APPENDIX C

MODEL STORM WATER POLLUTION PREVENTION PLAN

Double Scoop Ice Cream Company

40 Wonka Drive
Anytown, OK 12345

December 1992

Storm Water Pollution Prevention Plan	
Emergency Contact: **Cheryl Glenn**	Work Phone: **(101) 555-1234**
Title: **Plant Manager**	Emergency Phone: **(101) 555-6929**
Secondary Contact: **Rachel Meyers**	Work Phone: **(101) 555-3923**
Title: **Engineering Supervisor**	Emergency Phone: **(101) 555-6789**
Type of Manufacturer: **Ice Cream Manufacturer**	
Operating Schedule: **8:00 a.m. - 11:30 p.m.**	
Number of Employees: **The plant has 21 employees, including part time staff. Shifts overlap all day.**	
Average Wastewater Discharge: **5,000 gallons per week**	
NPDES Permit Number: **OK1234567**	

POLLUTION PREVENTION TEAM MEMBER ROSTER	Worksheet #1 Completed by: Cheryl Glenn Title: Plant Manager Date: December 12, 1992

Leader: Cheryl Glenn Title: Plant Manager

Office Phone: (101) 555-1234

Responsibilities: Signatory authority; coordinate all stages of plan development and implementation; coordinate employee training program; keep all records and ensure reports are submitted.

Members:

(1) Stephen Michaels Title: Production Supervisor

Office Phone: (101) 555-3923

Responsibilities: Note any process changes; help conduct inspections.

(2) Rachel Meyers Title: Engineering Dept. Supervisor

Office Phone: (101) 555-5870

Responsibilities: Responsible for implementing the Preventive Maintenance program; oversee inspections.

(3) Isaac Feldman Title: Maintenance Dept. Supervisor

Office Phone: (101) 555-0482

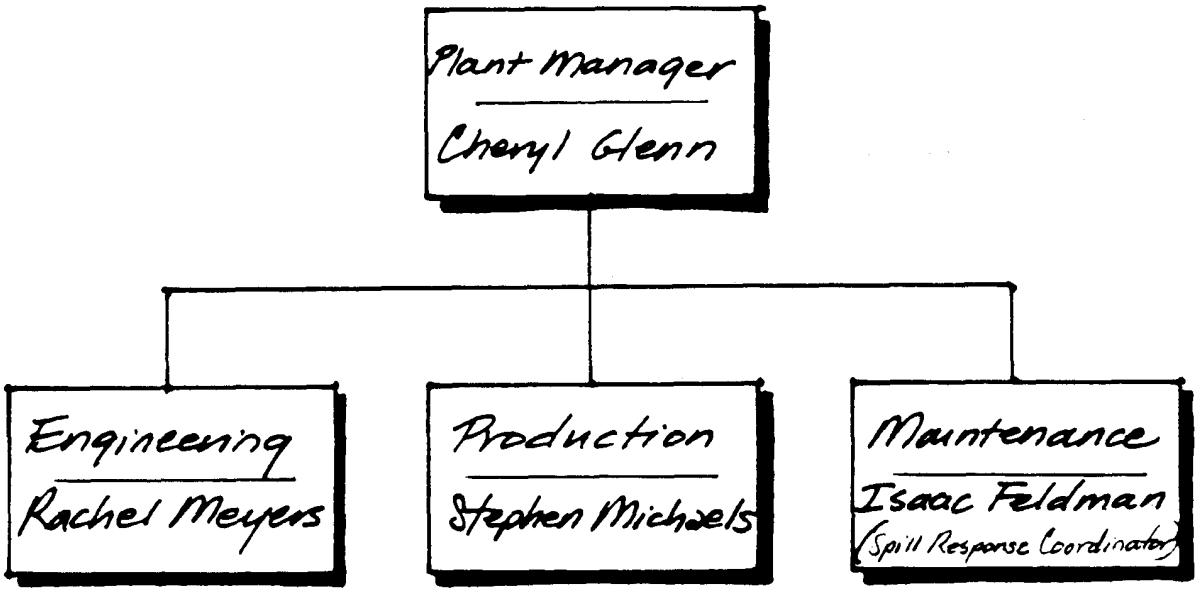
Responsibilities: Mr. Feldman is the spill response coordinator; Oversees "good housekeeping."

(4) Group Activities Title:

Office Phone:

Responsibilities: Developing the plan elements, chosing storm water management options.

Pollution Prevention Team Organization Chart



Double Scoop Ice Cream Company

Storm Water Pollution Prevention Plan
Comparison with SPCC Plan

Double Scoop Ice Cream Plant has an SPCC plan in operation for its aboveground fuel storage tank. Overlaps are noted below:

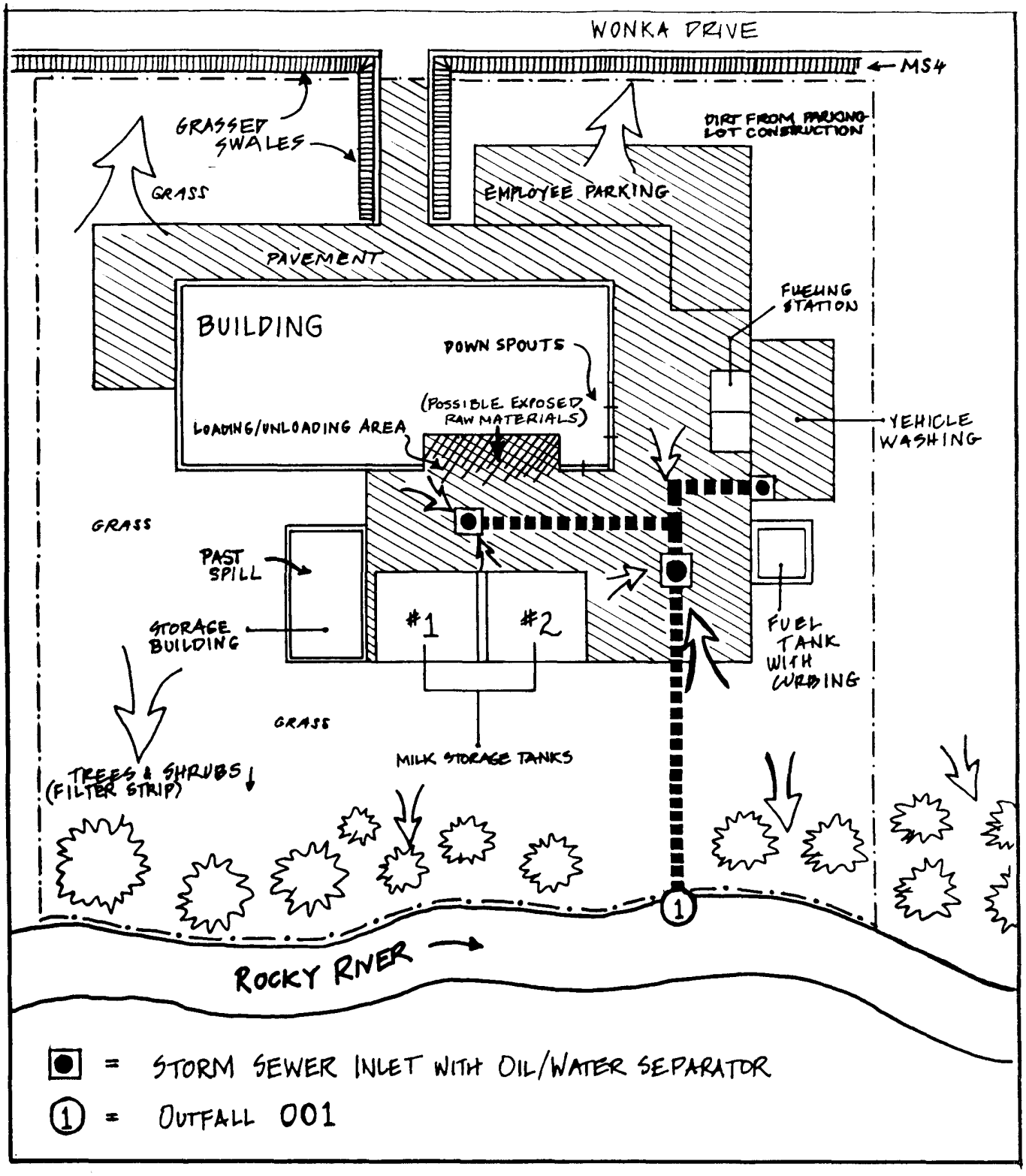
- Isaac Feldman is the SPCC Coordinator and reports directly to Cheryl Glenn. He will be the Storm Water Spill Prevention and Response Coordinator.
- A complete description of potential for oil to contaminate storm water discharges including quantity of oil that could be discharged.
- Curbing around aboveground fuel storage tank identified on site map.
- Expanded SPCC schedules and procedures to include Storm Water Pollution Prevention Plan requirements.
- Incorporated SPCC plan training into storm water training programs on spill prevention and response.
- Relevant portions of the SPCC plan will be included in this plan.

DEVELOPING A SITE MAP	Worksheet #2 Completed by: Cheryl Glenn Title: Plant Manager Date: December 12, 1992

Instructions: Draw a map of your site including a footprint of all buildings, structures, paved areas, and parking lots. The information below describes additional elements required by EPA's General Permit (see example maps in Figures 2.3 and 2.4).

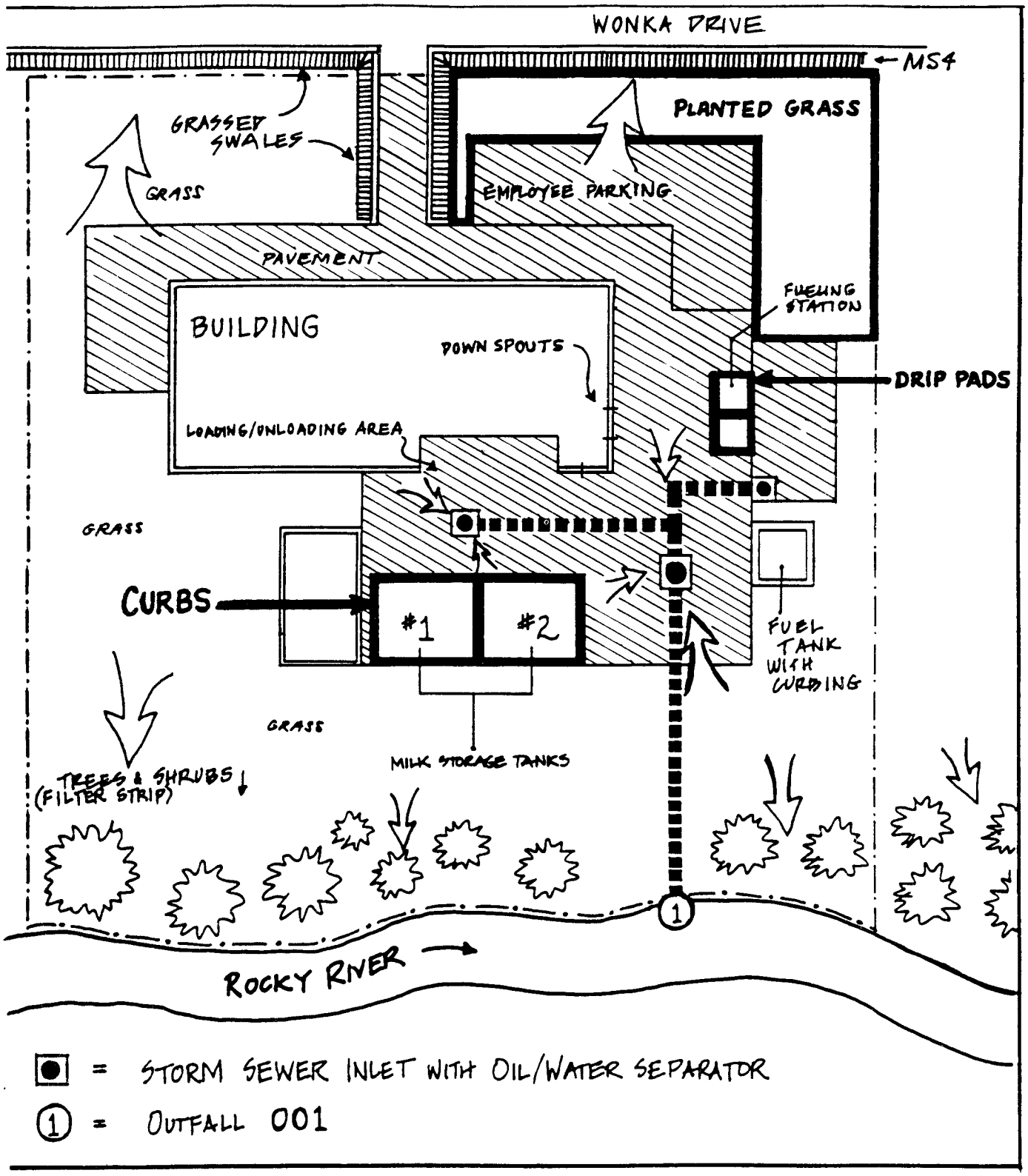
EPA's General Permit requires that you indicate the following features on your site map:

- All outfalls and storm water discharges
- Drainage areas of each storm water outfall
- Structural storm water pollution control measures, such as:
  - Flow diversion structures
  - Retention/detention ponds
  - Vegetative swales
  - Sediment traps
- Name of receiving waters (or if through a Municipal Separate Storm Sewer System)
- Locations of exposed significant materials (see Section 2.2.2)
- Locations of past spills and leaks (see Section 2.2.3)
- Locations of high-risk, waste-generating areas and activities common on industrial sites such as:
  - Fueling stations
  - Vehicle/equipment washing and maintenance areas
  - Area for unloading/loading materials
  - Above-ground tanks for liquid storage
  - Industrial waste management areas (landfills, waste piles, treatment plants, disposal areas)
  - Outside storage areas for raw materials, by-products, and finished products
  - Outside manufacturing areas
  - Other areas of concern (specify:_____)



DOUBLE SCOOP ICE CREAM COMPANY

PRE-BMP SITE MAP
MARCH 1, 1993



DOUBLE SCOOP ICE CREAM COMPANY

POST-BMP SITE MAP
MARCH 1, 1993

MATERIAL INVENTORY

Worksheet #3
Completed by: Cheryl Glenn
Title: Plant Manager
Date: December 12, 1992

Instructions: List all materials used, stored, or produced onsite. Assess and evaluate these materials for their potential to contribute pollutants to storm water runoff. Also complete Worksheet 3A if the material has been exposed during the last three years.

Material	Purpose/Location	Quantity (units)			Quantity Exposed in Last 3 Years	Likelihood of contact with storm water. If yes, describe reason.	Past Significant Spill or Leak	
		Used	Produced	Stored			Yes	No
Butter fat	truck unloading area during transfer to liquid ingredient storage and milk vat storage.	72,600 gal/wk	—	2,000 gal/wk	NO	Truck loading area outside and possible exposure with ruptured tanks.		✓
Milk Solids								
Whey solids								
Corn Syrup	Truck unloading area during transfer to sweetener storage.	7,100 gal/wk	—	—	yes	Truck loading area outside with possible exposure as a result of leaking tanks.	✓	
Liquid sugar								
Ice cream	Inside freezers for final product shipping.		35-40,000 Lbs.		NO	NO		✓
Cleansers:								
Granular	Dry cleansers in dry storage area (indoors)	400 lb/wk	—	—	NO	Yes. Possible storage exposure during transfer to dry storage area.		✓
Chlorshire-O								
H.D.C.-3R								
Power Spray-R								

MATERIAL INVENTORY

Page 2

Worksheet #3
Completed by: Cheryl Glenn
Title: Plant Manager
Date: December 12, 1992

Instructions: List all materials used, stored, or produced onsite. Assess and evaluate these materials for their potential to contribute pollutants to storm water runoff. Also complete Worksheet 3A if the material has been exposed during the last three years.

Material	Purpose/Location	Quantity (units)			Quantity Exposed in Last 3 Years	Likelihood of contact with storm water. If yes, describe reason.	Past Significant Spill or Leak	
		Used	Produced	Stored			Yes	No
Cleansers:								
liquid	Cleansers are	100 gal/wk	—	—	NO	Yes-if material tanks		✓
M.R.S.-200-0	stored outside					stored outside.		
Acidize-0	under cover.							
Microsan								
Fuels:								
gasoline	above ground	250 gal/wk	—	—	NO			✓
motor oil	750 gallon storage tank	20 gal/wk	—	—	NO	Yes – possible exposure		✓
						in the event of		
soaps		40 gal/wk	—	—	NO	defective tanks or		✓
detergents						transfer of materials		
						from tanks to containers		

DESCRIPTION OF EXPOSED SIGNIFICANT MATERIAL

Worksheet #3A
Completed by: Cheryl Glenn
Title: Plant Manager
Date: December 12, 1992

Instructions: Based on your material inventory, describe the significant materials that were exposed to storm water during the past three years and/or are currently exposed. For the definition of "significant materials" see Appendix B of the manual.

Description of Exposed Significant Material	Period of Exposure	Quantity Exposed (units)	Location (as indicated on the site map)	Method of Storage or Disposal (e.g., pile, drum, tank)	Description of Material Management Practice (e.g., pile covered, drum sealed)
liquid sugar	1/21/92	10 gal.	Storage building Tank #2	50 gal. tanks (2)	Leak was contained and mopped up. Remainder of liquid sugar transferred to tank that did not have a leaky valve.

LIST OF SIGNIFICANT SPILLS AND LEAKS

Worksheet #4
Completed by: Cheryl Glenn
Title: Plant Manager
Date: December 12, 1992

Directions: Record below all significant spills and significant leaks of toxic or hazardous pollutants that have occurred at the facility in the three years prior to the effective date of the permit.

Definitions: Significant spills include, but are not limited to, releases of oil or hazardous substances in excess of reportable quantities.

1st Year Prior

Date (month/day/year)	Spill	Leak	Location (as indicated on site map)	Description: Type of Material	Description: Quantity	Description: Source, If Known	Description: Reason	Response Procedure: Amount of Material Recovered	Response Procedure: Material No Longer Exposed to Storm Water (True/False)	Preventive Measures Taken
				N	O	N	E			

2nd Year Prior

Date (month/day/year)	Spill	Leak	Location (as indicated on site map)	Description: Type of Material	Description: Quantity	Description: Source, If Known	Description: Reason	Response Procedure: Amount of Material Recovered	Response Procedure: Material No Longer Exposed to Storm Water (True/False)	Preventive Measures Taken
1/21/91		✓	STORAGE BLDG.	LIQUID SUGAR	10 ga.	Tank #2	leaky valve	contained and mopped spill — transferred	true	installing curbing ~~around~~ tank — to be completed → 2/93

3rd Year Prior

Date (month/day/year)	Spill	Leak	Location (as indicated on site map)	Description: Type of Material	Description: Quantity	Description: Source, If Known	Description: Reason	Response Procedure: Amount of Material Recovered	Response Procedure: Material No Longer Exposed to Storm Water (True/False)	Preventive Measures Taken
				N	O	N	E			

NON-STORM WATER DISCHARGE ASSESSMENT AND CERTIFICATION

Worksheet #5
Completed by: Rachel Meyers
Title: Engineering Department Supervisor
Date: 3/1/93

Date of Test or Evaluation	Outfall Directly Observed During the Test (identify as indicated on the site map)	Method Used to Test or Evaluate Discharge	Describe Results from Test for the Presence of Non-Storm Water Discharge	Identify Potential Significant Sources	Name of Person Who Conducted the Test or Evaluation
12/24/92	001	visual inspection	No discharge observed		R. Meyers and S. Goodhope
1/19/93	001	visual inspection	Significant flow; oil	vehicle wash ongoing at time	R. Meyers and S. Goodhope
2/5/93	001	visual inspection	small amount of discharge observed; clear	suspected to be delayed storm water discharge from storm that occurred 2/1/93	R. Meyers and S. Goodhope
	* See details in attached field notebook.				

CERTIFICATION

I, Cheryl Glenn (responsible corporate official), 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.

A. Name & Official Title (type or print) Cheryl Glenn	B. Area Code and Telephone No. (101) 555-1234
C. Signature Cheryl Glenn	D. Date Signed 3/2/93

FIELD NOTEBOOK
For non-storm water discharge inspections

INSPECTION TEAM:
R. Meyers
S. Goodhope

Completed by: Rachel Meyers
Date: 12/24/92
Time: 10:50 am

Time since last rain: 42 hours
Quantity of last rain: 0.12 inches
Flow observed: NO

SIGNATURE: Rachel Meyers

Completed by: Rachel Meyers
Date: 1/19/93
Time: 3:20 pm

Time since last rain: 5 days
Quantity of last rain: 0.5 inches
Flow observed: YES
DESCRIPTION: No odor; clear color (soap suds); oily sheen; some sediment.
Temperature: cold (37.5°F)
Volume: collected ten gallons/minute in buckets
Comments: Vehicle wash ongoing at time of inspection. This was the source of the flow.

SIGNATURE: Rachel Meyers

Completed by: Rachel Meyers
Date: 2/5/93
Time: 12:15 pm.

Time since last rain: 96 hours
Quantity of last rain: 2.5 inches
Flow observed: YES
DESCRIPTION: No odor; clear; some sediments; few small pieces of paper (trash)
Temperature: cold (42.3°F)
Volume: Collected one gallon in 5 minutes.
Comments: We suspect that the flow was left over from storm that occurred on 2/1/93 (4 days ago)

SIGNATURE: Rachel Meyers

Double Scoop Ice Cream Company

Site Assessment Inspection

February 10, 1993

Evaluate the site for pollutants.

There are five areas where material handling and storage activities take place.

- The storage building contains tanks of corn syrup, liquid sugar, and the granular cleansers. The tanks were examined for possible leaks. We found that the valve on the liquid sugar tank #2 was faulty and had leaked approximately 10 gallons of liquid sugar. Although this leak occurred on 1/21/92, the faulty valve was not discovered until now. All other tanks are secure. Areas around the tanks were swept clean to determine if leaks or spills were prevalent.

- The milk storage tanks were then examined for leaks or exposure. Upon closer examination, it was found that the number 1 tank was leaking a small amount of milk to the drainage system. This leak may be the reason for the high concentration of biochemical oxygen demand found in the sample taken from the storm water discharge. The tank was temporarily fixed to ensure that no further contamination would result. A replacement tank was ordered on February 6, 1993, and was expected to arrive within 5 business days. The milk storage tanks shall be examined on a daily basis to further prevent possible exposure to the storm water collection system and receiving stream.

- We inspected the fueling station to see if there were any leaks. The general area surrounding the fueling station was clean but we observed that gasoline and motor oil falls during fueling. In accordance with standard operating conditions, facility personnel hose down the area during vehicle washing and the drain is connected to the storm sewer. We detected this connection on 1/19/93 during one of the non-storm water discharge assessment visual inspections. Since this discharge is not allowed under our general permit, we are in the process of submitting a separate permit application specifically for the discharge of vehicle wash water.

- We examined the fueling station which is adjacent to the vehicle washing area. Vehicle washing cleaners are used here and any empty or open containers were removed from the area.

- We next looked at the loading and unloading docks where raw materials and various cleansers are delivered. The transfer of goods from incoming trucks to storage areas is a source of pollution. Although no problems were noticed, the pollution prevention team has developed a spill prevention and response plan to clean up spills quickly and report them if necessary.

- The last area we inspected was the runoff field below the employee parking lot. Here we noticed a significant amount of erosion resulting from recent construction to expand the parking lot.

Describe existing management practices.

Grass was lightly planted around the parking lot after recent construction. The fuel storage tank has curbing around it in accordance with our SPCC plan. Also, the maintenance crew regularly picks up trash and empty containers from around the storage tanks, loading and unloading areas, and the vehicle washing areas. Used oils are collected in containers and taken to a recycling facility. In addition, we installed two oil/water separators at the drains into our underground storm sewer leading to the Rocky River. These separators are indicated on the site map.

Double Scoop Ice Cream Company

Existing Monitoring Data

Although our NPDES permit for process wastewater does not require storm water sampling, we sampled our storm water on one occasion in response to a questionnaire we received from the National Association of Ice Cream Makers. They were collecting information to submit as part of their comments on EPA's proposed general permit.

Date of Sampling	8/30/91
Outfall Sampled	001
Type of Storm	1 inch light rainfall (lasted 2 days)
Type of Samples	Grab samples taken during first hour of flow

Data		
Parameter	**Quantity**	**Sample Type**
BOD	250 mg/l	Grab
TSS	100 mg/l	Grab
pH	7.2 s.u.	Grab
Oil and grease	5.0 mg/l	Grab

Based upon the high concentration of BOD in the storm water samples collected, pollution prevention team is considering possible potential sources of BOD. We will look at storage areas housing butter fat, milk, and whey solids tanks.

Double Scoop Ice Cream Company

Summary of Pollutant Sources

March 5, 1993

Based on the site assessment inspection conducted on 12/1/92, the pollution prevention team identified four potential sources of pollutants:

- Oil and grease stains on the pavement in the fueling area indicate oil and grease may be picked up by storm water draining to the storm sewer. This area drains into the storm sewer leading to the Rocky River.
- Sediment and erosion potential in the field below the employee parking lot because of thinly planted grass.
- Potential for spills or leaks from liquid storage tanks, including the fuel storage tank, based on a spill that occurred on 1/21/92 and the leak that was detected in the milk storage tank. These pollutants would drain into the piped outfall into the Rocky River.
- Use of a toxic cleaning agent may result in a pollution problem if handled improperly.

Double Scoop Ice Cream Company

Description of Storm Water Management Measures Taken Based on Site Assessment Phase

March 5, 1993

These measures correspond to the pollutant sources identified on the preceding page.

Oil and grease from fueling area.

We installed drip pads around the fuel pumps to pick up spilled gas and oil during truck refueling. These will be inspected regularly to make sure they are working well.

Sediment and erosion in the field below the employee parking lot.

We planted grass in this area to reduce potential for erosion.

Leaks/spills from liquid storage tanks.

We are in the process of installing curbing around the outdoor liquid storage tanks that will contain the volume of he largest tank in case a spill should occur. The spill response team has developed procedures to clean up this area should a spill occur. We are incorporating spill response procedures from our SPCC plan.

Toxic cleaning agent.

We have discontinued the use of this agent and are replacing it with a non-toxic cleaning agent.

POLLUTANT SOURCE IDENTIFICATION
(Section 2.2.6)

Worksheet #7
Completed by: Cheryl Glenn
Title: Plant Manager
Date: 3/5/93

Instructions: List all identified storm water pollutant sources and describe existing management practices that address those sources. In the third column, list BMP options that can be incorporated into the plan to address remaining sources of pollutants.

Storm Water Pollutant Sources	Existing Management Practices	Description of New BMP Options
1. Oil and grease on pavement in fueling area	Oil and water separators installed in storm water drain	Install drip pads
2. Erosion in field below employee parking lot	Planted some grass after construction; grassed swales along Wonka Drive	Plant more grass
3. Potential for spills from liquid storage tanks (leak detected in milk tank #1 + past spill on 1/21/92)	Curbing around fuel storage tank (see SPCC plan)	Replace milk tank #1; replace valve on liquid sugar tank #2; install curbing around other outside tanks. spill prevention response plan; inspectio
4. Use of toxic cleaning agent.		Use non-toxic cleaning agent
5. Trash in loading/unloading fueling areas	Regular trash pick up (daily) by maintenance crew; collect and recycle used oil.	Train staff in good housekeeping practices.
6.		
7.		
8.		
9.		
10.		

BMP IDENTIFICATION (Section 2.3.1)	Worksheet #7a Completed by: Cheryl Glenn Title: Plant Manager Date: 3/5/93

Instructions: Describe the Best Management Practices that you have selected to include in your plan. For each of the baseline BMPs, describe actions that will be incorporated into facility operations. Also describe any additional BMPs [activity-specific (Chapter 3) and site-specific BMPs (Chapter 4)] that you have selected. Attach additional sheets if necessary.

BMPs	Brief Description of Activities
Good Housekeeping	Collect and recycle used oil; regular trash pick up; train staff in basic clean up procedures (sweeping loading & unloading areas, etc.)
Preventive Maintenance	Daily inspection of outside milk tanks; replace faulty valve on sugar tank #2; replace leaking milk tank #1
Inspections	Daily inspection of outside milk tanks; bi-monthly inspections of drip pads, curbing, loading/unloading areas, grassed areas, drainage system.
Spill Prevention Response	Install curbing around outside liquid storage tanks; fuel tank has curbing; install drip pads at fueling station.
Sediment and Erosion Control	Plant grass around new parking area.
Management of Runoff	Grassed swales along Wonka Drive; (2) oil/water separators in storm drain system
Additional BMPs (Activity-specific and Site-specific)	Order non-toxic cleaning agent.

Double Scoop Ice Cream Company

Employee Training Program

Who:

Line Workers
Maintenance Crew
Shipping and Receiving Crew

When:

Employee meetings held the first Monday of each month to discuss:

- Any environmental/health and safety incidents
- Upcoming training sessions
- Brief reminders on good housekeeping, spill prevention and response procedures, and material handling practices
- Announce any changes to the plan
- Announce any new management practices

In-depth pollution prevention training for new employees

Refresher courses held every 6 months (October and March) addressing:

- Good housekeeping
- Spill prevention and response procedures
- Materials handling and storage

Employee Training Program Topics:

Good Housekeeping

- Review and demonstrate basic cleanup (sweeping and vacuuming) procedures.
- Clearly indicate proper disposal locations.
- Post signs in materials handling areas reminding staff of good housekeeping procedures.
- Be sure employees know where routine clean-up equipment is located.

Spill Prevention and Response

- Clearly identify potential spill areas and drainage routes
- Familiarize employees with past spill events -- why they happened and the environmental impact (use slides)
- Post warning signs in spill areas with emergency contacts and telephone numbers
- Introduce Isaac Feldman as the Spill Response Coordinator and introduce his "team"
- Drill on spill clean-up procedures
- Post the locations of spill clean-up equipment and the persons responsible for operating the equipment

Materials Handling and Storage

- Be sure employees are aware which materials are hazardous and where those materials are stored
- Point out container labels
- Tell employees to use the oldest materials first
- Explain recycling practices
- Demonstrate how valves are tightly closed and how drums should be sealed
- Show how to fuel vehicles and avoid "topping off"

IMPLEMENTATION
(Section 2.4.1)

Worksheet #8
Completed by: Cheryl Glenn
Title: Plant Manager
Date: 3/30/93

Instructions: Develop a schedule for implementing each BMP. Provide a brief description of each BMP, the steps necessary to implement the BMP (i.e., any construction or design), the schedule for completing those steps (list dates) and the person(s) responsible for implementation.

BMPs	Description of Action(s) Required for Implementation	Scheduled Completion Date(s) for Req'd. Action	Person Responsible for Action	Notes
Good Housekeeping	1. Develop training program	3/10/93	Glenn	
	2. Conduct training	6/1/93	Glenn	
	3.			
Preventive Maintenance	1. Replace valve on sugar tank #2	3/1/93	Feldman	
	2. Install new milk tank #2	2/15/93	Feldman	
	3.			
Inspections	1. Develop inspections schedule	4/1/93	Glenn	
	2.			
	3.			
Spill Prevention and Response	1. Install curbing around milk storage tanks	4/30/93	Meyers	
	2. Install drip pads	4/1/93	Feldman	
	3. Develop/Implement Spill Prevention/Response training	4/1/93 - DEVELOP 6/1/93 - TRAIN	Feldman	
Sediment and Erosion Control	1. Plant grass around parking area	4/15/93	Feldman	
	2.			
	3.			
Management of Runoff	1. BMPs already in place			
	2.			
	3.			
Additional BMPs (Actively-specific and site-specific)	1. Substitute non-toxic cleaning agent	2/28/93	Michaels	
	2.			
	3.			

EMPLOYEE TRAINING (Section 2.4.2)	Worksheet #9 Completed by: Cheryl Glenn Title: Plant Manager Date: 3/2/93

Instructions: Describe the employee training program for your facility below. The program should, at a minimum, address spill prevention and response, good housekeeping, and material management practices. Provide a schedule for the training program and list the employees who attend training sessions.

Training Topics	Brief Description of Training Program/Materials (e.g., film, newsletter course)	Schedule for Training (list dates)	Attendees
Spill Prevention and Response	locate spill areas by signs; drill spill response procedures; show slides of past spills.	October/March	Maintenance/ shipping & receiving
Good Housekeeping	Demonstration; post signs at disposal sites.	October/March	Maintenance/ shipping & receiving
Material Management Practices	Introduce hazardous materials labels; discuss recycling.	October/March	Lineworkers/shipping and receiving/maintenance
Other Topics	Environmental/health incidents; Reminders of pollution prevention plan issues.	1st Monday of each month	All employees.