Department of Energy
Office of Legacy Management

JAN 27 2005

WM-42

Mr. Gary Janosko, Chief
U.S. Nuclear Regulatory Commission
Fuel Cycle Facilities Branch
Mail Stop T-8A33
Washington, DC 20555-0001

Subject: Transmittal of the Follow-up Inspection Report on the Stream Bank Damage at the Canonsburg, PA, Disposal Site

Dear Mr. Janosko:

Enclosed is the report for the follow-up inspection conducted by the U.S. Department of Energy (DOE) at the subject site to assess flood damage. The report assesses the damage and provides recommendations for repairs.

On September 22, 2004, DOE conducted the annual inspection of the Canonsburg, Pennsylvania, UMTRCA Title I site. Inspectors found that portions of the Chartiers Creek stream bank adjacent to and downstream of the site were damaged by high water events, during the previous week, resulting from Hurricanes Frances and Ivan. Waste containment structures were not damaged.

The DOE informed your agency of the damage by telephone and e-mail on October 4, 2004, and by letter dated October 19, 2004. The DOE communicated objectives for the follow-up inspection (the inspection plan) to Jill Caverly of your staff by e-mail on October 14, 2004. The DOE mobilized a geotechnical engineer to the site on October 28, 2004, to conduct the follow-up inspection.

The DOE intends to perform all recommended repairs as soon as possible, within the bounds of procurement and budgetary constraints. If you have questions about site conditions or wish to discuss the planned DOE actions, please call me at (304) 285-4991 or e-mail me at ron.staubly@netl.doe.gov.

Sincerely,

Ron Staubly
Site Manager

Enclosure

19901 Germantown Road, Germantown, MD 20874 • 2597 B 3/4 Road, Grand Junction, CO 81503
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1000 Independence Ave., S.W., Washington, DC 20585 •
REPLY TO: Grand Junction Office

SISP review complete

cc w/enclosure:
J. Caverly, NRC
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T. Plessinger, LM-50
R. Plieness, LM-50
C. Carpenter, Stoller
M. Widdop, Stoller
Project CAN 105.02 A (C. Smith)

Staubly/2CanonsburgChartiers ltr NRC.doc

Follow-up Inspection Report of the Stream Bank Damage at the Canonsburg, Pennsylvania, Disposal Site

Two sections of the Chartiers Creek stream bank were damaged by Hurricane Ivan floodwaters on September 17, 2004. Repair of both regions is recommend. The first region, denoted Area #1, is adjacent to the disposal cell along the far northern portion of the site near perimeter sign P7. The second region, denoted Area #2, is along the bank of Area C. Damage to these areas can be repaired with field direction. Detailed engineering drawings and designs are not necessary. Stoller will provide an estimate of construction costs to repair Areas #1 and #2 under separate cover. It is likely that a General Permit will be needed from the State of Pennsylvania to work in Chartiers Creek. We expect the permit will take 1 month to acquire.

Area #1, Description of Damage

Chartiers Creek was out of its bank near perimeter signs P6 and P7 during the flood. Plant debris remaining in the fence indicates that floodwater remained out of the banks until immediately downstream of the Strabane Avenue Bridge. During the flood, soil eroded from the base of a large tree (2½' to 3' in diameter), which fell into the creek creating a large root ball void. The void is nearly semicircular; approximately 44 feet across, approximately 22 feet from the creek edge, and approximately 9 feet deep. Photographs 1 and 2 show the extent of the root ball void and encroachment to the disposal cell fence.

Photograph 1, Roy Woods and Ron Staubly inspecting the root ball void, 9/21/2004.

Photograph 2, Ron Staubly crossing root ball void near fence, 9/21/2004.

Area #1, Repairs

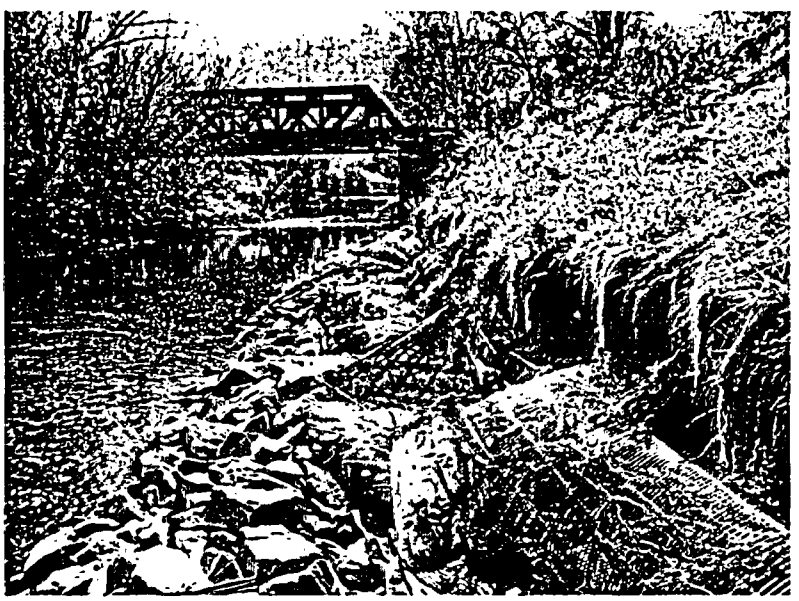
Repair of Area #1 will require removal and disposal of the large tree, and backfilling and compacting the void with pit run soil before placing surface rock erosion protection along the bank. Additionally, cleaning and removal of vegetation along the north and east fence lines, and moving approximately 400 feet of existing fence line approximately 15 feet from the current location should be conducted. Cleaning and filling the root ball void will require work in or near Chartiers Creek.

Area #2, Description of Damage

Floodwaters appear to have returned to the channel after crossing Strabane Avenue immediately south of the disposal cell at the Strabane Avenue Bridge. Flow was heavily laden with debris and deposited an estimated 110 yd^3 to 150 yd^3 of sand, gravel, cobbles and boulders up to 30 inches in diameter to form a bar in the creek where the flow re-entered the channel (Photograph # 3). Deposition is located approximately midway between the Strabane Avenue Bridge to the south and a railroad bridge to the south. This section of the bank was reinforced with geotextile in 2000. Both sections north and south of the debris deposit should be repaired.

Photograph #3, Area #2, Debris Deposition, 10/28/2004.

The region south of debris deposition for approximately 250 feet had soil stripped from between layers of geotextile reinforcement as shown in photograph #4. Geotextile reinforcement remains embedded in the slope, and the riprap rock toe remains in place.

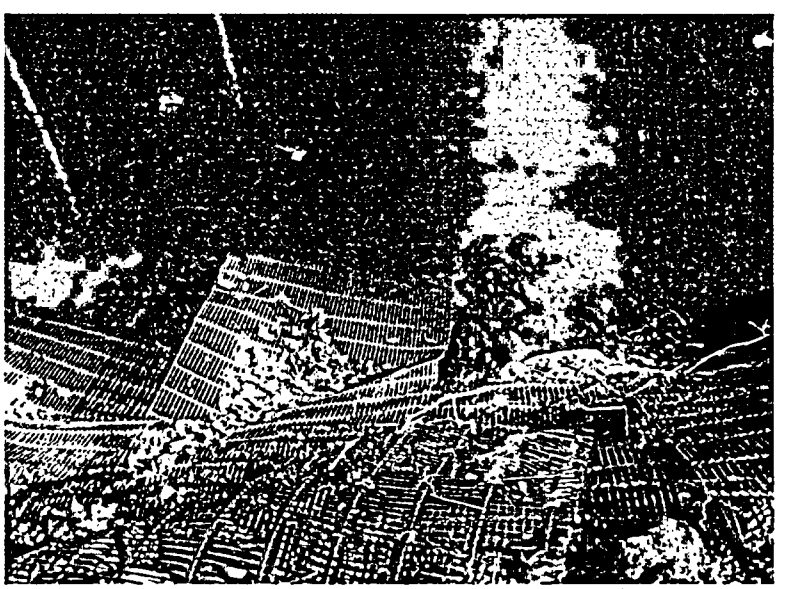


Photograph #4, Previous Bank Stabilization, North End, Slope Erosion and Embedded Geotextile, (note railroad bridge upper left), 10/28/2004.

Approximately 44 feet of bank damage occurred north of the debris deposit and south of the Strabane Avenue Bridge. The area of disturbance surrounds an existing natural gas line, as shown in photograph #5. Witnesses report that a tree hooked and dislodged the gas line during the flood.

Photograph #5, Previous Bank Stabilization, North End, Region of Overtopping Flow, (south is toward the top of the photo), 10/28/2004.

An approximate 22-foot section of the bank south of the gas line was reinforced with geotextile in 2000, and geotextile remains embedded in the slope as shown in photograph #6; however, the rock toe was washed out. The section north of the gas line had an approximate 8-foot x 22-foot portion of the bank, including the rock toe, removed by overtopping flow. This area of missing creek bank can be seen in the lower portion of photograph #5.



Photograph #6, Previous Bank Stabilization, South End, Embedded Geotextile, 10/28/2004.

Area #2, Repairs, South of Debris Deposition

Repair of the region south of the debris deposition will require replacing rock riprap into the void created by soil erosion between layers of geotextile reinforcement to re-establish the slope.

Prior to placing rock, removal of loose vegetation and debris between geotextile layers should be performed. Upper geotextile layers should be folded back while rock is placed on the lower geotextile. When the depth of rock fill reaches the level of the overlying geotextile, the overlying geotextile should be folded down and the next layer of rock placed. This process will continue until the reconstructed rock slope conforms to the lower rock toe and upper reinforced vegetated slope.

Area #2, Repairs, North of Debris Deposition, South of Gas Line

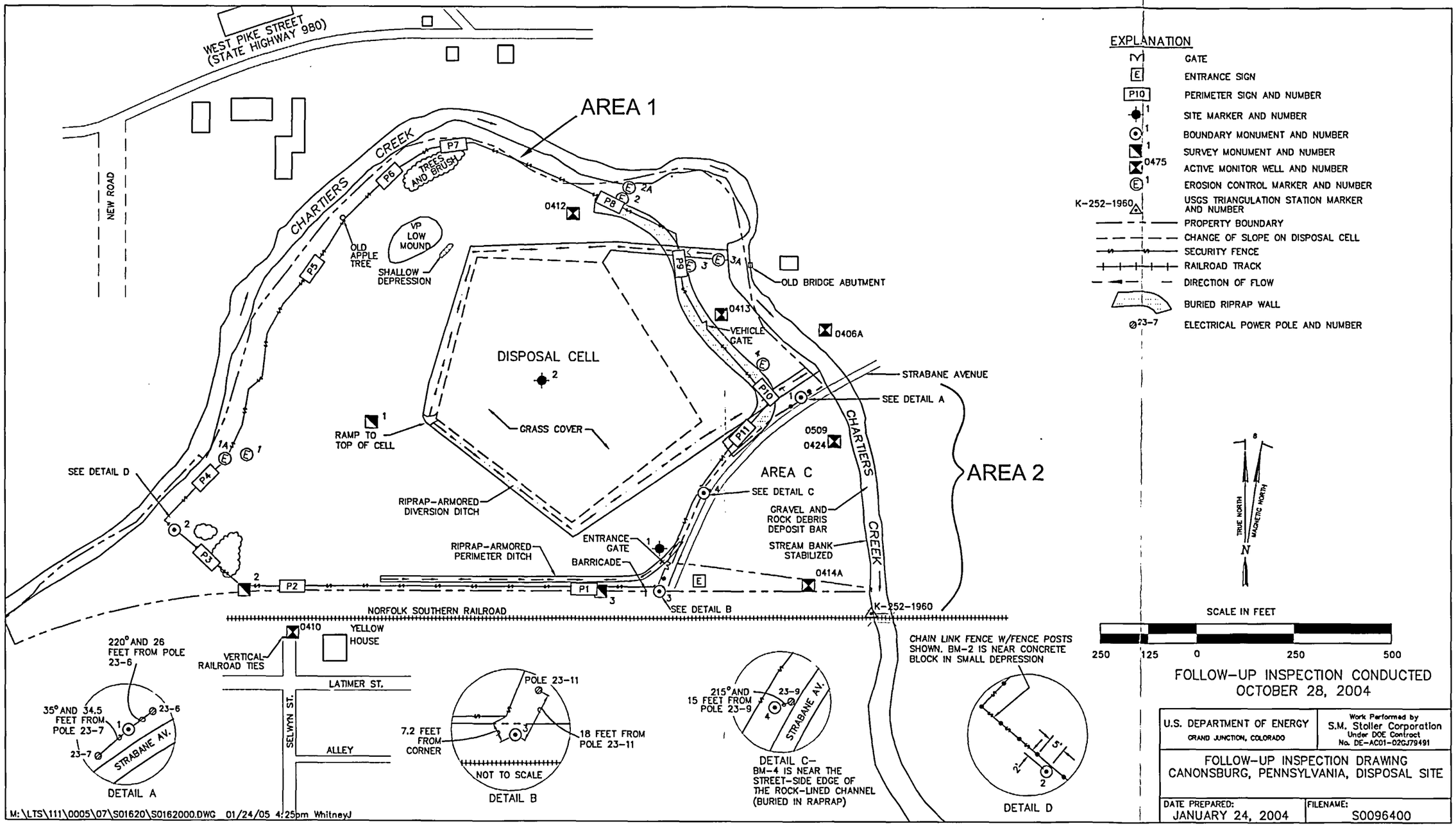
Repair of this area should not begin until the local utility company has relocated the gas line.

Damage to this area is similar to slope damage north of the debris deposition and should be repaired in the same fashion after re-establishment of the toe.

A track-hoe should clean gravels and soils to the bedrock contact beneath the lowest geotextile layer. Spoils should be placed behind the slope crest and allowed to drain. Spoils may be reused as a backfill source filling localized eroded areas along the crest. One layer (or thickness) of riprap should then be placed with the track-hoe in the excavation to form the toe. Toe riprap should have a nominal diameter of 24 to 36 inches.

Area #2, Repairs, North of Debris Deposition, North of Gas Line

Re-establishment of the toe should be performed as discussed above. Pit run should be placed in the void and compacted with the track-hoe bucket. A 24-inch thickness of riprap erosion protection (18" to 24" nominal D_{100}) should then be placed over the entire slope face.



EXPLANATION

- GATE
- E — ENTRANCE SIGN
- P10 — PERIMETER SIGN AND NUMBER
- 1 — SITE MARKER AND NUMBER
- 1 — BOUNDARY MONUMENT AND NUMBER
- 1 — SURVEY MONUMENT AND NUMBER
- 0475 — ACTIVE MONITOR WELL AND NUMBER
- E 1 — EROSION CONTROL MARKER AND NUMBER
- K-252-1960 — USGS TRIANGULATION STATION MARKER AND NUMBER
- PROPERTY BOUNDARY
- CHANGE OF SLOPE ON DISPOSAL CELL
- SECURITY FENCE
- RAILROAD TRACK
- DIRECTION OF FLOW
- BURIED RIPRAP WALL
- ⌀23-7 — ELECTRICAL POWER POLE AND NUMBER

TRUE NORTH
MAGNETIC NORTH
N

SCALE IN FEET

250 125 0 250 500

FOLLOW-UP INSPECTION CONDUCTED
OCTOBER 28, 2004

U.S. DEPARTMENT OF ENERGY GRAND JUNCTION, COLORADO	Work Performed by S.M. Stoller Corporation Under DOE Contract No. DE-AC01-02GJ79491
FOLLOW-UP INSPECTION DRAWING CANONSBURG, PENNSYLVANIA, DISPOSAL SITE	
DATE PREPARED: JANUARY 24, 2004	FILENAME: S0096400