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**INSPECTION AND MONITORING PLAN  
CONTAMINATED GROUNDWATER SEEPS  
317/319/ENE AREA  
ARGONNE NATIONAL LABORATORY**

October 11, 1996

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Environmental Management Operations  
Argonne National Laboratory  
9700 South Cass Avenue  
Argonne, Illinois 60439

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**Inspection and Monitoring Plan  
Contaminated Groundwater Seeps  
317/319/ENE Area  
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## 1 INTRODUCTION

During the course of completing the Resource Conservation and Recovery Act (RCRA) Facility Investigation (RFI) in the 317/319/East-Northeast (ENE) Area of Argonne National Laboratory-East (ANL-E), groundwater was discovered moving to the surface through a series of groundwater seeps. The seeps are located in a ravine approximately 600 ft south of the ANL-E fence line in Waterfall Glen Forest Preserve. Samples of the seep water were collected and analyzed for selected parameters. Two of the five seeps sampled were found to contain detectable levels of organic contaminants. Three chemical species were identified: chloroform (14–25 µg/L), carbon tetrachloride (56–340 µg/L), and tetrachloroethylene (3–6 µg/L). The other seeps did not contain detectable levels of volatile organics. The water issuing from these two contaminated seeps flows into a narrow ravine where it is visible as a trickle of water flowing through sand and gravel deposits on the floor of the ravine. Approximately 100 ft downstream of the seep area, the contaminated water is no longer visible because it has drained back into the soil in the bed of the ravine.

A developed trail (graded gravel path approximately 10 ft wide) is located approximately 450 ft south of the seeps. A small undeveloped trail (an earthen path less than 2-ft wide) crosses the ravine approximately 200 ft south of the seeps. Figure 1 shows the location of the five seeps sampled. Figure 2 is a more detailed sketch of the area containing the contaminated seeps.

A risk analysis has been performed to estimate the maximum potential impact to human health and wildlife (Argonne National Laboratory [ANL] 1996). This assessment was based on a very conservative assumption that the hypothetical maximally exposed individual visits the seep area 20 times per year, consumes two cups of water, and wades through the water during each visit. On the basis of this scenario, the estimated risk is  $2 \times 10^{-6}$ . Stated in another way, if one million patrons were exposed to the water in this way, two would stand a chance of developing cancer.

While the discharge of contaminated water in a natural area accessible to the general public presents a very low risk to human health and wildlife, the current situation results in very limited opportunity for human contact with the contaminated water. The seep area is well off either the developed trail or the small undeveloped trail. To contact the water, an individual would have to leave the trail and walk through several hundred feet of underbrush and fallen trees. The level of risk associated with this seep depends on the concentration of the hazardous constituents and the extent

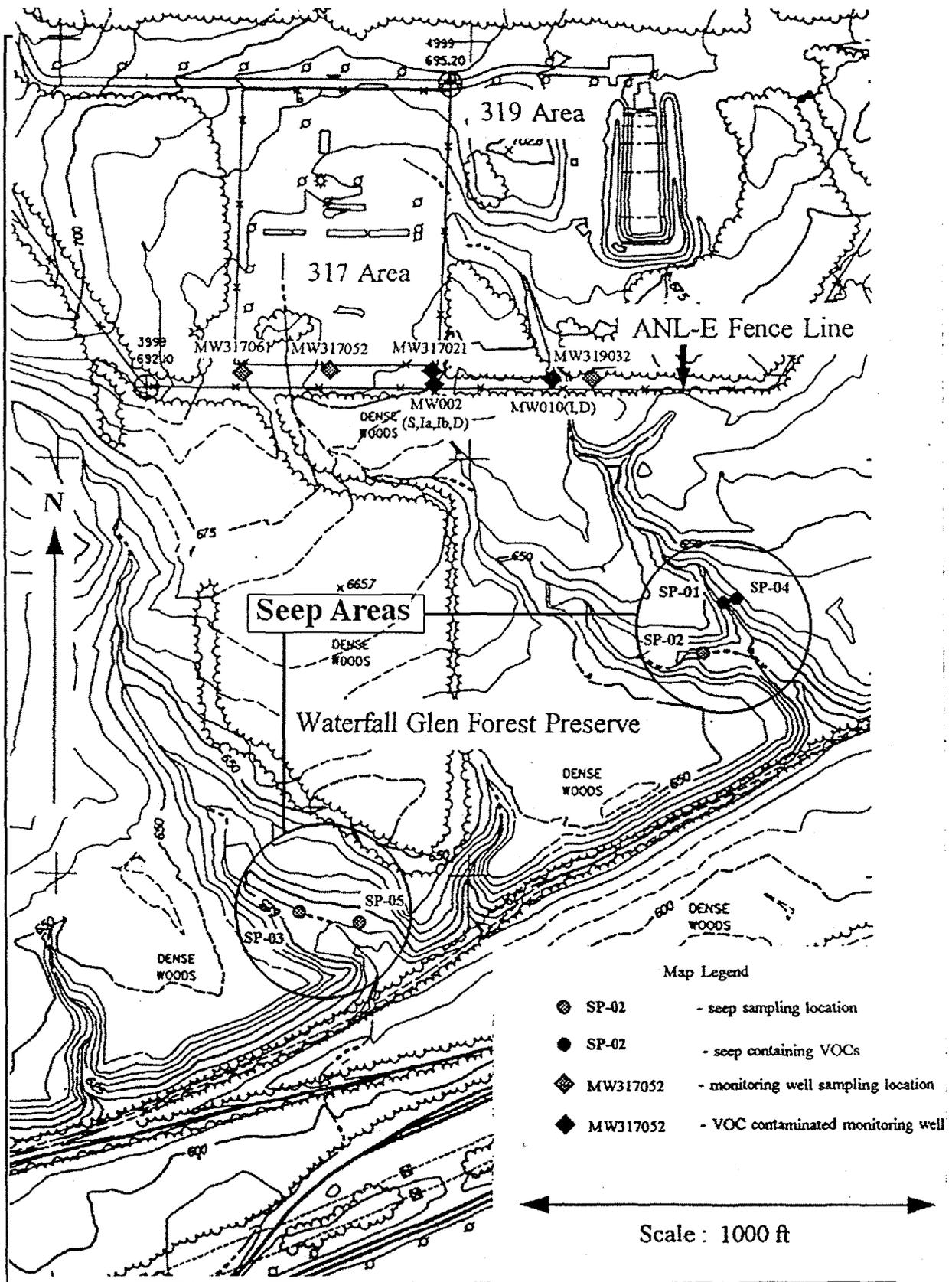


FIGURE 1 Groundwater Seeps in the Waterfall Glen Forest Preserve South of ANL-E

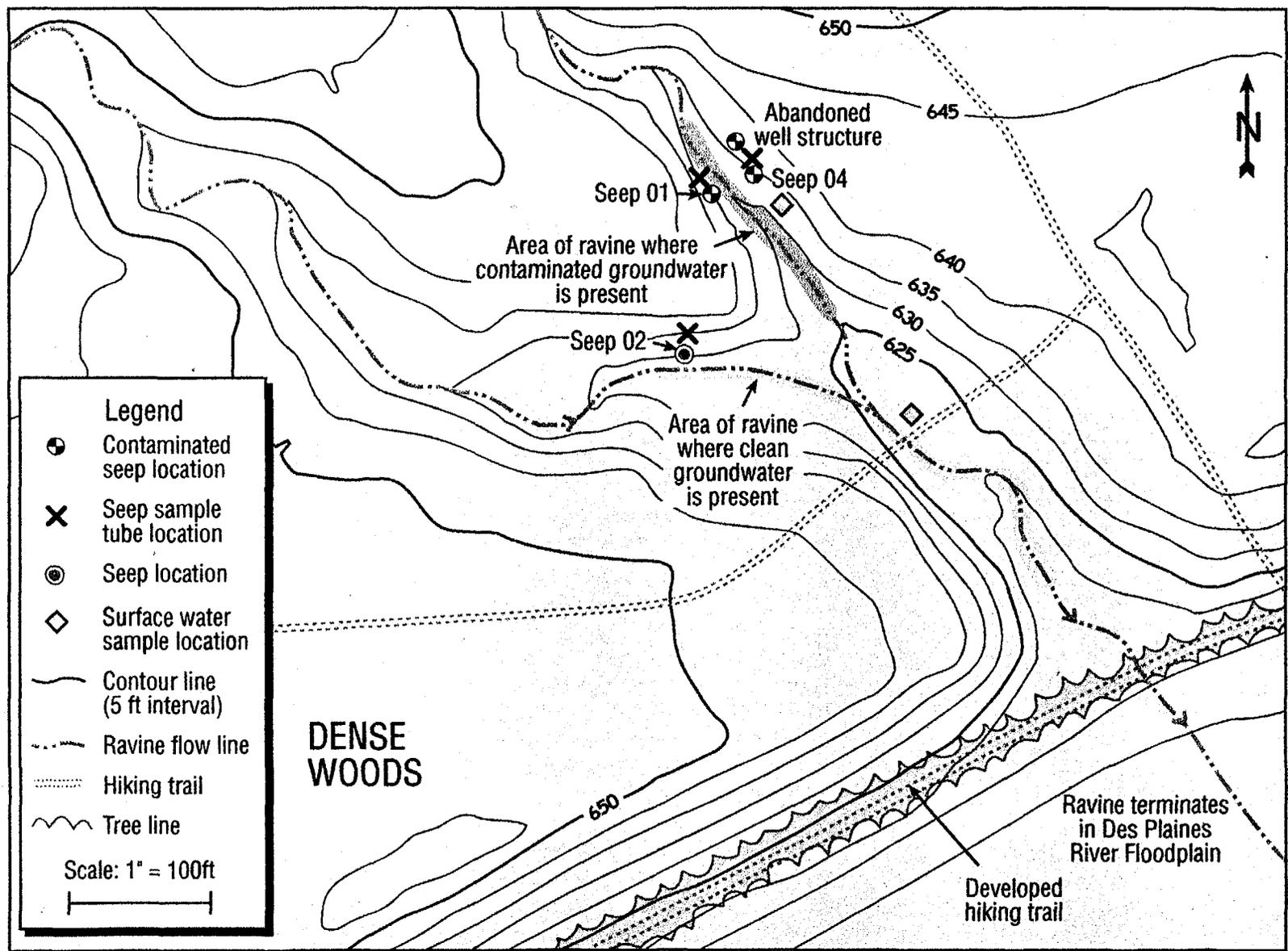


FIGURE 2 Detail of Seep Area



of human exposure to the contaminated water, which in turn, depends on the way in which park patrons use the area. To ensure that the risks associated with this situation are well understood, the seeps themselves and the use of this area by park patrons will be monitored. A program of regular inspections and periodic sampling and analysis will be implemented. This program will be carried out until a final solution is in place, and sampling is no longer warranted.

The objective of the inspection program will be to monitor the human traffic through the seep area to determine if the potential for exposure could increase above what is currently assumed in the risk analysis calculations. If the usage of the area changes in a way that would increase the potential risk above the current assumptions used in the risk analysis calculations, these calculations will be revised. If the revised estimate shows that the risk levels have increased significantly, the interim approach to managing these risks will be reevaluated.

The nature of the contaminants in the seeps will also be monitored on a regular basis. Samples of surface water flowing through the bottom of the ravine and groundwater emanating from the seeps will be collected and analyzed for chemical and radioactive constituents. The results of the routine sampling will be compared with the concentrations used in the risk assessment. If the concentrations exceed those used in the risk assessment, the risk calculations will be revised by using the higher numbers. This revised analysis will determine if additional actions are warranted.

## **2 MONITORING PROCEDURES**

The monitoring program will consist of two elements, visual inspections and sample collection and analysis.

### **2.1 VISUAL INSPECTIONS**

The seep area will be visited by an ANL-E representative once a week. The schedule for this periodic inspection may be revised if weather conditions do not allow reasonable access to the seeps. During the visit, the representative will observe the area and attempt to ascertain if park patrons are walking through the seep area. The representative will observe patrons who may be in the area and look for evidence of human traffic near the seeps, including footprints, crushed or broken vegetation, or other visible signs. After each visit, the representative will complete an inspection check list, which is shown in the Appendix to this document. The completed form will be placed in a permanent file at ANL-E under the supervision of the Director of Environmental Management Operations.

## 2.2 SAMPLING AND ANALYSIS

At least once a month for the first 12 months, and quarterly thereafter (if necessary), the water emanating from the contaminated seeps will be sampled and submitted for chemical and radiological analysis. The surface water in the ravine will be sampled at two locations just downstream of where the flows from seeps SP01 and SP04 enter. Since data from these locations represent the contaminant level that would be encountered by humans or wildlife, these data will be compared with the values used in the risk assessment calculations.

Samples of water from seeps SP01 and SP04, as well as from seeps SP02, SP03, and SP05 will also be collected. These samples will be collected from sample tubes installed in the shallow soil immediately upgradient of the seeps. Samples from these tubes will be representative of groundwater in the formation. The sample tubes will be placed with a hand auger. A borehole will be advanced until the porous layer containing the seep is encountered. A small diameter sample tube will be placed in the borehole, and the annular space will be backfilled with clean filter sand. The sample tube will then be sealed by placing bentonite pellets in the annular space starting about 6 in. above the screen. A small concrete pad will then be placed to a depth of about 1 ft around the sample tube to hold it in place. The sample tubes will be fitted either with lids and locks or outer protective casing to prevent unauthorized access. The data from these seeps will not be used for risk assessment purposes since they are not representative of the water flowing through the ravine. Rather, they will be used to gather more data on the nature and variability of discharges from the seeps.

## 3 SAMPLING PLAN

The collection, preservation, packaging, shipping, storage, and holding times of all samples collected during the monitoring phase of this project will follow all applicable Illinois Environmental Protection Agency (IEPA), U.S. Department of Energy (DOE), and U.S. Environmental Protection Agency (EPA) requirements and chain-of-custody protocols.

### 3.1 SAMPLING LOCATIONS AND RATIONALE

Aqueous samples will be collected at the two contaminated seep locations and two surface water locations (see Figure 2 for these sample locations). These samples will be collected on a monthly basis for the first year and then on a quarterly basis until such time as sampling is no longer warranted. These samples will be analyzed for a standard suite of contaminants, as shown in Table 1. Samples will be analyzed annually for RCRA Appendix IX organic and inorganic parameters (volatile organic compounds [VOCs], semivolatile organic compounds [SVOCs], polychlorinated biphenyls [PCBs]/pesticides, and metals) and radioactivity, including gross alpha, gross beta, and gamma ray spectroscopy. If elevated levels of contaminants are detected, further evaluation of the samples will be conducted.

**TABLE 1 Sample Analytical Requirements**

Sample Description	Monthly/Quarterly Sample		Annual Sample	
	VOCs (SW-846)	Tritium (DOE-EML)	Appendix IX <sup>1</sup> (SW-846)	Radioactivity <sup>2</sup> (DOE-EML)
Seep SP01	X	X	X	X
Seep SP04	X	X	X	X
Seep SP02 <sup>3</sup>	X	X	X	X
Seep SP03 <sup>3</sup>	X	X	X	X
Seep SP05 <sup>3</sup>	X	X	X	X
Surface water downstream of seep area	X	X	X	X
Surface water near undeveloped trail	X	X	X	X
Equipment blank	N/A <sup>4</sup>	N/A	X	X
MS/MSD	N/A	N/A	X	N/A
Duplicate	N/A	N/A	X	X
Trip blank	X	N/A	X	N/A

<sup>1</sup> Appendix IX analytes to be determined include VOC, SVOC, PCBs/pesticides, and metals.

<sup>2</sup> Radiological analysis includes gross alpha, gross beta/gamma, tritium, and gamma spectrographic analysis.

<sup>3</sup> These seeps will be sampled on a quarterly basis.

<sup>4</sup> N/A = not applicable.

Aqueous samples will also be collected on a quarterly basis from three other seep locations that do not appear to be contaminated. These other locations are shown in Figure 1. The quarterly samples will be analyzed for VOCs and tritium only. These samples will be analyzed annually for all organic, inorganic, and radioactive parameters.

## 3.2 SAMPLING PROCEDURES

### 3.2.1 Seep Sampling Procedures

The samples of water in the seeps will be collected from small diameter sample tubes placed in the layer of porous soil through which the seep water is flowing. The sample tubes will be located adjacent to the observed seep areas. Installation of these sample tubes is discussed in

Section 2.2. Sample collection from the tubes will, in general, follow groundwater monitoring well sampling procedures found in Appendix D.5 of the IEPA-approved 317/319/ENE Area RFI Work Plan (ANL 1994). Samples will be collected with bailers or similar devices to minimize agitating the water in the sample tube.

In the event that the sample tubes do not yield sufficient water (such as when the water in the tube is frozen or the water level has dropped below the screened interval), an attempt will be made to collect a seep sample by digging a small depression in the soil at a point where groundwater seepage is observed. The hole will be allowed to fill with water emanating from the seep. Once the turbidity in the depressions has settled, the samples will be collected. The sample will be collected in a way that will not disturb the settled soil particles. Samples for the annual baseline sampling will not be collected in this manner because of the difficulty in collecting the required sample volumes.

### 3.2.1.1 Presampling Seep Sample Tube Purging

The following steps will be used to collect seep samples.

1. The sample tube will be unlocked and a stiff brush used to brush away any dirt or debris from around the tube cap. The cap will be removed.
2. The precleaned water level probe will be lowered down the sample tube until the indicator sounds. The depth to water from the mark on the tube casing will be measured (to the nearest 0.01 foot). This measurement will be recorded in the logbook.
3. The fluid volume in the sample tube casing (either casing or bore volume) will be calculated using the following formula:

$$(\pi) \times (d^2 / 4) \times (h_1 - h_2) \times 7.48 = \text{gallons per bore volume,}$$

where:

d = inner diameter of sample tube bore (ft),

$h_1$  = depth of sample tube from the top of the tube casing (ft),

$h_2$  = depth of water from the top of the casing (determined in the field) (ft),

and

bore vol. = volume of water equivalent to the standing water in a sample tube.

5. A bailer or tubing pump will be lowered into the sample tube to begin water removal. The water will be collected to measure the purge volume, and the

rate of recharge will be monitored. If full recovery occurs within two hours, the purging will be continued until the required volume is evacuated in accordance with the sampling plan; sampling will then commence. If full recovery exceeds two hours, a purge will be performed a second time

6. A minimum of three casing volumes will be purged, and purging will continue until the discharge parameters (pH, temperature, and specific conductance) stabilize.
7. After the appropriate volume has been collected, the purged water will be disposed of by pouring it into the soil surface downstream of the seeps.
8. All field measurements and chemistry determinations will be recorded in the logbook.
9. Sampling will begin during this recovery phase and it will be made certain that a sufficient sample volume is available to complete filling sample containers for any given analytical suite, as recovery permits.
10. The bailer will be decontaminated.

#### **3.2.1.2 Procedure for Collecting Seep Samples**

1. The sample tube will be allowed to recover to 80% of its initial volume (0.8 bore volumes) before sampling. The water level probe will be used to monitor recovery. If a sample tube is not recovering rapidly, the field manager may choose to have the sample tube sampled before the 80% recovery has been achieved.
2. The bailer will be slowly lowered into the sample tube until it contacts the water surface.
3. The bailer will be allowed to sink and fill with minimum surface disturbance.
4. The bailer will be slowly raised out of the sample tube, and the bailer line will not be allowed to contact the ground.
5. The bailer will be tipped to allow a slow discharge to flow gently down the inside wall of the sample bottle with minimal entry turbulence.

6. The sample will be filtered or preserved as required.
7. The necessary steps will be repeated as needed to acquire a sufficient volume of sample.
8. Two samples will be collected for metals analysis, an unfiltered and a filtered sample. The filtered samples will be filtered in the field with a filter apparatus and a hand vacuum pump. The filtered sample will be preserved after filtration.
9. A final set of pH, temperature, and specific conductance readings will be obtained upon completion of sampling.

### **3.2.2 Surface Water Sampling**

Surface water samples will be collected from two locations, one downstream of the area where contaminated seeps have been observed and the other near the small, undeveloped trail. These samples will be monitored monthly for VOCs and tritium only. Samples will also be analyzed annually for SVOCs, PCBs/pesticides, metals, and radioactivity, including gross alpha, gross beta, and gamma ray spectroscopy. If elevated levels of contaminants are detected, further evaluation of the samples should be conducted.

The surface water samples will be collected during dry weather. Sampling should occur no sooner than 48 hours since the latest rainfall exceeding 0.1 in. of precipitation, as measured on the ANL-E site. If stormwater runoff or snowmelt water is present in the ravine, the sampling event will be rescheduled.

The following procedures will be used to collect surface water samples

1. Water samples will be collected at the surface water sampling location by placing the container directly in the flowing water stream, if possible. Larger samples will be collected with a transfer device constructed of clean, inert material like glass, Teflon, or stainless steel. The transfer device will be used to transfer water from the ravine to the sample bottle. The transfer device must also be used with sample containers containing preservatives.
2. Samples will be collected in a manner that minimizes the disturbance of sediment and the introduction of sediment into the sample. Two samples will be collected for metals analysis, an unfiltered and a filtered sample. The

filtered samples will be filtered in the field using a filter apparatus and a hand vacuum pump. The filtered sample will be preserved after filtration.

### **3.3 SAMPLE LABELING**

Sample labels will uniquely identify the sample without any other documentation. These labels will include the following information at a minimum:

- Project/site name,
- Project number,
- Date and time the sample was taken,
- Unique sample number,
- Sample location (e.g., depth),
- Name of sample collector, and
- Method of preservation used.

Labels will be filled out with indelible/waterproof ink and placed directly onto the sample container.

A unique sample identification number will be used for each sample taken. The sample identification numbers will include three elements, sample type [e.g., SP (seep water), SW (surface water), etc.], sample location (the designation FOR will be used to designate that the samples were collected from the Forest Preserve), and sample sequence number. An example of a sample number is SP01-FOR-001. The following sample types will be used:

- SP - seep water sample,
- SW - surface water sample,
- MSD - matrix spike duplicate,
- FB - field blank, and
- TB - trip blank.

### 3.4 SAMPLE PREPARATION, PACKAGING, AND SHIPMENT

Samples will be placed in dedicated, properly labeled bottles that will then be sealed with tape. After completion of sample labeling, all samples will be placed immediately in an iced cooler. When sampling has been completed, the cooler will be transported to the EMO sample preparation laboratory in Building 362 and prepared for transport to the laboratory. Chain-of-Custody forms will be prepared in the field for all samples that will be shipped to the laboratory. Samples will be shipped to the laboratory within 48 hours of collection. If overnight storage is required, samples will be placed in a locked sample refrigerator maintained at approximately 4°C. The following steps will be completed prior to shipping samples to the laboratory.

1. The sample jar lids will be hand-tightened and secured with tape.
2. Packing material will be placed in a watertight plastic cooler, as needed, for sample protection.
3. Sample bottles will be placed in watertight plastic bags to keep them from touching each other.
4. Ice will be placed in watertight bags, and the bags placed around the samples in the cooler.
5. The Chain-of-Custody and Request for Analysis forms will be placed in a plastic watertight bag and taped to the inside of the cooler lid.
6. The cooler lid will be secured with packing tape.
7. An address label will be placed on the cooler and marked which side is "up."
8. Custody seals will be placed on the cooler and covered with clear tape for protection.
9. Cooler lids will not be secured until shipping time so that the ice will be fresh.

Sample bottles will be precleaned and certified as uncontaminated so that sample quality can be maintained during handling and shipping. Also, the required preservation method will be used to ensure the chemical and physical stability of the sample during normal and reasonable time lapses that may occur between sampling and analysis.

### 3.5 CHAIN-OF-CUSTODY PROCEDURES

A Chain-of-Custody Form will be completed and placed with the samples before packaging and storage. This form will stay with the samples at all times, and any changes of custody will be documented on the form. A sample will be considered to be in someone's custody if it is:

- In a person's actual possession;
- Within a person's view, after being in physical possession;
- Locked in a tamper-proof container, after being in physical possession; or
- Put in a secure, restricted location, after being in physical possession.

The following minimum procedures will be required for all samples taken during this project:

1. After final packing of the samples, the shipping coolers will be secured with custody tape at the front right and back left corners.
2. A Chain-of-Custody Form will be completed in the field for all samples. Information will include the project name and number, the unique sample identification number, name of sampler(s), laboratory destination, types of analysis, special instructions, and any possible sample hazard. A copy of this record will accompany the samples.
3. When a change of sample custody occurs, the new custodian will sign and date the record in the "received by" box.
4. When samples are shipped to the laboratory by a commercial carrier, the Chain-of-Custody Form will be sealed in a watertight bag and taped to the inside of the shipping container lid. Before the shipping container is turned over to a commercial carrier, it will be sealed.
5. When the designated laboratory receives the samples, the quality control (QC) coordinator at the laboratory will open the sample container, compare the contents with the Chain-of-Custody Form, and sign and date the form. Any discrepancies will be noted on the form.
6. If discrepancies are found, the samples in question will be set aside from the other samples, and all cognizant parties will be immediately notified.

7. Each sample bottle will be documented on the Chain-of-Custody Form by recording its unique identification number in the appropriate box.
8. The analysis to be run of each sample will be shown in the analysis request box of the Chain-of-Custody Form.
9. Before sampling begins, the sampler will receive a copy of the Chain-of-Custody and Request for Analysis forms and related procedures.

### **3.6 LABORATORY ANALYTICAL METHODS**

All samples will be analyzed for the constituents listed in Table 1 according to analytical methods manual SW- 846 (EPA 1986 and Final Update, July 1992) for chemical analysis and DOE-Environmental Measurements Laboratory (EML) methods for radiological analysis. Specific methods and methods reporting limits are discussed in Section E of the RFI Work Plan (ANL 1994).

### **3.7 FIELD DOCUMENTATION**

#### **3.7.1 Field Activity Log**

A field activity log will be kept to record all field activities. The log will be filled out with indelible ink and will include the following minimum information as applicable:

- Project identification;
- Start time, date, and weather conditions;
- The daily field calibration results for the field screening instrument;
- A list of all project personnel on site and their functions;
- Type of field activity;
- Any changes or modifications to the plans;
- Detailed descriptions of work accomplished each day;
- Any problems encountered (e.g., contractor or subcontractor, equipment);

- Documentation of all visitors to the site; and
- Notation of sample locations, methods, identification numbers, time/date of collection, and methods of preservation.

The field activity log will be signed and dated by the cognizant party. At the end of each day, copies of the daily field activity log will be distributed to the Project Manager, all other appropriate project personnel, and the project file.

### **3.7.2 Seep Sample Collection Forms**

All seep sampling activities will be recorded on a seep sample collection form. The form will contain such information as date/time of sampling, purge method and date, depth to water, well volume, sample method, date/time, volume purged, weather conditions, well condition, sample number, analysis, preservative, container information, and documentation of sampling parameters. A copy of this form is shown in the Appendix.

### **3.7.3 Equipment Calibration**

All field screening instruments (pH meter, conductivity meter) will be recalibrated each day of use to an appropriate standard, and the results will be logged in the field activity log. Information included on the log will consist of the following:

- Type of equipment to be calibrated,
- Date and time of calibration,
- The equipment and the standards used,
- Method of calibration, and
- Instrument identification number.

## **3.8 SAMPLE QUALITY ASSURANCE/QUALITY CONTROL**

For field sampling activities, analytical accuracy and precision will be verified by collection and analysis of a series of field quality assurance (QA)/QC samples. Field QA/QC samples will

### 3.9 EQUIPMENT DECONTAMINATION

Sampling equipment will be decontaminated with nonionic detergent (Ancolox or a similar product) and rinsed with distilled water. The instrument will be allowed to air dry prior to its next use. Decontamination water will be poured onto the ground downstream of the sampling location.

## 4 HEALTH AND SAFETY

The work required to complete this interim action will be performed in accordance with applicable Occupational Safety and Health Administration (OSHA), DOE, and ANL-E policies and procedures. Though the water contains very low levels of hazardous chemicals, the concentrations are such that incidental contact during sample collection activities will have no detrimental effect on the samples. Other risks include trips and falls while walking through the rocky, wooded areas near the seep and contact with poison ivy and biting insects. To minimize risk from these hazards, appropriate safety precautions will be taken.

At a minimum, the following protective equipment will be required while collecting water samples.

- Safety glasses with side shields;
- Chemical resistant gloves;
- Rugged footwear suitable for walking in the Forest Preserve; and
- Tyvec coveralls may be worn to reduce the risk of insect bites and poison ivy; however, their use will be discouraged since the appearance of an individual in Tyvecs on Forest Preserve property could be misunderstood by the general public.

## 5 REFERENCES

Argonne National Laboratory, 1994, *Resource Conservation And Recovery Act Facility Investigation Work Plan, 317/319/ENE Area*, Argonne National Laboratory, Argonne, Ill., March.

Argonne National Laboratory, 1996, *Risk Assessment of Seeps from the 317 Area of Argonne National Laboratory*, Argonne National Laboratory, Argonne, Ill., September 17.

U.S. Environmental Protection Agency, 1986, *Test Methods for Evaluating Solid Waste*, 3rd ed., SW-846, Washington, D.C.



**APPENDIX:**

**FIELD FORMS: 317 AND 319 AREA GROUNDWATER SEEPS  
INSPECTION CHECKLIST AND SEEP SAMPLE  
COLLECTION FORM**

**ENVIRONMENTAL MANAGEMENT OPERATIONS**

**317 AND 319 AREA GROUNDWATER SEEPS  
INSPECTION CHECKLIST**

---

Date/Time of Inspection \_\_\_\_\_ Weather Conditions \_\_\_\_\_

1. Persons or animals present in vicinity of seeps? Yes \_\_\_ No \_\_\_
  2. Footprints present at any seeps? Yes \_\_\_ No \_\_\_
  3. Crushed or broken vegetation present at seeps? Yes \_\_\_ No \_\_\_
  4. Trash present at seeps? Yes \_\_\_ No \_\_\_
  5. Any other evidence of human contact with seeps? Yes \_\_\_ No \_\_\_
  6. Evidence of unauthorized access to seep sample tubes? Yes \_\_\_ No \_\_\_
  7. Evidence of tampering with seep sample tubes or staff gauges? Yes \_\_\_ No \_\_\_
  8. Flow from seeps? Yes \_\_\_ No \_\_\_
  9. Any soil or water discoloration at seeps? Yes \_\_\_ No \_\_\_
  10. Any surface water flow in ravines? Yes \_\_\_ No \_\_\_ Amount of flow: \_\_\_\_\_
  11. Any flow between seep area and ravine confluence? Yes \_\_\_ No \_\_\_
  12. Water level in well staff gauge: \_\_\_\_\_
  13. Samples collected? Yes \_\_\_ No \_\_\_
  14. Sample Numbers: \_\_\_\_\_
- Inspector's Name: \_\_\_\_\_ Signature: \_\_\_\_\_

Provide additional information for all questions answered **Yes**. Include question number, irregularity, and corrective action required, as appropriate. Use additional sheets if necessary.

### Ground Water Sampling Form

Well I.D.	Sampler
Purge Method Bailer / Bladder Pump / Pos. Disp. Pump	Sampling Method: Bailer / Bladder Pump / Pos. Disp. Pump
Dedicated: Yes No	Dedicated: Yes No
Purge Date: MMM/DD/YY ___/___/___	Sampling Date: MMM/DD/YY ___/___/___
Depth to Water: (ft btoc)	Depth of Well: (ft btoc)
Well Volume: (Gallons)	Volume Purged: (Gallons)

Weather Conditions and Temperature:

Well Condition Locked? Yes No

Sample ID	Analysis	Preservative	Container Type	Container Size (ml)	Headspace?	Filtered?
		HNO <sub>3</sub> H <sub>2</sub> SO <sub>4</sub> NaOH HCl	CG AG P TL	40 250 500 IK 4K	Y N	Y N
		HNO <sub>3</sub> H <sub>2</sub> SO <sub>4</sub> NaOH HCl	CG AG P TL	40 250 500 IK 4K	Y N	Y N
		HNO <sub>3</sub> H <sub>2</sub> SO <sub>4</sub> NaOH HCl	CG AG P TL	40 250 500 IK 4K	Y N	Y N
		HNO <sub>3</sub> H <sub>2</sub> SO <sub>4</sub> NaOH HCl	CG AG P TL	40 250 500 IK 4K	Y N	Y N
		HNO <sub>3</sub> H <sub>2</sub> SO <sub>4</sub> NaOH HCl	CG AG P TL	40 250 500 IK 4K	Y N	Y N

CG = Clear Glass AG = Amber Glass P = Plastic TL = Teflon Lined Lid

Time/Purge Vol.	Spec. Cond (micromhos)	pH	mvolts	Temp (C)	Other
/					
/					
/					
/					
/					

Other Field Observations



