

2004 Annual Inspection and Status Report for the Site A/Plot M, Cook County, Illinois Decontamination and Decommissioning Program Site

Summary

Site A/Plot M was inspected on March 10, 2004. The site, located within a county forest preserve with significant tree and grass cover, is in good condition. Monuments have been vandalized, as noted during previous inspections, and erosion was again observed at Plot M. There is no requirement for a follow-up inspection. Ground water and surface water monitoring results are summarized in this report and presented in detail in an annual report prepared by Argonne National Laboratory.

1.0 Introduction

This report presents the findings of the annual U.S. Department of Energy (DOE) inspection of Site A/Plot M at the Palos Forest Preserve in Cook County, Illinois.

M. R. Widdop (Inspector) of S.M. Stoller Corporation, the DOE Legacy Management (LM) Contractor at Grand Junction, conducted the inspection on March 10, 2004. L. McGee of DOE-LM in Morgantown, West Virginia, participated. Also present were Dan Webber, representing the Cook County Forest Preserve, and Brian Quirke of the DOE-CH Operations Office public affairs organization. Norbert Golchert of Argonne National Laboratory (ANL) provided a site orientation during the inspection.

The purposes of the inspection were to look for evidence that the integrity of the disposal facility is not compromised, to evaluate the condition of the monuments, and to examine the condition of a subset of the DOE monitor wells. Careful examination of all monitor wells was not necessary because ANL personnel visit the wells for sampling on a regular basis and perform required maintenance. Features discussed in this report are shown the attached figure. Photographs that support specific observations are identified in the text and on the figure by photograph location (PL) numbers.

Inspectors drove to Site A, walked to the center of the area, and examined the monument and some of the monitor wells (PL-1). The team walked the perimeter roads of Site A, inspecting monitor wells and observing the general condition of the site. Next, the team drove to the junction with the road leading to Plot M. Because the steep road to Plot M was muddy, inspectors walked to that location.

The following points describe the site:

1. Site A contains two buried nuclear reactor shells and buried debris from the various support buildings associated with the reactors and other laboratory operations. Operations commenced in 1943 and decommissioning was complete by 1956. The site occupies roughly 19 acres. The only structures visible are the stone monument marking the site, occasional

concrete flatwork and fence post collars, a section of the original chain link fence, and monitor wells. The site surface, once cleared and the location of a golf course before World War II, is returning to its “natural state.”

2. Plot M was a series of trenches used to bury radioactive wastes. Plot M is less than 1 acre in area. A granite monument and six boundary monuments mark the site, which consists of a mounded earth cover planted in grass (PL-2), placed over a concrete cap. The cap was constructed in 1956.
3. More than 50 wells and boreholes are present at Site A and Plot M.
4. In 2003 and 2004, DOE and Stoller staff from the DOE office in Grand Junction, Colorado, worked with representatives of the DOE Chicago Operations Office, ANL, and the Illinois Emergency Management Agency to evaluate ground water and surface water conditions and the current monitoring program. The monitoring program will be revised, as described in the *Environmental Monitoring Program at Site A and Plot M, Palos Forest Preserve, Cook County, Illinois* (GJO-2004-558-TAC, February 2004). The new program entails quarterly sampling at 32 locations. Monitoring, analysis, and reporting will continue to be conducted by ANL.
5. Environmental monitoring reports are issued annually by ANL. In 2002, hydrogen-3 (tritium) was detected in picnic wells at the Red Gate Woods picnic area, in monitor wells completed in the glacial drift at Site A and Plot M, and in wells completed in the dolomite bedrock at Plot M. Tritium levels exceeded the standard in wells completed in the glacial drift at and downgradient of Plot M. Strontium-90 was detected in wells at Site A and Plot M, and slightly exceeded the standard in one well completed in the glacial drift at Site A. All exposure pathways to contaminated ground water are incomplete (handles have been removed from the picnic wells because of fecal coliform contamination). Tritium levels exceed the standard at a seep opposite Plot M and decrease downstream. The seep and stream flow in the spring, and exposure does not pose a risk to human health or the environment (*Evaluation and Recommendation for Environmental Monitoring at Site A and Plot M, Palos Forest Preserve, Cook County, Illinois*, GJO-2003-462-TAC, August 2003).

2.0 Inspection Results

The surface of Plot M and portions of Site A exist as clearings in the hardwood forest. The remainder of Site A is becoming forested.

A subset of the currently active monitor wells and boreholes was inspected and is in good condition. Minor vandalism, such as the graffiti on the Site A and Plot M monuments, continues (PL-3 and PL-4). No other vandalism was noted.

Erosion persists along the paths crossing Plot M between the monument and the south and west sides of the site. The inspector noted limestone rock, approximately 1.5 inches in diameter, in the exposed soil in the bottom of the eroded ruts. Previously, DOE had requested that the forest preserve district place a soil/rock mixture in the ruts to try to stabilize the trails. The concrete cover is not yet exposed or threatened but erosion again is approximately one foot deep and the

earth cover over the concrete cap is only two feet thick. DOE should continue to monitor this area and ensure the concrete cap is not exposed. The ANL representative will request that the Palos Forest Preserve District repair the erosion again. These trails are used frequently and vegetation will not survive the traffic. Measures will be considered to reduce the velocity of runoff water.

The attached drawing depicts most of the active monitoring locations for Site A/Plot M, as established with a global positioning system unit in 1999.

3.0 Recommendations

1. Erosion has occurred along the paths crossing Plot M.

Recommendation: Enough traffic passes over these paths to preclude successfully repairing the erosion by filling the depression with soil and reseeded. A soil/rock mixture also failed to stabilize the trails. Therefore, DOE will discuss with the Palos Forest Preserve District and the ANL representative other alternatives for preventing erosion over the Plot M cover.

4.0 Photographs

Photograph Location Number	Azimuth	Photograph Description
PL-1	75	Inspection team by Site A marker.
PL-2	0	Plot M.
PL-3	90	Site A marker.
PL-4	15	Plot M marker.



SAM 03/2004. PL-1. Inspection team by Site A marker.



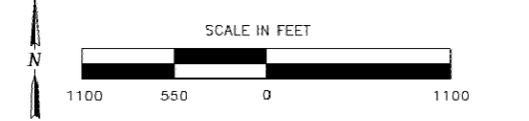
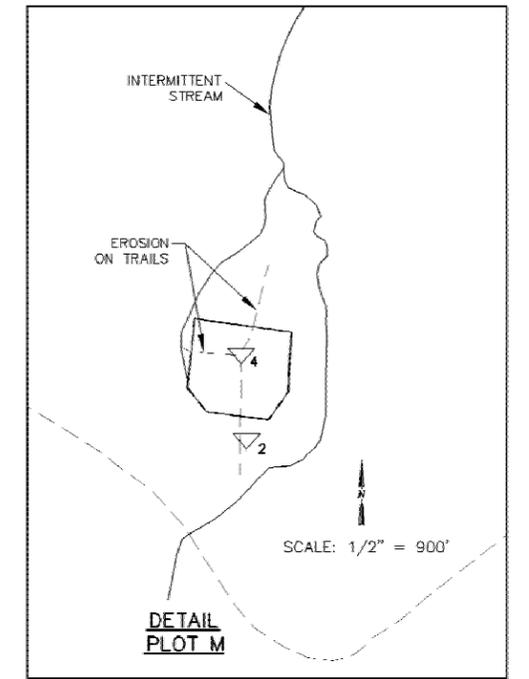
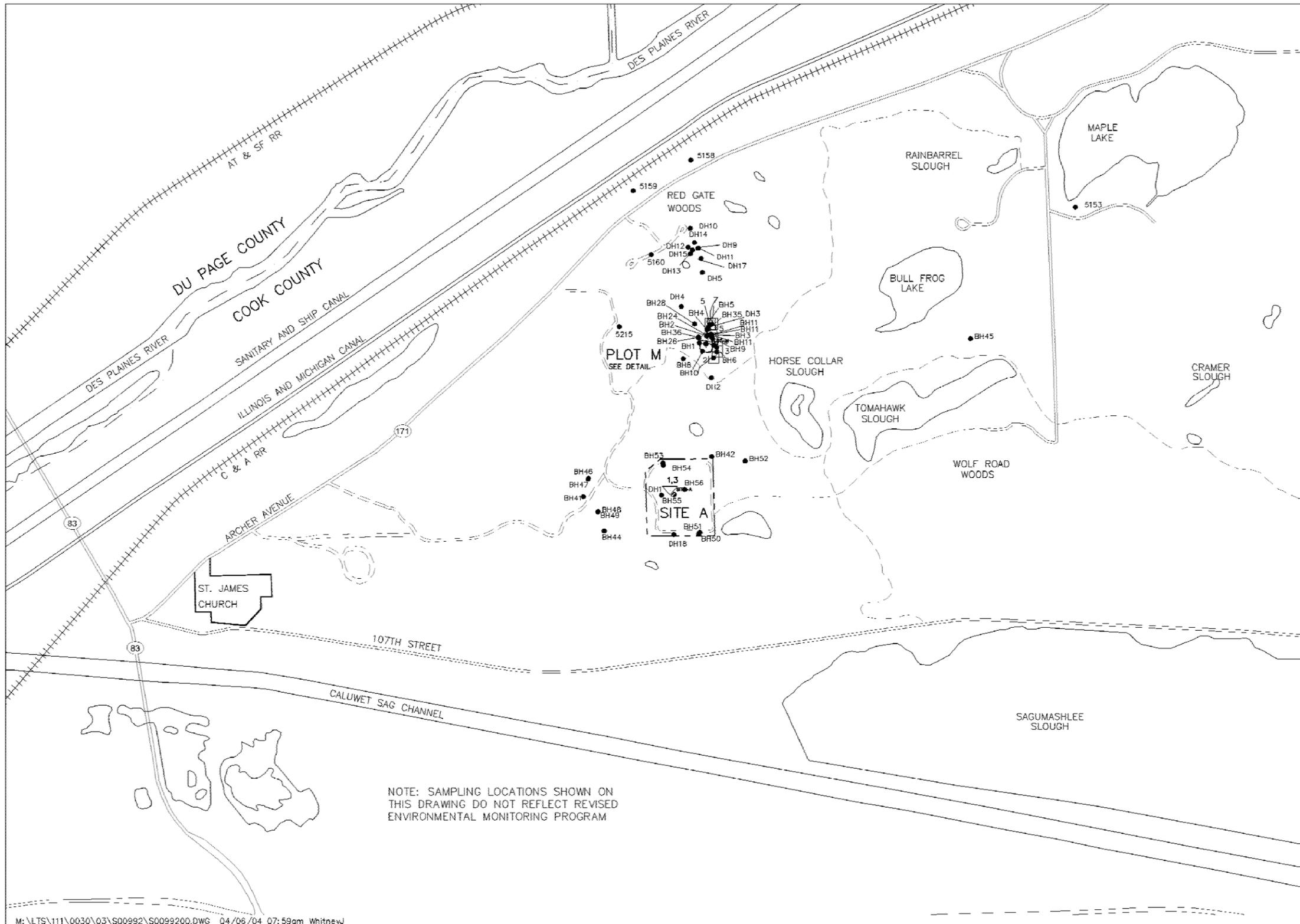
SAM 03/2004. PL-2. Plot M.



SAM 03/2004. PL-3. Site A marker.



SAM 03/2004. PL-4. Plot M marker.



EXPLANATION

● 5153	PICNIC WELL
● DH2	DOLOMITE WELL
● BH28	BOREHOLE
□ 5	SURFACE SAMPLE LOCATION
●	SITE MARKER
---	PROPERTY BOUNDARY
====	DIRT ROAD
=====	PAVED HIGHWAY OR STREET
- - - - -	NON-MOTORIZED TRAIL
+++++	RAILROAD
=====	RIVER, CANAL, LAKE, POND, SLOUGH
-----	COUNTY LINE
▽ 1	PHOTO LOCATION AND NUMBER

NOTE: SAMPLING LOCATIONS SHOWN ON THIS DRAWING DO NOT REFLECT REVISED ENVIRONMENTAL MONITORING PROGRAM

ANNUAL INSPECTION CONDUCTED
MARCH 10, 2004

U.S. DEPARTMENT OF ENERGY GRAND JUNCTION, COLORADO	Work Performed by S.M. Stoller Corporation Under DOE Contract No. DE-AC01-02GJ79491
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2004 ANNUAL INSPECTION DRAWING
SITE A-PLOT M, CHICAGO, ILLINOIS
DISPOSAL SITE

DATE PREPARED: APRIL 6, 2004	FILENAME: S0099200
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