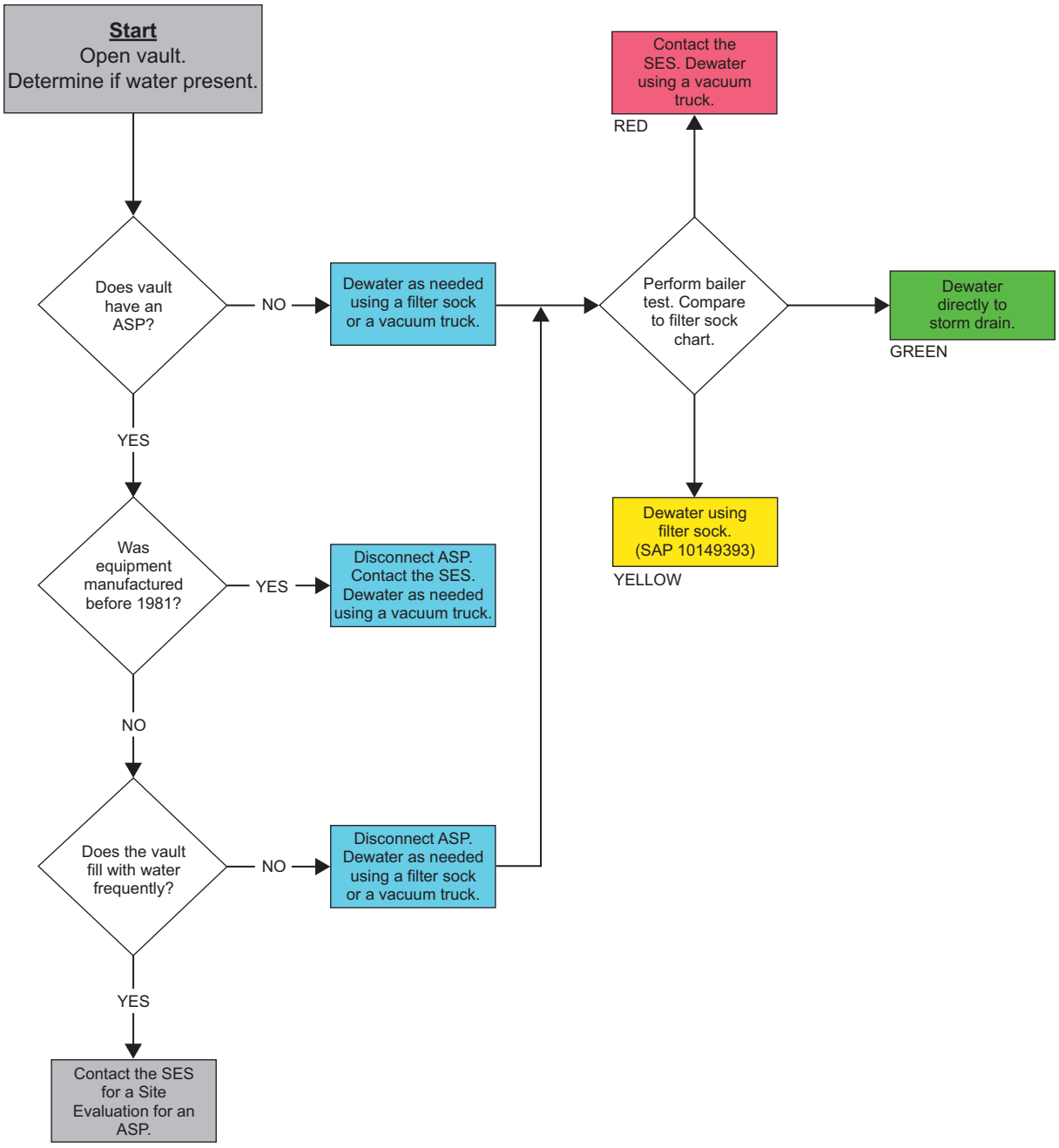
SCE Operating Procedures with the City of Ventura

SCE owns and operates a number of underground vaults within the city limits of Ventura, 16 of which are within the dry weather diversion area (Attachment 2–11 [Page 2–24] and Attachment 2–12 [Page 2–25]). These underground structures may inadvertently collect runoff over irrigation or groundwater. SCE has proactively disconnected all ASPs in the underground structures within the dry weather diversion areas. Accumulated water must then be evacuated only by vacuum truck, during the dry weather season (April 1 to October 31). Contact your TDBU Environmental Specialist for additional information, if required.

Attachment 2–2: Vault Dewater Procedure



Attachment 2–3: Automatic Sump Pumps in Vaults



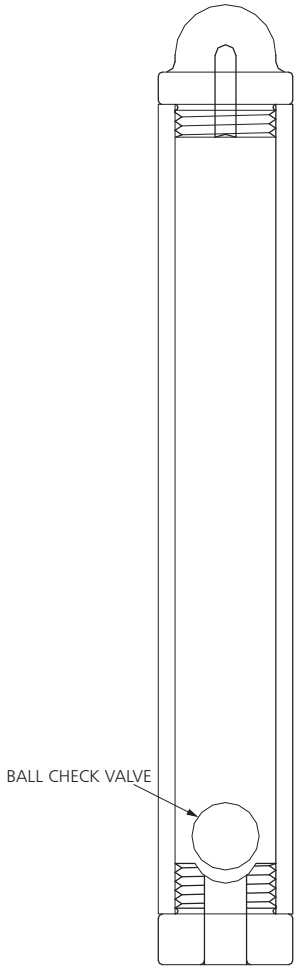
Attachment 2–4: Bailer Use

Instructions

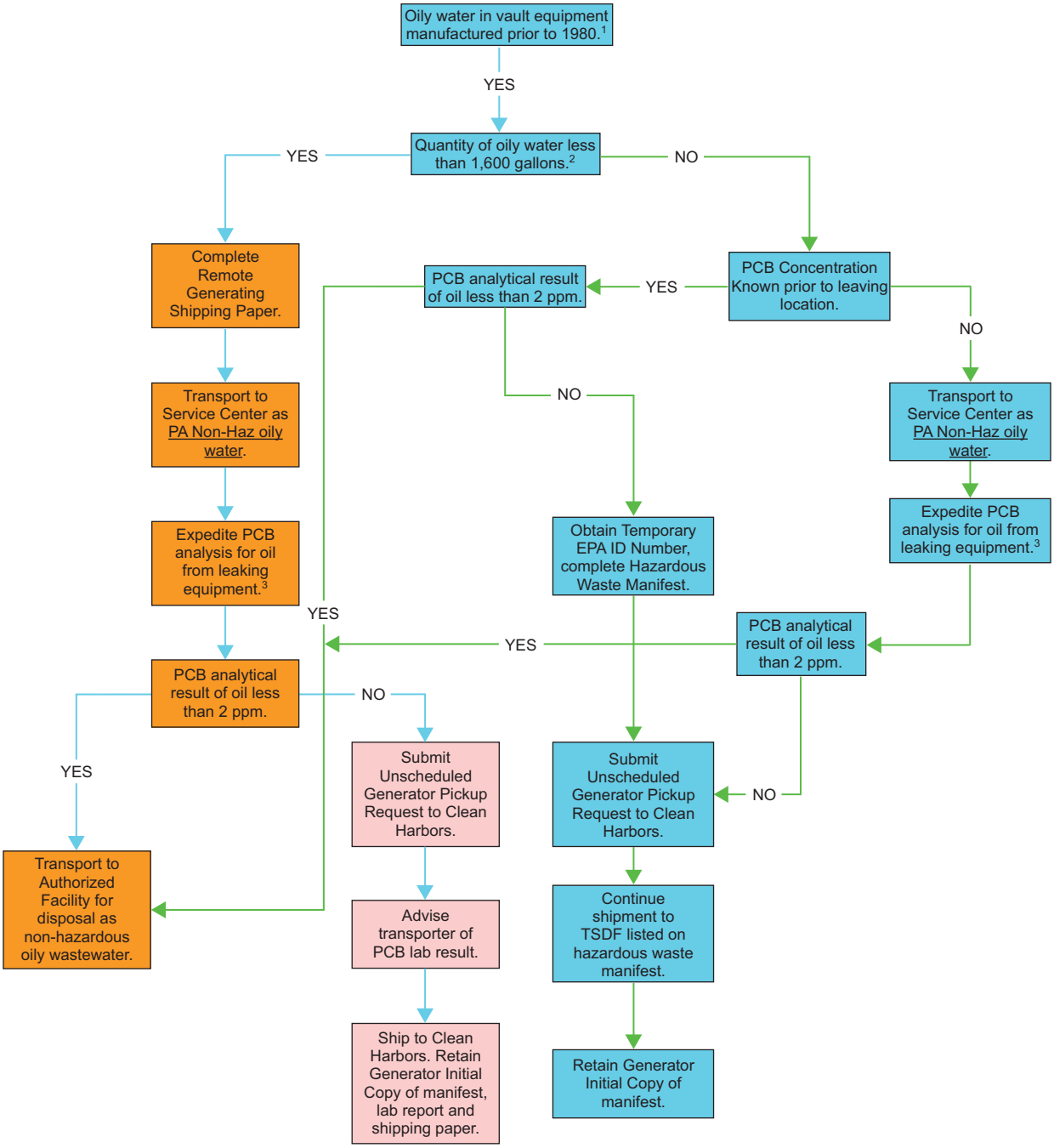
1. Use a 1/4-inch cotton or fiber rope and tie it to the top of the bailer.
2. Lower the bailer into the vault and the fluid will enter the bottom of the bailer.
3. Fill the bailer one-half to three-quarters full.
4. Fluid can be poured out through the top hole in the bailer.
5. Rinse with clean water after every sample.

Note: *The bailer can be used only once if it is used to collect a suspected PCB sample that will be sent to SSID or another laboratory for analysis.*

Figure 2–2: Bailer



Attachment 2–5: Shipping of 1980 or Older Vault Water Waste from a Vacuum Truck



[1] Oily water is shipped in vacuum truck.
[2] If PCB concentration is less than 2 ppm, the shipment may be sent to the TSDF without sending to Service Center.
[3] Samples shall be taken from the source oil in the equipment.

Attachment 2–6: Chain of Custody Record (SCE 16-312)

SOUTHERN CALIFORNIA EDISON®
An EDISON INTERNATIONAL® Company

CHAIN OF CUSTODY RECORD

1 CUSTOMER CONTACT NAME: **PHONE NUMBER:** **EMAIL ADDRESS:** **FAX:**

2 IF SAMPLE DELIVERED BY PONY: **PRINT PONY LOCATION:**

3 PROJECT NAME *(If Any)*: **SEND ANALYTICAL RESULTS TO:** ☐ **Via Email** ☐ **Via Fax**

4 PROVIDE VALID SAP ACCOUNTING:

LAB ADDRESS: Materials Testing Lab 7351 Fenwick Lane, Westminster, CA 92683 TEL #: (714) 895-0522 PAX: 54522
Working Hours: M-F 7:00 AM – 3:30 PM (24 Hrs Emergency Services Available; Contact Edison Operator)

For Lab Use Only Lab ID	5 Unique Sample Number	6 Sampling Location Address (Field/District/Substation)	7 Structure Number *(If Applicable)*	8 Equipment Type and/or Phase	9 Equipment Compartment	10 Serial Number *(PRINT CLEARLY)*	11 Gallons	12 Sample Date	Time Sampled	14 Matrix	15 Tests: PCB	TPH	Other

16
Sample(s) Collected by (Name): Signature: Preservatives Used: Yes ☐ No ☐

Relinquished By: Date: Time: Received By: Date/Time

Relinquished By: Date: Time: Received By: Date/Time

Relinquished By: Date: Time: Received By: Date/Time

17 IF SAMPLE DELIVERED IN PERSON:
YOUR NAME: YOUR PHONE #:

18 TURNAROUND TIME:
- ☐ **Normal (3-5 Days)**
- ☐ **Same Day (100% Surcharge)**
- ☐ **24 Hrs. (75% Surcharge)**

19 COMMENTS *(If Any)*:

20 *Fill This Section Only If Applicable*
If Sample is From a Spill:
Oil Spill Number:

SCE 16-312 REV 10/09 (CW)

COPY DISTRIBUTION: White - Material Testing Lab, SSID, Canary - Emergency Response Vendor, Pink - Edison Generator, Goldenrod - Safety and Environmental Specialist (SES)

Attachment 2–7: Filter Sock Job Aid

Filter Sock - 10149393

SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL® Company

Bailer Samples

IF THE WATER SAMPLE FROM THE VAULT APPEARS LIKE ONE OF THE SAMPLES IN THE GREEN OR YELLOW ZONES (PICTURED ABOVE), THE FILTER SOCK MAY BE USED. IF THE SAMPLE IS MORE LIKE ONE OF THE THREE SAMPLES IN THE RED ZONE, A VACUUM TRUCK MUST BE USED.

STEP 1: OPEN VAULT AND CHECK FOR OIL SHEEN.

STEP 2: USE BAILER TO CHECK FOR OIL/SEDIMENTS, ODOR, AND COLOR. DETERMINE DISCHARGE OPTIONS.
IF THE SAMPLE IS IN THE GREEN OR YELLOW ZONE, YOU CAN USE THE FILTER SOCK.
IF THE SAMPLE IS IN THE RED ZONE, CALL YOUR SAFETY & ENVIRONMENTAL SPECIALIST FOR FURTHER ASSISTANCE.

STEP 3: ONCE IT IS DETERMINED THAT A FILTER SOCK CAN BE USED, ATTACH DISCHARGE HOSE TO THE FILTER SOCK.
***** ONLY OPERATE PUMP WITH ENGINE AT IDLE WHEN USING A FILTER SOCK *****

STEP 4: DISCHARGE VAULT WATER CLOSE TO STORM DRAIN AND CONTINUOUSLY MONITOR DURING DISCHARGE.

STEP 5: ONCE DISCHARGE IS COMPLETE, DISCONNECT FILTER SOCK AND PLACE BACK INTO THE BUCKET. RETURN BUCKET BACK TO WORK LOCATION FOR PROPER DISPOSAL.

Filter Sock Bucket

Attachment 2–8: Vault Pumping Matrix

Table 1: Approximate Volume (Gallons) of Liquid in Underground Structures

Basic Structure Size Width x Length (ft)	Depth of Liquid Contained in Structure (ft)								
	1	2	3	4	5	6	7	8	9
3 x 3	70	140	200	270	340	400	480	540	600
4 x 4	120	240	360	480	600	720	840	960	1,100
4 x 7	210	420	630	840	1,000	1,300	1,500	1,700	1,900
5 x 8	300	600	900	1,200	1,500	1,800	2,100	2,400	2,700
6 x 8	360	710	1,100	1,400	1,800	2,200	2,500	2,900	3,200
6 x 10	450	900	1,300	1,800	2,200	2,700	3,100	3,600	4,000
8 x 14	840	1,700	2,500	3,400	4,200	5,000	5,900	6,700	7,500
8 x 18	1,100	2,200	3,200	4,300	5,400	6,500	7,500	8,600	9,700
8 x 22	1,300	2,600	4,000	5,300	6,600	7,900	9,200	10,500	11,800
8 x 24	1,400	2,900	4,300	5,700	7,200	8,600	10,100	11,500	12,900

Example: A 6 ft x 8 ft vault with 4 ft of water has approximately 1,400 gallons of liquid.
Example for Non-Standard Size Structures: Approximately 7.5 gallons per cubic foot are in structure. To determine total volume of water, multiply length x width x depth x 7.5 = gallons of water.

Attachment 2–9: Internal Shipping Form (SCE 37-410)

SOUTHERN CALIFORNIA EDISON®
An EDISON INTERNATIONAL® Company

Page ____ of ____

Remote Generation/Universal Waste/ERM Shipping Paper

Use this form only for internal shipments

Section A. General Information

Name of Carrier:		Delivery Point Address:	
Pickup Point:		City, State of Delivery Point:	
City, State of Pickup Point:		Phone Number of Delivery Point:	
Date of Generation:		Date Delivered to Consolidation Site:	
Name of Driver:			
Serial No. / Structure No.:			

Section B. Hazardous Waste, Remote Generation

No. & Types of Pkgs	HM	Shipping Name	Type of Waste	Total Net Amount (Weight)
		Non-DOT Regulated PCBs (< 1 lb)	Paper Insulated Lead Cable ≥ 50 ppm PCB	
		Non-RCRA Hazardous Waste, Liquid, Non-DOT Regulated < 1 lb PCB	Oil **PA – Used Oil**	
		Non-RCRA Hazardous Waste, Liquid, Non-DOT Regulated < 1 lb PCB	Oily Water (< 10% Oil) **PA – Hazardous Oily Water**	
		Non-DOT Regulated PCBs (< 1 lb)	Oily Water (≥ 5 and < 50 ppm PCB)	
		Non-DOT Regulated PCBs (< 1 lb)	Oil (≥ 5 and < 50 ppm PCB)	
		Non-DOT Regulated PCBs (< 1 lb)	Oil (Containing ≥ 50 ppm PCB) **PA – PCB Oil**	
		Non-DOT Regulated PCBs (< 1 lb)	PCB Debris (Contaminated with Source Oil ≥ 50 ppm PCB) **PA – Debris**	
	X	RQ, UN2315, Polychlorinated Biphenyls, Liquid, 9, PG III	Oil (≥ 1 lb PCB in One Container)	
	X	RQ, UN3432, Polychlorinated Biphenyls, Solid, 9, PG III	Debris/Soil Contaminated w/PCB (≥ 1 lb PCB)	
	X	RQ, Asbestos, NA 2212, 9, PG III		

If Section B is completed, both Copy A and Copy B are filed at the delivery point.

Section C. Universal Waste/Excluded Recyclable Materials Shipments

Quantity	Type of Universal Waste/ERM

If Section C is completed, Copy A (white) is filed at the delivery point and Copy B (yellow) is filed at the pickup point.

24-Hr Emergency Response — (800) 451-8346 (3E Company)
Generator, SCE Operator — (626) 302-1212

Driver Signature: _____ Date: _____

This record to be retained for 3 years in your facility's EH&S files.

SCE 37-410 REV 8/09 (CW)

Copy A

Attachment 2–10: Waste Container Labeling

NON-HAZARDOUS WASTE

GENERATOR INFORMATION

Southern California Edison Company — Phone (626) 302-1212

Site Name

Address

City State ZIP

MATERIAL INFORMATION

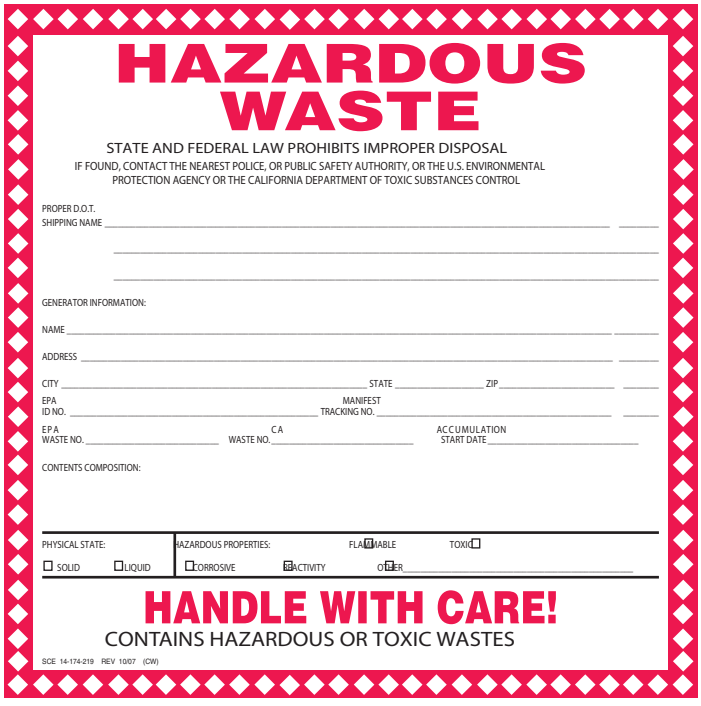
Accumulation Start Date / /

Contents Composition

Physical State ☐ Liquid ☐ Solid

SCE 37-366 REV 8/07 (CW)

SCE Non-Hazardous Waste Label (SCE 37-366)



HAZARDOUS WASTE

STATE AND FEDERAL LAW PROHIBITS IMPROPER DISPOSAL

IF FOUND, CONTACT THE NEAREST POLICE, OR PUBLIC SAFETY AUTHORITY, OR THE U.S. ENVIRONMENTAL PROTECTION AGENCY OR THE CALIFORNIA DEPARTMENT OF TOXIC SUBSTANCES CONTROL

PROPER D.O.T. SHIPPING NAME

GENERATOR INFORMATION:

NAME

ADDRESS

CITY STATE ZIP

EPA ID NO. MANIFEST TRACKING NO.

EPA WASTE NO. CA WASTE NO. ACCUMULATION START DATE

CONTENTS COMPOSITION:

PHYSICAL STATE: ☐ SOLID ☐ LIQUID

HAZARDOUS PROPERTIES: ☐ CORROSIVE ☒ REACTIVITY FLAMMABLE ☐ TOXIC ☐ OTHER

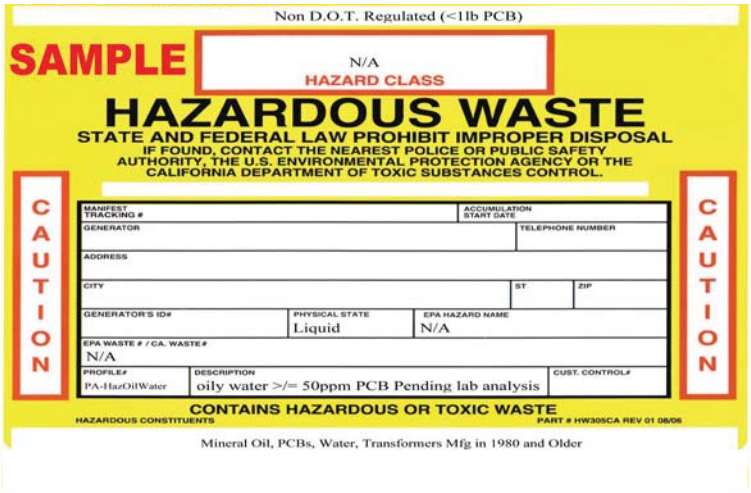
HANDLE WITH CARE!

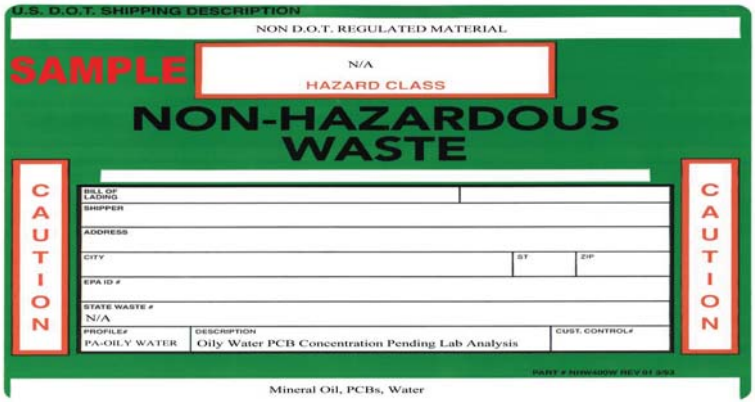
CONTAINS HAZARDOUS OR TOXIC WASTES

SCE 14-174-219 REV 10/07 (CW)

SCE Hazardous Waste Label (SCE 14-174-219)

Attachment 2–11: Pending Analysis Labeling





Attachment 2–12: Ventura County Operating Procedures

Attachment 2–13: Ventura County Underground Utility Structures

	SCE Underground Utility Structures Within the City of Ventura Dry Weather Watersheds				
	Structure#	Dimensions	Results	Sump pump	Maximum Gallon
1	V5033309	6′x 12′x 9′4″	Dry	Yes	5,025
2	V5033540	8′x 14′x 9′4″	Dry	Yes	7,816
3	M5033310	4′x 4′x 5′	Dry	No	598
4	M5033311	4′x 4′x 5′	Dry	No	598
5	V5033622	8′x 22′ x 9′4″	Dry	Yes	12,283
6	V5033395	8′x 22′ x 9′4″	Dry	Yes	12,283
7	V5033831	8′x 22′ x 9′4″	Dry	No	12,283
8	CST5182855	5′x 8′6″ x 7′	14″ Water	No	2,225
9	V5182854	14′ x 8′ x 9′4″	Dry	Yes	7,816
10	CST5179620	5′ x 8′ x 7′	20″Water	No	2,094
11	V5033596	8′ x 22′ x9′4″	Dry	No	12,283
12	CST5182861	8′6″ x 5′ x 7′	Dry	No	2,225
13	V5034424	22′ x 8′ x 9′4″	Dry	No	12,283
14	V5034422	14′ x 8′ x 9′4″	Dry	No	7,816
15	M5033353	5′ x 4′ x 7′	Dry	No	1,047
16	M5033323	5′ x 4′ x 7′	Dry	No	1,047
				Maximum	
				Total Gallons	**99,722**

ATTACHMENT 3: UTILITY VAULT DEWATERING VIDEO

< See Attached DVD >

ATTACHMENT 4: FILTER SOCKS

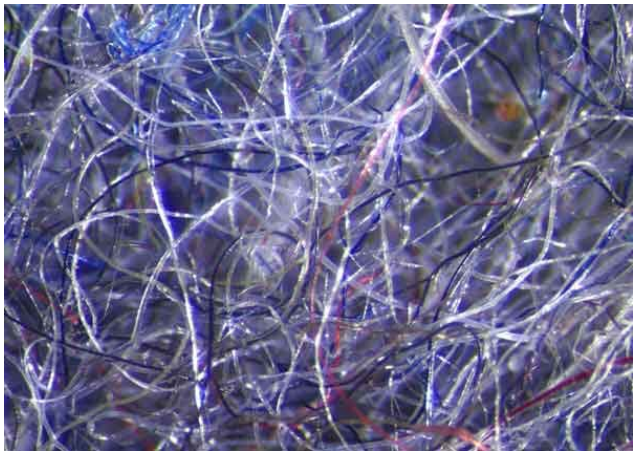
XTEX VAULT PUMPING SOCK

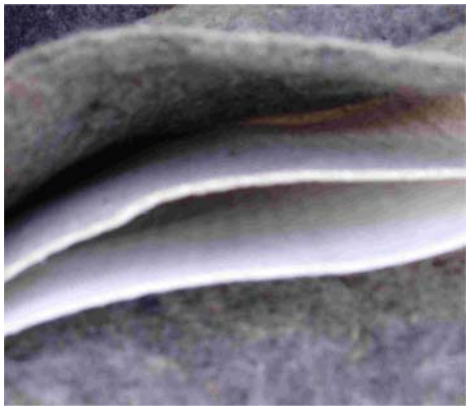
ADSORBENT SOCK 5in X 50in OIL/RUST TYPE
PUMP FILTER SOCK WITH 2in QUICK CONNECT DISCHARGE ADAPTOR AND HANDLING PAIL. MADE OF XETEX DOUBLE LAYERED FILTRATION FABRIC FOR FILTERING **RUST**, SILT, **OIL**, OIL SHEEN WHEN PUMPING **VAULTS** AND SUMPS

XTEX VAULT PUMPING SOCK INCLUDES

1 – 5 Gallon DOT approved transport pail with liquid sealing lid and handle
1 – 5” X 50” XTEX Oil / Rust filtering sock banded to 2” quick connect adaptor
1 – Instruction Sheet
1 – Material Safety Data Sheet

- The Xtex **<u>Gray material</u>** is a lipophilic, hydrophobic polymatrix blend of treated fibers
    - **Adsorbs 10 times its weight in hydrocarbons *approx. 4 gal per sock***
    - ***EPA Listed sorbent***





- The Xtex **<u>White material</u>** is a special blend of copolymer fibers.
    - **Special binding allows high flows of water while retaining sub-micron particles**

- Staged Multi-layers further enhances the flow and filtering capabilities
    - **Layer Oil Adsorbing**
    - **Layer sediment filtering**
    - **Layer final sediment reduction**
    - **Layer water polishing**

PAIL – 5 Gallon HDPE (Regrind/recycled Plastic) Teflon Gasket Seal

HOSE FITTING - 2" Male Adaptor (cam lock type) X 2" Male NPT Poly Propylene X 4" Hose. Secured with Stainless Steel Hose band.

FILTER SOCK - 5" X 50" Four layer Poly-matrix. 50% of fibers are of recycled origin. EPA Listed Sorbent

Simply remove the XTEX VAULT MAINTENANCE sock from the UN certified liquid tight pail. Connect it's quick connect adaptor to a hose. Place the sock near an entrance to a storm drain and pump out the vault water. The sock is made of a special material that adsorbs up to 15 times it's weight in OIL as well as filtering RUST and silt down to a sub-micron in size. Can filter up to 250 GPM.

XTEX ENVIRONMENTAL VAULT PUMP SOCK INSTALLATION AND OPERATIONS MANUAL

OVERVIEW

Xextex has developed an **ENVIRONMENTAL VAULT PUMP SOCK,** designed for removal of suspended solids and oils from water discharge operations in underground vaults. The sock was designed to remove two problematic environmental concerns in one simple application. Prior art of water discharge has been to evacuate the stagnant water with in vaults by pumping into existing storm drains or to pump the contaminated water into vacuum trucks and have the water treated prior to discharge. The first method was beset with regulatory penalties and the second with excessive disposal charges. A third alternative to pumping out vaults is the **XTEX ENVIRONMENTAL VAULT PUMP SOCK**

State of the art today is **The Xextex fabric blend.** These materials are manufactured as layers in a staged Environmental vault Sock to filter suspended solids (as fine as rust) and oil removal using the patented X-tex oil adsorbent fabric and second XTEX proprietary pre-filter in a four layer design.

SCOPE

The XTEX ENVIRONMENTAL VAULT PUMP SOCK should be included as part of an overall BMP (Best Management Practices) system, including the correct pump, hose and connectors. The XTEX ENVIRONMENTAL VAULT PUMP SOCK used properly will help insure sound environmental and economical practices in evacuating utility vaults. Use of The XTEX ENVIRONMENTAL VAULT PUMP SOCK should be closely monitored.

The XTEX ENVIRONMENTAL VAULT PUMP SOCK consist of

1. (1) 5” X 50” multilayer filter sock
(FOR BEST OPERATION DO NOT TO EXCEED 250 GPM)
2. (1) ABS Sock to Quick connect adaptor
3. (1) Stainless Steel band factory installed to bind sock to adaptor
4. (1) 2” Polypropylene quick connect adaptor pre-threaded onto the sock female thread adaptor.
5. (1) Black 5 gallon U.N. Certified pail with sure seal screw top pail lid. Both made of environmentally friendly recycled HDPE. ***This pail aids in protecting the XTEX ENVIRONMENTAL VAULT PUMP SOCK while traveling as well as keeping the oil/water from leaking in the truck once the XTEX ENVIRONMENTAL VAULT PUMP SOCK has been used.***
6. (1) XTEX Material Safety Data Sheet
7. (1) Basic use instructions
8. (1) SCE MAC number clearly marked on the outside of the pail

PUMPING PROCEEDURE

INSPECTION

All vault pumping operations should be preceded by a visual inspection of all equipment to be used as well as an inspection of the vault water to be pumped. The inspection should include surface inspection of the vault water as well as subsurface inspections.

EQUIPMENT
Prior to setting up for vault pumping an inspection of all equipment should be completed to insure a safe efficient vault water evacuation. This equipment inspection should include (but not be limited to):

PUMP
The pump should be inspected for physical damage, cut or chaffed cables, debris at the inlet or outlets. If using a hydraulic pump, make sure the hydraulic seals are in good working order and not leaking. Leaking seals can quickly fill the XTEX VAULT PUMPING SOCK and oil will begin to leak from the sock.

HOSE
The operator should insure they have sufficient hose in good working order as to reach from the pump, to as near the storm drain as possible. The hose(s) should be inspected for cuts, pin holes or chaffed sections that could weaken under pressure and leak unfiltered water onto the street and/or down into the storm drain. Further the hose should be checked at the fittings for tight seals and solid fittings/connections. This inspection should include all gasket/ fitting seals.

XTEX ENVIRONMENTAL VAULT PUMP SOCK
The sock should be inspected to insure it is new and unused. A used sock may have a large amount of oil contained within its fibers which could quickly begin to leach out should more oil become present from the new pump operation. The sock should be checked for cuts, tears or other imperfections that may prevent it from functioning as a filter device. Finally the fittings should be closely inspected to make sure it is in good working order with no cracks, or chips and the Stainless Steel band is tightly secured.

INSPECTION SURFACE
The vault water surface inspection is to determine oil content. Under normal conditions some oil sheen is expected on the surface of water in a utility vault. As the XTEX VAULT sock is designed to filter oil from water it is limited to a few gallons. Should your visual inspection prove more than an oil sheen, a method other than the XTEX ENVIRONMENTAL VAULT PUMP SOCK should be used E.G. Vacuum Truck Pumping?

If pumping commences under these conditions
The XTEX ENVIRONMENTAL VAULT PUMP SOCK *will fill quickly and have to be changed often. This can be observed by an oil sheen coming off the* XTEX ENVIRONMENTAL VAULT PUMP SOCK *as it becomes over laden with oil.*

INSPECTION SUB-SURFACE

The Sub-Surface inspection is to determine the solids or sediment content of the vault. As the XTEX ENVIRONMENTAL VAULT PUMP SOCK is designed to filter rust and sediment, this function also has it limitations. The XTEX ENVIRONMENTAL VAULT PUMP SOCK will hold less than (1) cubic foot of debris and sediment. If the Sub-Surface inspection proves a large amount of mud or other sediment several inches deep, this may not be a good application for a submersible pump. Most submersible pumps are not designed to pump large volumes of sand, mud or other sediment.

If pumping commences under these conditions
1] The XTEX ENVIRONMENTAL VAULT PUMP SOCK *will fill quickly and have to be changed often*
2] The pump seals may fail from abrasion
3] The pump motor may over heat from friction and shut off or fail completely

SET-UP

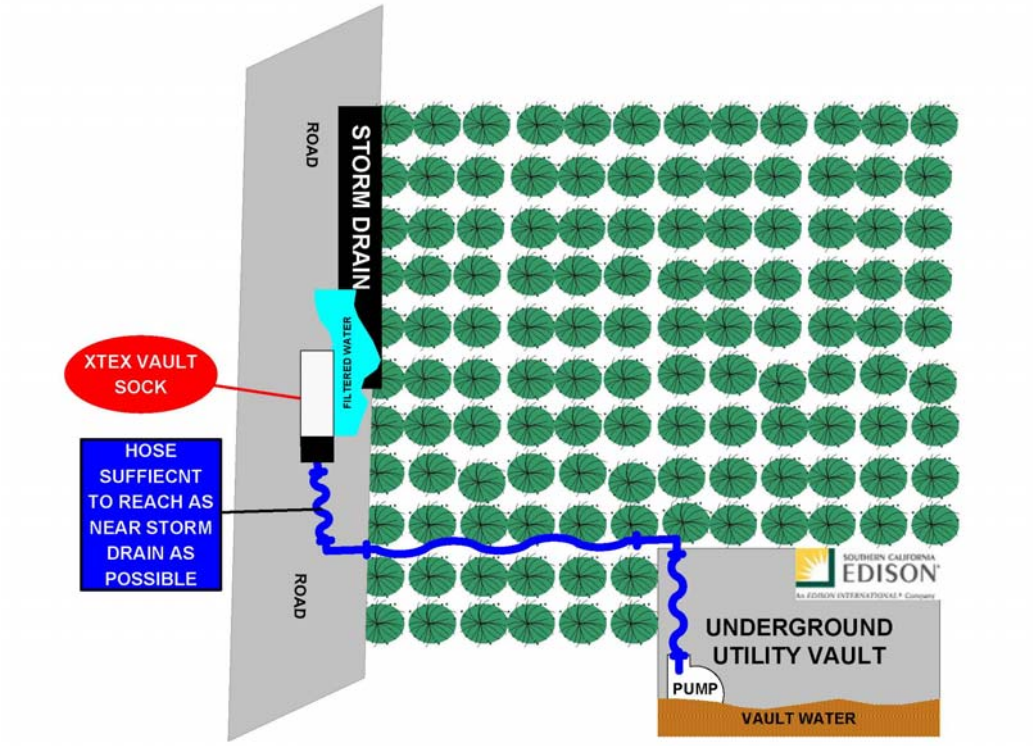
Once all equipment and the vault are inspected, it will be important to determine where the storm drain is as compared to the vault location. This will be important to decide how much hose should be used and where to roll out the hose to get as close to the storm drain as possible.

Connect the hose to the vault pump. Lower the vault pump down into the vault. Unroll the hose towards the storm drain. If required, add additional hose to get as close to the storm drain as possible. Attach the XTEX ENVIRONMENTAL VAULT PUMP SOCK to the end of the hose and lay it on a flat surface near the entrance to the storm drain. (Be sure to remove any debris between the XTEX ENVIRONMENTAL VAULT PUMP SOCK and the entrance to the storm drain to prevent drain by-pass, and entrainment of street debris into to the drain.).

Start the pump. While pumping the vault, be sure to regularly inspect the outflow of water from the sock. It will be important to view the outflow to see when the sock is filling up with sediment or oil and change the sock as needed. A new XTEX ENVIRONMENTAL VAULT PUMP SOCK will typically exceed flows of 100 GPM (depending on the pump used). Once the XTEX ENVIRONMENTAL VAULT PUMP SOCK becomes laden with sediment, flow will be reduced dramatically. At this point the pump should be shut off, and the sock replaced.

Note that if the XTEX ENVIRONMENTAL VAULT PUMP SOCK is placed well upstream from the storm drain inlet THIS IS NOT THE DESIRED SET UP. Most cities require the path between the vault outflow and storm drain inlet, be clear of debris and sediment prior to pumping as to prevent debris from being washed down the storm drain and to the water ways.

TYPICAL SET-UP



To fully utilize all benefits of The XTEX ENVIRONMENTAL VAULT PUMP SOCK, it is necessary to keep all components of the vault pumping system in good working order. A new XTEX ENVIRONMENTAL VAULT PUMP SOCK will typically flow over 100 GPM (depending on the pump used).

Once the XTEX ENVIRONMENTAL VAULT PUMP SOCK becomes laden with sediment, flow will slow dramatically. At this point the pump should be shut off and the sock and replaced as required.

Should you notice slight oil sheen begin to form the pump should be shut off and the sock and replaced as required.

Should you notice a leak in any component, hose, fittings, quick connect fitting or sock, the pump should be shut off and the hose or sock replaced as required.

TEAR DOWN

Once the pumping operations are complete, shut the pump off. Pull the pump from the vault and disconnect from the hose. Roll the hose towards the XTEX ENVIRONMENTAL VAULT PUMP SOCK. If there are multiple hoses, continue rolling hoses towards the XTEX ENVIRONMENTAL VAULT PUMP SOCK and disconnecting the hoses without allowing unfiltered water to escape. When you reach the XTEX ENVIRONMENTAL VAULT PUMP SOCK, disconnect from the hose holding the fitting end up as to continue to drain. Place the XTEX ENVIRONMENTAL VAULT PUMP SOCK back in its pail and screw the lid back on as to seal any liquid in the pail.
ALWAYS APPLY All SOUTHERN CALIFORNIA EDISON STANDARDS AND PROCEEDURES FOR HANDLING AND DISPOSAL.

ATTACHMENT 5: ECOPUMP

SOUTHERN CALIFORNIA EDISON®
An EDISON INTERNATIONAL® Company

EcoPump Prescreening Evaluation Form

Address and/or GPS_____

Vault Number: _____ **District:**_____

- The purpose of this form is to obtain preliminary information to determine the suitability of EcoPump installation at a proposed underground vault.
- EcoPump installation requires approval by Corporate Environmental Health and Safety (CEHS) Water Quality Section.
- Please return this form to CEHS Water Quality Section (attn: Paul Ahn or Ricardo Moreno).

Item	Question	Yes	No	N/A
1.	Does the vault house any pre-1981 oil-filled equipment?			
2.	Is the vault equipped with adequate plumbing & discharge point?			
3.	Is the proposed vault equipped with 115-volt power supply			
4.	Is the District aware of any municipal restrictions to unmonitored discharge (e.g. Franchise Agreement)			
5.	Does the discharge have the potential to create public safety hazards (e.g. flooding) or cause erosion?			
6.	If the vault is not SCE-owned, is there a maintenance agreement? (CEHS may request a copy of the agreement)			

- Include any relevant information or explanation below.

Item	Information

Name/Title: _____

Phone: _____ Date: _____

Versatile and Proven Storm Water Solutions

C·I·Agent
STORM·WATER SOLUTIONS

C.I.Agent® ECO Pump

ENVIRONMENTALLY FRIENDLY
C·I·Agent STORM·WATER SOLUTIONS
& RECYCLABLE PRODUCTS

C.I.Agent® ECO Pump System

Robust sump pump is fully submersible

Fully submersible switch tested to millions of cycles.

One or 50 micron pre-filter keeps sediment away from the pump.

For additional information call C.I.Agent® Storm•Water Solutions.

PRODUCT DESCRIPTION:

Now, automatic sump pumps can be run with the confidence that sediment and oil will not be discharged. The C.I.Agent® ECO Pump uses proven C.I.Agent® containment technology to provide a safe and ensured compliant discharge from an application where an automatic sump pump is desired. The ECO Pump uses the same filtering concepts as the C.I.Agent® Barrier Boom and Hydrocarbon Flow Filter, which protects over 7,000 sub stations, transformers or other oil filled equipment. C.I.Agent® oil solidifying granules are embedded in hydrophobic, lipophilic geotextiles and filter nuisance sediments and sheens while continually allowing water to pass. In the event of a significant hydrocarbon release, the oil is solidified by the C.I.Agent® granules creating a barrier that will not allow any liquid to pass. The ECO Pump filter creates a cavity around a robust sump pump that is fully submersible and is activated by a patented, fully submersible switch tested to millions of cycles. The ECO Pump has a 1.25” discharge pipe with check valve and a leak proof standard electrical cord.

PRODUCT APPLICATIONS:

The C.I.Agent® ECO Pump is ideal for structures that see chronic water intrusion. This includes underground utility vaults, substations, elevator shafts or other areas that contain oil or fuel equipment and also receive water from various sources. Unlike unreliable oil switches, the C.I.Agent® ECO Pump filtering technology will eliminate the possibility of oil discharges. The ECO Pump comes with a one (1) micron or 50 micron pre-filter to keep sediment from impacting the main filter as well as nuisance hydrocarbons. The only maintenance required with the C.I.Agent® ECO Pump is the occasional backwashing or replacement of the simple Velcro®-applied pre-filter.

PERFORMANCE SPECIFICATIONS:

- 115 VAC 100% duty cycle pump motor
- Integrated high cycle life switch
- Filter height: 24”
- Diameter of main filter: 11.5”
- Diameter with pre-filter: 11.75”
- Weight of pump w/filter: 54 lbs.
- Weight of filter: 10 lbs.
- The pump and filter will handle an in-flow rate of 30+ GPM with both the 50 and 1 micron pre-filters.

BENEFITS:

- C.I.Agent® ECO Pump will not pass sediment or hydrocarbons
- Allows safe, unattended discharges
- Saves crew time from frequent manual dewatering
- Keeps equipment in vaults in working order.
- Ensures compliance with discharge requirements
- Robust pump and switch tested to millions of cycles
- All encased in small simple footprint

11760 Commonwealth Drive • Louisville, KY 40299 **office** 502.267.0101 **toll free** 866.242.4368 **fax** 502.267.0181 **web** www.ciagent-stormwater.com **rev.** 11/10

Versatile and Proven Storm Water Solutions

C·I·Agent
STORM·WATER SOLUTIONS

ECO PUMP PUMP SPECIFICATIONS

Horse Power	1
Voltage (AC)	115/1
Hz (hertz)	60
Duty Cycle	100%
RPM	3450
NEMA Start Code	D
Full Load Amps	15
Locked Rotor Amps	42
Cord Type	SOW
Cord Size	14/4
Motor Insulation Class	H
Operating Temperature	Up to 140F
Cord Length	25 Feet with Strain Relief and 3-prong plug
Shut Off Head	46 Feet
Max Flow	120 GPM
Discharge	2” (Choked to .75 exit 1.25”)
Controls	Pump Integrated Level Controls 100% Submersible and Adjustable Tested to Millions Patented Switching Technology Amp Rating 30 Voltage 115 VAC Single Phase

The Pump is tuned to discharge approximately one (1) foot horizontally at 10 vertical feet of head. The pump actual discharge is less than 30 GPM as it is regulated by the infiltration rate of the water through the filter. The design of the ECO Pump is such that the water must gravity flow into the filter before the pump level control will signal the pump to energize. Once the volume of water inside of the filter is evacuated, the pump is de-energized. This will happen quickly. It also will restrict the flow to a maximum of 30 GPM output. Over time, as sediment accumulates on the outside of the pre-filter, the flow rate will reduce.

The pump is a compact, lightweight, and powerful Portable Electric Submersible Pump. It is whisper quiet and will perform in any position. The in-line design assures maximum heat transfer to the pumped liquid. The pump can operate in water up to 140°F 60°C in temperature. The design provides the coolest operating motor for maximum life.

VACUUM PRESSURE IMPREGNATION “VPI” SEALED INSULATION SYSTEM

The motor enhancement system was developed to greatly extend the winding life expectancy of an electric motor. The motor stator is loaded into a pressure vessel and immersed in the specialty selected varnish.

All gas pockets located within the stator are evacuated under vacuum. The varnish is drawn into the stator core, completely occupying all voids in the winding. Following a series of processes and ending in a controlled bake, the winding is 100% impregnated and sealed.

VPI is greatly superior to the “dip and bake” method, which may only provide 50% to 70% of effective insulation leaving voids and air pockets. VPI provides 100% solid mass structure, which provides the greatest mechanical strength and a cooler running motor due to superior heat dissipation.

C·I·Agent
STORM·WATER
SOLUTIONS

ECO Pump
Installation and Operation Manual

Manufacturer's Recommended Installation and Operation Process




Manufactured by **C.I.Agent Storm•Water Solutions**
a division of C.I.Agent Solutions, LLC
11760 Commonwealth Drive • Louisville, KY 40299 • **562-619-8708**
www.ciagent-stormwater.com

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Familiarize yourself and your crew with the installation methods described in this manual. Deviation from the methods described in this manual may void product warranty and insurance policy. If you have any questions on the installation methods described in this manual, contact your sales representative or the manufacturer before you start to install.

BEFORE YOU START...

PRODUCT STORAGE

The C.I.Agent® Storm•Water ECO Pump should be stored in a covered area prior to use. Keep the product in its shipping container. Store at ambient temperatures.

SITE PREPARATION

The C.I.Agent® EVAC Filtration System

Water pumping through the C.I.Agent® EVAC Filter while it catches and contains hydrocarbons.

Step 1: Evacuate all water in the sump area where the ECP Pump is to be installed. The C.I.Agent® EVAC Filtration System can be used to manually pump the filter discharge.

Step 2: Clear at least a 12 inch diameter footprint of all debris and sediments in the sump or area of the vault.

TOOLS AND SUPPLIES...

THE ECO PUMP IS AN INTEGRATED SYSTEM INCLUDING:

Submersible Pump

Main Filter Core

Pre-filter

Level Controls

- 1 - Pre-filter 1 or 50 micron)
- 1 - Main Filter core (C.I.Agent® Granules inside)
- 1 - Submersible Pump (1HP 115VAC with 25 ft. cord
- 1 - Level Controls (submersible)
- 1 - Check Valve (1.25 in. FNPT)

TOOLS AND SUPPLIES...cont.

TOOLS YOU WILL NEED:

7/16 inch wrench
Drill
Level

MATERIALS YOU WILL NEED:

4 Redheads
4 Securing Eyes
2 Pieces of Cable

INSTALLATION...The ECO Pump

The ECO Pump comes with the main C.I.Agent® Filter Core that provides complete shutoff in the event of a significant hydrocarbon release, thus keeping any hydrocarbons from ever touching the pump. The main core filter comes with a Velcro attached Pre-Filter that filters sediments and nuisance hydrocarbons keeping the main filter in a good flowing condition.

The ECO Pump comes with a 1 HP Pump that is fully submersible and capable of 100 percent duty cycle integrated with a newly designed and patented fully submersible level control switch tested to millions of cycles. The ECO Pump discharges through a 1.25 in. Female National Pipe Thread (NPT) connection from the top through a check valve to prevent backflow. The ECO Pump also comes with UL listed, integrated 115 VAC heavy duty cord/plug coming from the top of the ECO Pump.

1. Evacuate all water in the sump area where the ECO Pump is to be installed. The C.I.Agent® EVAC Filter can be used to manually pump and filter discharge.

2. Clear at least a 12 in. diameter footprint of all debris and sediments in the sump or areas of the vault.

INSTALLATION — The ECO Pump...cont.

3. Lower the Sump Pump assemble into the vault.

4. Lower the Filter core into the vault.

5. Place ONLY the pump (not the Main Filter Core) in the center of the cleared area. Ensure the pump is sitting level with no sediment, irregular cement, or other anomalies in the pump seating area.

6. Place the Main Filter Core over the pump taking care to ensure:
   a. The Level Control Float is free to move up and down.
   b. The power cord is pulled through the top outside opening.
   c. The pump discharge bulk head fitting has a gasket in good condition and firmly in place.
   d. The pump discharge bulk head fitting is placed through the center hole in the Main Filter Core.
   e. The bottom seal ffor the Main Filter Core is flush with sump/wault floor.

INSTALLATION — The ECO Pump...cont.

7. Place the Cord Seal on the cord near the point it exits the Main Filter Core. Slide the Cord Seal down the cord until the cord Seal seats on the opening of the Main Filter Core, ensuring the cord slack is pulled from the inside of the Main Filter Core. Using a 7/16 inch wrench, tighten the hex nut on top of the Cord Seal until snug. DO NOT OVER-TIGHTEN. Tug slightly on the Cord Seal and cord to ensure the seals are tight and installed properly to prevent leaks.

8. Place the Bulk Head fitting nut on the pump discharge and tighten until very snug against the Main Filter Core top.

9. Place the check valve assembly on the pump discharge. Tighten until very snug.

10 The ECO Pump needs to be secured to the floor of the vault. This can be done in several ways with the end result of keeping the ECO Pump Filter and Pump in place so it does not move or tip over.

The most common method:

a. Drill four (4) holes in the vault floor to mount redheads evenly around the ECO Pump base 6 to 10 inches away from the base.
b. Place securing eye's on the four (4) redheads for securing cable.
c. Cut two (2) pieces of cable long enough to go from one redhead eye on one side of the ECO Pump over the top of the ECO Pump to another redhead eye on the other side.
d. Thread and secure the cable eye (1). Loop the cable over the middle of the ECO Pump and back down the opposite side to eye (2). Repeat this procedure from eye (3) to eye (4).

11. Install your discharge piping/hose to the top of the check valve assembly and tighten until sealed.

12. Install the power cord into a suitable tested electrical receptacle.

INSTALLATION — The ECO Pump...cont.

13. The system should be checked to ensure it is sealed and functioning properly.

OPERATION of the ECO Pump

Under normal conditions, should water enter the vault, the water will filter through the ECO Pump pre-filter, through the ECO Pump Main Filter core, and into the pump area. When enough water enters the pump area inside of the Main Filter Core, approximately 18 inches deep from the bottom of the ECO Pump, the level controls will automatically activate the pump. The pump will discharge all the water within the pump area at a rate of approxately 15-30 GPM.

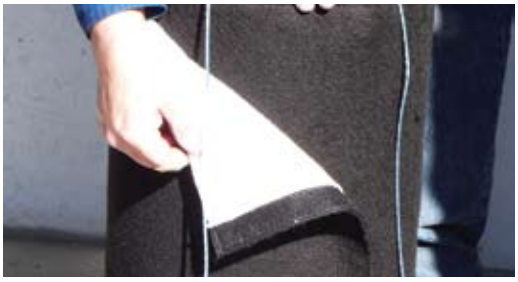
NOTE:
The water discharge should be observed to ensure vault water does not create a hazard.

Should minor amounts of hydrocarbons or sediment be present, they will be filtered at the Pre-Filter stage. The Pre-Filter will need to be maintained from time to time to keep flow moving through the system.

Should a major hydrocarbon release occur, the C.I.Agent® polymer inside the ECO Pump Main Filter will SOLIDIFY the hydrocarbons before they reach the pump. This solidified wall will not allow water into the pump and the vault will continue to fill.

The hydrocarbon release will need to be cleaned up. C.I.Agent® Oil Solidifier Granules are an excellent choice to remove the hydrocarbon from the water. The ECO Pump Pre-Filter and Main Filter will need to be replaced. For both C.I.Agent® Oil Solidifier Granules and ECO Pump filters, contact your C.I.Agent® Storm•Water Solutions representative at 562-619-8708.

MAINTENANCE of the ECO Pump



If over time the water level in the vault or sump gradually rises, sediment has begun to impact the Pre-Filter. Evacuate the vault manually using the EVAC Filtration System, and pull apart the Velcro® releasing the Pre-Filter. The Pre-Filter could be backwashed and reapplied depending on the sediment it contains. Once backwashed, the Pre-Filter can be reapplied for several more months of maintenance free operation. If the Pre-Filter is spent, it will need to be replaced. Contact your C.I.Agent® Storm•Water Solutions representative at 562-619-8708.

WARRANTY

C.I.Agent Solutions®, LLC warrants to the purchaser of its products, that the C.I.Agent® Oil Containment and/or Hydrocarbon/Water Filtration System for which the customer received this warranty was designed, developed, and/or fabricated using all due reasonable commercial care and good manufacturing practices. C.I.Agent Oil Containment and/or Hydrocarbon/Water Filtration System shall be free from defects in material and workmanship.

C.I.Agent Solutions further warrants the performance of their C.I.Agent Oil Containment and/or Hydrocarbon/Water Filtration System to prevent the release of hydrocarbons due solely to the failure of the materials and workmanship of the product. The performance warranted herein is contingent upon the installation of the C.I.Agent Oil Containment and/or Hydrocarbon/Water Filtration System being performed under the direct supervision of a C.I.Agent Solutions Factory Representative and/or a C.I.Agent Solutions Factory Certified Contractor. Said performance warranted herein is further contingent upon each C.I.Agent Oil Containment and/or Hydrocarbon/Water Filtration System being installed in strict accordance with the C.I.Agent Solutions' or C.I.Agent Storm•Water Solutions' Installation Manual, supported by a step-by-step photographic documentation of the installation to be sent to C.I.Agent Solutions upon completion of the installation.

Upon receipt and review of the photographic installation documentation, C.I.Agent Solutions will issue to the Customer a Certificate for Pollution Insurance in the amount of $2,000,000 to address the cost of clean up solely related to the performance of the C.I.Agent Oil Containment and/or Hydrocarbon/Water Filtration System as warranted herein.

C.I.Agent Solutions' sole obligation under this warranty is to repair or replace the product as warranted herein, at C.I.Agent Solutions' option. Repair or replacement shall not apply to products that have been expended, damaged, or consumed during the capture or filtration of hydrocarbons/waters from sources they were designed to contain and/or filter. C.I.Agent Solutions must be notified in writing of any claim under this warranty within 30 days of any claimed lack of conformity of the Product.

Warranty Limitations — In no event shall C.I.Agent Solutions be liable for any loss, inconvenience or damage, whether direct, incidental, consequential or otherwise, resulting from breach of any expressed or implied warranty or condition, of fitness for a particular purpose or otherwise with respect to this product, except as set forth herein. This warranty is not to confer any additional legal, jurisdiction or warranty rights to the customer other than those set forth herein.

Warranty Exclusions — It is the customer's responsibility to regularly examine the Product to determine if damage has occurred during the normal operation and/or maintenance of equipment at the site of the C.I.Agent Oil Containment and/or Hydrocarbon/Water Filtration System installation to determine the need for repair or replacement. This warranty does not cover the following:

Products that have been modified, neglected, misused, abused, or damaged by natural disasters.

Damage to the Product resulting from improper use or occurrence during the normal operation and maintenance of equipment at or near the Product.

ci agent solutions

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ECO Pump – Maintenance Instructions

Installed ECO Pump

Pre-Filter

The ECO Pump should require very little maintenance in a standard underground utility vault application where frequent water intrusion threatens electrical equipment. The accumulation of sediment on the pre-filter creates the need for maintenance. In outdoor applications, maintenance might be required more frequently because of increased dust, sediment and debris.

The standard maintenance requirement is to pump all the water out of the utility vault and replace the pre-filter wrapped around the ECO Pump.

Indication of Maintenance Need

Water is at the top of the ECO Pump filter assembly or higher.

Maintenance Steps

Evacuate the vault manually using the EVAC Filter

Peel apart the Velcro® and remove the clogged Pre-Filter

Attach a new Pre-Filter

This should put the ECO Pump back into good working order. The test port in the top of the filter housing can be opened and the pump float switch can be activated ensuring the function of the pump.

If oil was present in the vault, it is possible the main filter containing the C.I. Agent® Oil Solidifier could be fully sealed off preventing the pumping of that oil. This could be from a chronic oil release or a catastrophic release. If the pre-filter has been replaced and water will still rise above the level of the ECO Pump, then the entire ECO Pump assembly should be returned to C.I. Agent Storm•Water Solutions for evaluation.

Maintenance Frequency

For underground vaults with fairly clean water intrusion – Once per Year

For vaults with dirty water intrusion or outdoor applications – Once every 6 Months