

COLLECTING STORM WATER RUNOFF SAMPLES

Purpose This Water Quality and Hydrology Group (ENV-WQH) procedure describes the sample collection of storm water runoff.

Scope This procedure applies to ENV-WQH personnel, contractors, and students conducting storm water runoff sample collection.

In this procedure This procedure addresses the following major topics:

Topic	See Page
General Information About This Procedure	2
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Collecting Storm Water Samples from ISCO Samplers at Gaging Stations	4
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Integrated Work Management The work specified in this procedure is conducted in accordance with applicable Integrated Work Documents, in accordance with LANL IMP 300-00-00, Integrated Work Management for Work Activities.

Signatures

Prepared and approved by. Signature on file _____ Ryan Romero, ENV-WQH Acting Team Leader	Date: 1/19/06 _____
Approved by. Signature on file _____ Steve Rae, ENV-WQH Safety Committee Chairman	Date: 1/19/06 _____
Approved by. Signature on file _____ Steve Rae, ENV-WQH Group Leader	Date: 1/19/06 _____

CONTROLLED DOCUMENT

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General Information About This Procedure

Attachments This document has the following attachments:

Number	Attachment Title	No. of pages
1	Equipment and Supplies for Sample Collection a	1
2	Surface Water Sampling Field Sheet	5
3	Configurations for ISCO Sampler	1

History of revision

This table lists the revision history and effective dates of this procedure.

Revision	Date	Description Of Changes
0	10/01	New document
1	8/03	Annual review
2	5/05	Added safety precautions and excavation permit requirements.
3	1/06	New procedure; supercedes sample collection steps in ENV-WQH-SOP-009.2

Who requires training to this procedure

The following personnel require training before implementing this procedure:

- Personnel assigned to collect storm water runoff samples.

Training method

The training method for this procedure is self-study and documented in accordance with the procedure for training (RRES-WQH-QP-024, *Personnel Training*).

Prerequisites

In addition to training to this procedure, the following training is also required prior to performing this procedure:

- Training Plan #7347, General Field Work
- Training Plan #7692, Sample Storm Water Runoff
- Training Plan #7558, Sample Management

Note

Actions specified within this procedure, unless preceded with “should” or “may,” are to be considered mandatory guidance (i.e., “shall”).

Preparing for Field Work

Personnel needs	<p>Two person rule is required for:</p> <ul style="list-style-type: none">• All sample collection activities• Field work during inclement weather conditions• Remote gage locations accessible only by foot• Wading• Any other conditions that may pose increased risk of incident as determined by the Team Leader <p>Under all conditions, personnel must sign in and out when performing any work away from the office.</p> <p>Follow the procedure RRES-ES-Field, <i>General Field Safety for All Employees</i>. All field personnel must have a radio and some other means of communication (such as a cell phone) or as specified by the facility owner or other Laboratory requirements.</p> <hr/>
Time of visits	<p>All station work will take place during normal work hours and during daylight hours. The Operations Team Leader, with concurrence from the Group Leader, may approve exceptions.</p> <hr/>
Clock times	<p>When at a site, station equipment clock times on both the datalogger and ISCO sampler will be synchronized and verified. Before going to the field, check and set your watch to the precise time. This can be done by calling the Laboratory's time system (667-TIME or 667-8463) or by logging on to the time page at www.time.gov (or click on the clock icon on the lab's internal home page).</p> <hr/>
Equipment needed for sample collection	<p>Assemble the equipment and supplies before traveling out to the field to collect or retrieve collected storm water samples. Reference Attachment 1 for a list of equipment and supplies.</p> <hr/>
Calibrate portable pH meter	<p>It is best to calibrate the pH meter <u>before</u> leaving for the field, though it may be done in the field when necessary. Reference ENV-DO-203, <i>Field Water Quality Analyses</i>.</p> <hr/>

Collecting Storm Water Samples from ISCO Samplers at Gaging Stations

Spring – preparation for sampling

In the winter, shut off the station ISCO samplers when there is no chance of runoff due to freezing temperatures.

Ensure the samplers are re-activated in mid-March, or earlier if warm weather might result in a runoff event.

Preparing ISCO sampler

At the beginning of the sampling season or when a new ISCO sampler is being installed, the ISCO sampler will be programmed and configured by performing the following steps:

Step	Action
1	Press “On” to turn the sampler on.
2	Press “Enter” button.
3	Select “Configuration”.
4	Set the following configuration parameters. After each selection, press the “Enter” button to allow the next configuration parameter to be displayed on the screen. <ul style="list-style-type: none">• enter time and date• select “portable”• enter the number of bottles• enter the sample volume• suction line = 3/8• suction line = Teflon• enter suction line length• liquid detector = enable• rinse cycles = 0• enter head manually = yes• retry = once• programming mode = basic

Table continued on next page.

Collecting Storm Water Samples from ISCO Samplers at Gaging Stations, continued

Preparing ISCO sampler, continued

Step	Action
5	Set the following programming parameters. <ul style="list-style-type: none"> • calibrate sampler = enable • start time delay = 0 • enable pin = 0 master slave • sample upon disable = no • sample on enable = no • reset sample interval = no • inhibit countdown = yes • continuous signal pulse = default value • sample counts = default value • tubing replacement counter = default value • reset pump counter = default value • program lock = disable • sampler ID = default value
6	Select “Run diagnostics”. The RAM test runs.
7	Set test distributor = yes
8	Set reinitialize = no
9	Set exit configuration = yes
10	Press “Start Sampling” button twice.

Collecting Storm Water Samples from ISCO Samplers at Gaging Stations, continued

Retrieving ISCO collected samples

If there has been a runoff event and the ISCO sampler has collected samples, perform the following steps.

Step	Action
1	Complete the Storm Water Sampling Field Sheet, Attachment 2, as much as possible prior to retrieving sample.
2	Remove the cover from the sampler.
3	Don gloves.
4	Visually assess the number and locations of samples to be collected.
5	Put the lids on the bottles.
6	Number and label each bottle containing a water sample using the ISCO rack number and station ID. Record the date and the number (from the ISCO sampler) and station ID (EXXX) onto each bottle.
7	Record the date, time, bottle type, volume acquired, and other comments on page 4 of the Surface Water Sampling Field Sheet.
8	Remove the bottles containing water from the carousel and put on ice to cool to 4°C
9	Conduct a physical inspection of the samples and document the results on the Visual Observation section, page 1 of the Surface Water Sampling Field Sheet. Parameters to be noted include color, smell, foam, floating solids, or any changes from the previous visit to the station. Reference the guidance on Surface Water Sampling Field Sheet.
10	Install a new set of bottles in the carousel; remove the lids and place them in a zip lock bag in the center of the carousel.
11	Replace the sampler cover.

Table continued on next page.

Collecting Storm Water Samples from ISCO Samplers at Gaging Stations, continued

**ISCO
collected
samples
(continued)**

Step	Action														
12	To restart the sampler for the next event, perform the following steps: <table border="1" data-bbox="492 516 1380 825"> <thead> <tr> <th>Step</th> <th>Action</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Ensure the unit displays “Bottle 1 after 1 pulse.”</td> </tr> <tr> <td>2</td> <td>Press the “On” button.</td> </tr> <tr> <td>3</td> <td>Press the “Start sampling” button.</td> </tr> <tr> <td>4</td> <td>Press the “Enter” button twice.</td> </tr> <tr> <td>5</td> <td>After 1 pulse, “Bottle 1” will display on the LED.</td> </tr> <tr> <td>6</td> <td>If an error occurs, reconfigure the sample. Reference Attachment 3 for settings.</td> </tr> </tbody> </table>	Step	Action	1	Ensure the unit displays “Bottle 1 after 1 pulse.”	2	Press the “On” button.	3	Press the “Start sampling” button.	4	Press the “Enter” button twice.	5	After 1 pulse, “Bottle 1” will display on the LED.	6	If an error occurs, reconfigure the sample. Reference Attachment 3 for settings.
Step	Action														
1	Ensure the unit displays “Bottle 1 after 1 pulse.”														
2	Press the “On” button.														
3	Press the “Start sampling” button.														
4	Press the “Enter” button twice.														
5	After 1 pulse, “Bottle 1” will display on the LED.														
6	If an error occurs, reconfigure the sample. Reference Attachment 3 for settings.														
13	Secure the sampler shelter.														
14	Estimate the high water mark of the flow event from the staff gage and record this number on the appropriate section of the Surface Water Sampling Field Sheets.														
15	Clean the high water marks off the staff gage for the next flow event.														

**Record field
data**

Record field data on the Surface Water Sampling Field Sheets following guidance provided with the Surface Water Sampling Field Sheets form.

**Disposing of
wastes**

There are only non-hazardous wastes associated with this operation. For all wastes generated, contact the Waste Management Coordinator (667-9415). To salvage or recycle components or materials, contact the ENV Division property representative (667-2303).

Collecting Storm Water Samples from ISCO Samplers for FFCA Sampling

Spring – preparation for sampling

In the winter, shut off the station ISCO samplers when there is no chance of runoff due to freezing temperatures.

Ensure the samplers are re-activated in mid-March, or earlier if warm weather might result in a runoff event.

Preparing ISCO sampler

At the beginning of the sampling season or when a new ISCO sampler is being installed, the sampler will be programmed and configured by performing the following steps:

Step	Action
1	Press “On” to turn the sampler on.
2	Press “Enter” button.
3	Select “Configuration”.
4	<p>Set the following configuration parameters. After each selection, press the “Enter” button to allow the next configuration parameter to be displayed on the screen.</p> <ul style="list-style-type: none"> • enter time and date • select “portable” • number of bottles = 24 • sample volume = 1000ml • suction line = 3/8 • suction line = Teflon • enter suction line length • liquid detector = enable • rinse cycles = 0 • enter head manually = no • retry = once • programming mode = extended • load program = none • save current program = none • take sample at start time = no • take sample at time switch = no • select “nonuniform time”

Table continued on next page.

Collecting Storm Water Samples from ISCO Samplers for FFCA Sampling, continued

**Preparing
ISCO
sampler,
continued**

Step	Action
4 cont	<ul style="list-style-type: none"> • enter intervals in minutes • calibrate sampler = enable • sampling stop resume = disable • start time delay = 0 min • select “enable pin” • master/slave = no • sample on disable = no • sample on enable = yes • reset sample interval = no • inhibit countdown = yes • continuous signal = pulse • at beginning of = purge • purge counts = 100 • post sample = 1000 • tubing life = default value • reset pump counter = 0 • pump counts = default value • program lock = disable • sampler ID = default value • run diagnostics = default value • test distributor = yes • Press “Enter program” button • Select “program”

Table continued on next page.

Collecting Storm Water Samples from ISCO Samplers for FFCA Sampling, continued

**Preparing
ISCO
sampler,
continued**

Step	Action
5	Set the following programming parameters. <ul style="list-style-type: none">• select “storm”• time mode = first bottle group• timed events = 11• sample interval = one minute• bottle per sample event = 1• sample per bottle = 1• sample volumes = 350ml• “13 bottles available” will be displayed• time = second bottle group• minute delay = 0• sample interval = 1• bottle per sample event = 1• sample per bottle = 1• sample volume = 950ml• calibrate sample = no• enter start time = no• “program complete” will be displayed
6	Press “Start sample” button.

Collecting Storm Water Samples from ISCO Samplers for FFCA Sampling, continued

Retrieving ISCO collected samples

If there has been a runoff event and the ISCO sampler has collected samples, perform the following steps.

Step	Action
1	Complete the Storm Water Sampling Field Sheet, Attachment 2, as much as possible prior to retrieving sample.
2	Remove the cover from the sampler.
3	Don gloves.
4	Visually assess the number and locations of samples to be collected.
5	Put the lids on the bottles.
6	Number and label each bottle containing a water sample using the ISCO rack number and station ID. Record the date and the number (from the ISCO sampler) and station ID (EXXX) onto each bottle.
7	Record the date, time, bottle type, volume acquired, and other comments on page 4 of the Surface Water Sampling Field Sheet.
8	Remove the bottles containing water from the carousel and put on ice to cool to 4°C
9	Conduct a physical inspection of the samples and document the results on the Visual Observation section, page 1 of the Surface Water Sampling Field Sheet. Parameters to be noted include color, smell, foam, floating solids, or any changes from the previous visit to the station. Reference the guidance on Surface Water Sampling Field Sheet.
10	Install a new set of bottles in the carousel; remove the lids and place them in a zip lock bag in the center of the carousel.
11	Press the "Start Sampling" button.
12	Replace the sampler cover.

Record field data

Record field data on the Surface Water Sampling Field Sheets following guidance provided with the Surface Water Sampling Field Sheets form.

Disposing of wastes

There are only non-hazardous wastes associated with this operation. For all wastes generated, contact the Waste Management Coordinator (667-9415). To salvage or recycle components or materials, contact the ENV Division property representative (667-2303).

Collecting Storm Water Grab Samples

Manual grab samples The Laboratory's automated sampling system, ISCO samples, and single stage set ups are the is primary collection method for flood and storm water runoff sample. Sample collection can be supplemented by manual grab samples. A manual grab is collected by inserting a container into a stream flow with the container opening facing upstream. In most cases, the sample container itself may be used to collect the sample.

Stream safety For collecting grab samples or for measuring flow, it is often necessary or desirable to wade into the stream.

- If there are not two people present, **DO NOT ENTER** flooded streams.
 - If you are unsure of the water condition, **DO NOT ATTEMPT TO ENTER**.
-

When to wade into streams: depth-velocity product If the stream depth (in feet) times the flow rate (in feet per second) is greater than 10, **DO NOT** enter the stream flow.

Example 1: Stream is 2 feet deep flowing 4 feet per second; depth-velocity product is 8: OK to wade across stream.

Example 2: Stream is 2 feet deep flowing 8 feet per second; depth-velocity product is 16: **DO NOT** enter the stream.

Be sure of footing and use a wading rod to determine stream bottom anomalies.

Depth integrated sampling When stream conditions and depth support this type of activity, collect depth-integrated grab samples. For the techniques to do this, see USGS Manual "Techniques of Water Resource Investigations," Book 9, Isokinetic, Depth-Integrated Sampling Methods, Chapter A4, Section 4.1.1.A.

Collecting Storm Water Grab Samples, continued

Steps to collect grab samples

To collect depth-integrated grab samples from a flowing stream, perform the following steps:

Step	Action
1	Complete the Storm Water Sampling Field Sheet, Attachment 2, as much as possible prior to retrieving sample.
2	Don appropriate PPE such as waders, gloves, eye protection, etc.
3	Record bottle number and sequence time in relationship to others collected during the collection period on the Storm Water Sampling Field Sheet.
4	Measure the pH and temperature (reference ENV-DO-203, <i>Field Water Quality Analyses</i>), if required.
5	Collect the grab sample from the horizontal and vertical center of the channel. Look for an area that provides good stream mixing.
6	Avoid touching the lid, lip, or inside of the container to prevent potential cross contamination.
7	Keep the sample free from uncharacteristic floating debris.
8	If possible, collect the sample in the container it will be shipped in.
9	If taking numerous grab samples, keep the samples separate and labeled clearly.
10	Record the date, time, bottle type, volume acquired, and other comments on page 4 of the Surface Water Sampling Field Sheet.
11	Put samples from one site in the same cooler; do not mix samples from different sites in the same cooler. If this is not feasible, place additional station samples in a sample container box or additional cooler.

ISCO manual sample collector

When the ISCO automated sampler has failed and there is still water in the stream, collect a sample manually with the ISCO by performing the following steps:

Step	Action
1	Push “manual” button on the ISCO Sampler.
2	Allow 1 liter containers to fill.
3	After all containers in the ISCO carousel are full, continue with steps 1 – 9, Steps to collect grab samples, above.

Delivering samples to TA-59-1

Upon return to lab Transport samples under chain of custody to TA-59, Building 1, Basement refrigerator. Surface water sample field sheet must remain with the sample. Reference ENV-DO-207, *Handling, Packaging, and Transporting Field Samples*.

Maintaining chain of custody A sample is physical evidence collected from a facility or the environment. Chain of custody must be maintained and documented for all samples.

Records Resulting from this Procedure

Records The following records generated as a result of this procedure are to be filed in TA-64-64.

- Copy of Surface Water Sampling Field Sheet
- Copy of Analytical Request Form
- Photographs taken of the described activities, when taken
- Gaging Station Field Sheet

[Click here to record self-study training to this document.](#)

Equipment and Supplied Needed for Storm Water Runoff Sample Collection

- Copy of IWD
- Ball point pen
- Coolers with ice or Blue Ice® blocks
- Copy of this procedure
- Digital camera
- Field sampling kit
- If taking grabs, appropriate bottles to collect samples
- Lids for sample bottles (enough for at least 2 stations) (ISCO samples)
- List of stations to be sampled
- Marker pen (permanent, waterproof)
- Radio
- Replacement sample bottles (glass and plastic) for ISCO Sampler
- Surface Water Sampling Field sheet (Attachment 3)
- Waders

**Los Alamos National Laboratory
Water Quality and Hydrology Group (ENV-WQH)
Surface Water Sampling Field Sheet**

(ENV-WQH-SOP-011.0, Attachment 2)

Station Name:	Sample Retrieval: Time: Date:
	ISCO Sample Collection: Time: Date:
Station Number:	Analytical Request Record No.:
Sampled By: _____	Sample Purpose: Baseflow Storm Water Snow Melt Other:
FIELD PARAMETERS	FIELD MEASUREMENTS
pH:	Q. Inst.: cfs meas. rating Est.
Specific conductance:	Staff (OS): ft.
Turbidity:	Gage Ht (IS): ft.
Temperature:	HWM:
DO:	Other:
Other: (specify)	

SAMPLING CONDITIONS	
(Circle all that apply)	
Location:	
Location:	Wading Bank Station gage: At Above Below Bridge: Upstream Down stream Side bridge ft mile, Boat Ice Other (specify):
Sampling Site:	Pool Riffle Open channel Braided Backwater sampler type:
Bottom:	Bedrock Rock Cobble Gravel Sand Mud Concrete other (specify):
Stage Conditions:	Not determined Stable: Normal Low High Falling Rising Peak Other (specify):
Hydraulic Event:	Routine sampling Regular flow Snowmelt Flood Drought Spill Ice cover: thickness inches Other (specify):
Stream Color(s):	Brown Clear Green Blue Gray Other:
Weather:	Clear Partly cloudy Cloudy Hot Warm Snow Rain: Light Medium Heavy Over Calm Light Breeze Windy Very Gusty
Stream Mixing:	Excellent Good Fair Poor

VISUAL OBSERVATIONS	
Inspection Completed from sample within first half hour of flow:	Yes No
Reason if not within first half hour: _____ _____	

Provide Description	
Odor:	Color:
Clarity:	Floating Solids:
Settled Solids:	Suspended Solids:
Foam:	Oil Sheen:
Other indicators of possible storm water pollution: _____ _____ _____	

Other Observations _____

**Los Alamos National Laboratory
Water Quality and Hydrology Group (ENV-WQH)
Surface Water Sampling Field Sheet**

(ENV-WQH-SOP-011.0, Attachment 2)

Station Number:	Station Name:	Analytical Request Record Number:
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Automated Sampler							
GLASS BOTTLES				POLY BOTTLES			
<i>BOTTLE #</i>	Date	Time	Comments <small>(bottle type, volume, readings)</small>	<i>BOTTLE #</i>	Date	Time	Comments <small>(bottle type, volume, readings)</small>
1				1			
2				2			
3				3			
4				4			
5				5			
6				6			
7				7			
8				8			
9				9			
10				10			
11				11			
12				12			
13				13			
14				14			
15				15			
16				16			
17				17			
18				18			
19				19			
20				20			
21				21			
22				22			
23				23			
24				24			
Total volume (liters):				Total volume (liters):			

Sampling event checked/reviewed by: Name and Initials						Date:	
Relinquished By: Signature	Date	Time		Received By Signature	Date	Time	

**Los Alamos National Laboratory
Water Quality and Hydrology Group (ENV-WQH)
Surface Water Sampling Field Sheet**

(ENV-WQH-SOP-011.0, Attachment 2)

Guidance for completing the form.

Print clearly -

1. General information -

Station Name: Formal name of location where sample is collected. Ex: Los Alamos Below Ice Rink.

Station Number: E name, location of sample collected. Ex: E026

Sampled By: Person/persons collecting or retrieving samples

Mean Time: Total time spent retrieving samples divided by one-half. Not real time, initial arrival at station. This should be Mountain Standard Time.

Date: The month, day, year of personal retrieval of samples

Analytical Request Record No: Number assigned to the set of samples. Assigned after retrieval.

Sample Purpose: Circle the reason for the sample

2. Field measurements and conditions -

Field measurements -

Q. Inst.: Discharge, volume rate of flow, in units. How many cfs (cubic feet per second), actual measurement, rating, or estimation

Gage Ht: Point at which the water surface elevation is based on numbered gage staff. (unit = feet)

Staff: A reference point to measure gage height.

HWM: High water mark, the highest point the level of water flow. Usually seen as piled debris.

Peak Discharge: Largest volume of water flowing through sample site during a flow period.

pH: Hydrogen ion content. Water need in order to take measurement

Water Temp: Measurement of the temperature of the water. Water needed in order to take measurement. Measurement should be taken during the time of sample take.

Sample conditions -

Location: Type of area at which sample was taken. Ex: station gage, bank, boat.

Sampling Site: Type of area containing water. Ex: pool, riffle, open channel. An open channel consists of an uncontrolled waterway by artificial devices.

Sampler type: ie, ISCO, grab

Bottom: The sediment mixture of which a streambed, lake, pond, reservoir or estuary bottom is composed. Ex: rock, sand, concrete, etc.

Stage Conditions: Condition of water in the channel. Ex: rising, falling, stable, etc.

Hydraulic Event: Type of event. Ex: flood, snowmelt, routine sampling, etc.

Stream Color(s): Type or clarity of water being sampled. Ex: clear, brown, etc.

Weather: Conditions of external environment

Stream Mixing: Quality of suspended particles within the water. Good, Fair, Poor.

Visual observations – Requirement of the NPDES Storm Water Permit

Inspection Completed from sample with first half hour of flow: From start of flow a half hour passed (yes/no)

Reason if not within first half hour: State reason as to why the sample was not taken. Ex: after work hours.

**Los Alamos National Laboratory
Water Quality and Hydrology Group (ENV-WQH)
Surface Water Sampling Field Sheet**

(ENV-WQH-SOP-011.0, Attachment 2)

Provide description -

Odor: Can a smell be detected? If yes, describe.

Clarity: Transparency of the water.

Settled Solids: Amount of sediment collected at the bottom of sampled liquid. (unit = mm/inches)

Foam: Collection of froth, bubbles, etc. if any.

Color: Ex: brown, clear, gray, etc.

Floating Solids: Anything floating on the surface of the sample. Ex: debris, pine needles, etc.

Suspended Solids: Anything floating within the sample. Ex: debris.

Oil Sheen: The presence of oil within or upon the surface of the sample. Appears as a rainbow of colors, prismatic.

Other indicators of possible storm water pollution: Any other description of the sample not covered by the above categories.

Other Observations: Fill in as necessary to other conditions, concerns about the sample.

3. General information -

Station Name: Formal name of location where sample is collected. Ex: Los Alamos Below Ice Rink.

Station Number: E name, location of sample collected. Ex: E026

Sampled By: Person/persons collecting or retrieving samples

Mean Time: Total time spent retrieving samples divided by one-half. Not real time, initial arrival at station. This should be Mountain Standard Time.

Date: The month, day, year of personal retrieval of samples

Analytical Request Record No: Number assigned to the set of samples. Assigned after retrieval.

Sample Purpose: Circle the reason for the sample

4. Field measurements and conditions -

Field measurements -

Q. Inst.: Discharge, volume rate of flow, in units. How many cfs (cubic feet per second), actual measurement, rating, or estimation

Gage Ht: Point at which the water surface elevation is based on numbered gage staff. (unit = feet)

Staff: A reference point to measure gage height.

HWM: High water mark, the highest point the level of water flow. Usually seen as piled debris.

Peak Discharge: Largest volume of water flowing through sample site during a flow period.

pH: Hydrogen ion content. Water need in order to take measurement

Water Temp: Measurement of the temperature of the water. Water needed in order to take measurement. Measurement should be taken during the time of sample take.

Guidance for completing the form.

Print clearly -

Sample conditions -

Location: Type of area at which sample was taken. Ex: station gage, bank, boat.

Sampling Site: Type of area containing water. Ex: pool, riffle, open channel. An open channel consists of an uncontrolled waterway by artificial devices.

Sampler type: ie, ISCO, grab

Bottom: The sediment mixture of which a streambed, lake, pond, reservoir or estuary bottom is composed. Ex: rock, sand, concrete, etc.

Stage Conditions: Condition of water in the channel. Ex: rising, falling, stable, etc.

Hydraulic Event: Type of event. Ex: flood, snowmelt, routine sampling, etc.

Stream Color(s): Type or clarity of water being sampled. Ex: clear, brown, etc.

Weather: Conditions of external environment

Stream Mixing: Quality of suspended particles within the water. Good, Fair, Poor.

**Los Alamos National Laboratory
Water Quality and Hydrology Group (ENV-WQH)
Surface Water Sampling Field Sheet**

(ENV-WQH-SOP-011.0, Attachment 2)

Visual observations – Requirement of the NPDES Storm Water Permit

Inspection Completed from sample with first half hour of flow: From start of flow a half hour pasted (yes/no)

Reason if not within first half hour: State reason as to why the sample was not taken. Ex: after work hours.

Provide description -

Odor: Can a smell be detected? If yes, describe.

Clarity: Transparency of the water.

Settled Solids: Amount of sediment collected at the bottom of sampled liquid. (unit = mm/inches)

Foam: Collection of froth, bubbles, etc. if any.

Color: Ex: brown, clear, gray, etc.

Floating Solids: Anything floating on the surface of the sample. Ex: debris, pine needles, etc.

Suspended Solids: Anything floating within the sample. Ex: debris.

Oil Sheen: The presence of oil within or upon the surface of the sample. Appears as a rainbow of colors, prismatic.

Other indicators of possible storm water pollution: Any other description of the sample not covered by the above categories.

Other Observations: Fill in as necessary to other conditions, concerns about the sample.

Configurations for ISCO Sampler

Prompt	Setting
Set Clock	Mountain Standard Time Refer to "Clock times", page 6 of this document.
Bottle and sizes	12 or 24 bottles
Bottle volume	1,000 ml
Suction line	3/8 inch
Suction line is	Teflon
Suction line length is	(will vary according to station)
Liquid detector	Enable
Rinse cycles	2
Enter head manually	Yes
Retry up to	2 times
Calibrate sampler	Enable
Start time delay	0
Enable pin master slave mode	No
Sample upon disable	No
Sample upon enable	Yes
Reset sample interval	No
Inhibit countdown	No (N/A)
Select option event mark	Pulse At beginning of purge
Purge counts	100 pre sample counts 1,000 post sample counts
Tubing life	165,149 pump counts Warning at 500,000
Rest pump counter	No
Pump count to warning	500,000
Program lock	Disable
Sample ID	-----
Run diagnostics	
Software revision	#46
Testing RAM	
Testing ROM	
Pump count test	
Reinitialize	No
Exit Configuration	