2002 Annual Compliance Report
Naturita, Colorado, Disposal Site

Compliance Summary

The site, inspected on July 9, 2002, was in excellent condition. The standpipe formerly located on the northeast slope of the disposal cell was decommissioned. Revegetation of graded and disturbed areas north of the disposal cell has succeeded and the storm water discharge permit has been closed. Russian knapweed persists at the site and was treated with herbicide. Inspectors found no need for additional maintenance or a follow-up or contingency inspection at this site.

Compliance Requirements

Requirements for the long-term surveillance and maintenance of the Naturita, Colorado, Uranium Mill Tailings Radiation Control Act (UMTRCA) Title I disposal site are specified in the *Long-Term Surveillance Plan for the Upper Burbank Disposal Cell, Uravan, Colorado* (DOE/AL/62350−250, Rev. 1, U.S. Department of Energy [DOE], Albuquerque Operations Office, July 1999) and in procedures established by the DOE Grand Junction Office to comply with requirements of Title 10 *Code of Federal Regulations* Part 40.27 (10 CFR 40.27). These requirements are listed in Table 13–1.

Table 13–1. License Requirements for the Naturita, Colorado, Disposal Site

Requirement	Long-Term Surveillance Plan	This Report
Annual Inspection and Report	Section 3.1	Section 1.0
Follow-up or Contingency Inspections	Section 3.4	Section 2.0
Routine Maintenance and Repairs	Section 4.0	Section 3.0
Ground Water Monitoring	Section 2.6.2	Section 4.0
Corrective Action	Section 5.0	Section 5.0

Compliance Review

1.0 Annual Inspection and Report

The site, west of the former community of Uravan, Colorado, was inspected on July 9, 2002. Results of the inspection are described below. Features mentioned in this report are shown on Figure 13–1. Numbers in the left margin of this report refer to items summarized in the Executive Summary table.

1.1 Specific Site Surveillance Features

Access Road, Fence, Entrance Gates, and Signs—Access to the site entrance gate is gained from Montrose County Road EE22. The graveled county road was in good condition.

A barbed wire stock fence surrounds the site. The entrance gate is a pair of tubular metal gates suspended from galvanized steel gateposts. A chain with a padlock secures the two gates together. Two other metal gates allow access to monitor wells adjacent to the disposal cell on the west. Other than resecuring a fence post, the fence and all gates were in excellent condition.

The site has 25 perimeter signs and one entrance sign. Perimeter signs are on galvanized steel posts approximately 5 feet inside the perimeter fence. All signs were in excellent condition.

Site Markers and Monuments—Two granite site markers identify the Naturita site. Site marker SMK−1 is set just inside and left of the entrance gate, and site marker SMK−2 is located on the disposal cell in the south-central portion of the top slope. Both markers were undisturbed and in good condition.

The site property boundary has 17 corners, which are marked by boundary monuments or survey monuments. Three survey monuments (SM−3, SM−4, and SM−11) are located in place of boundary monuments. Survey monuments were installed during site construction for survey control; boundary monuments were installed after completion of construction. All boundary and survey monuments were undisturbed and in good condition.

Standpipe—In accordance with provisions of the Long-Term Surveillance Plan, the standpipe
13A located on the northeast slope of the disposal cell was decommissioned in June 2002.

Monitor Wells—The ground water monitoring network has five wells. All wells were locked and in excellent condition.

1.2 Transects

To ensure a thorough and efficient inspection, the site was divided into five areas referred to as transects: (1) the riprap-covered top slope and side slopes of the disposal cell; (2) the riprap-covered toe drains and toe drain outlets; (3) the riprap-covered interceptor trench; (4) the reclaimed areas surrounding the disposal cell (including the site perimeter); and (5) the outlying area.

Top of Disposal Cell and Side Slopes—Rock covers the 2-acre top of the disposal cell and the approximate 8 acres of side slopes. The rock is rounded, with larger rock on the side slopes than on the top. The rock showed no signs of degradation and no vegetation was evident. Inspectors saw no evidence of subsidence, differential settlement, slumping, or other modifying process.

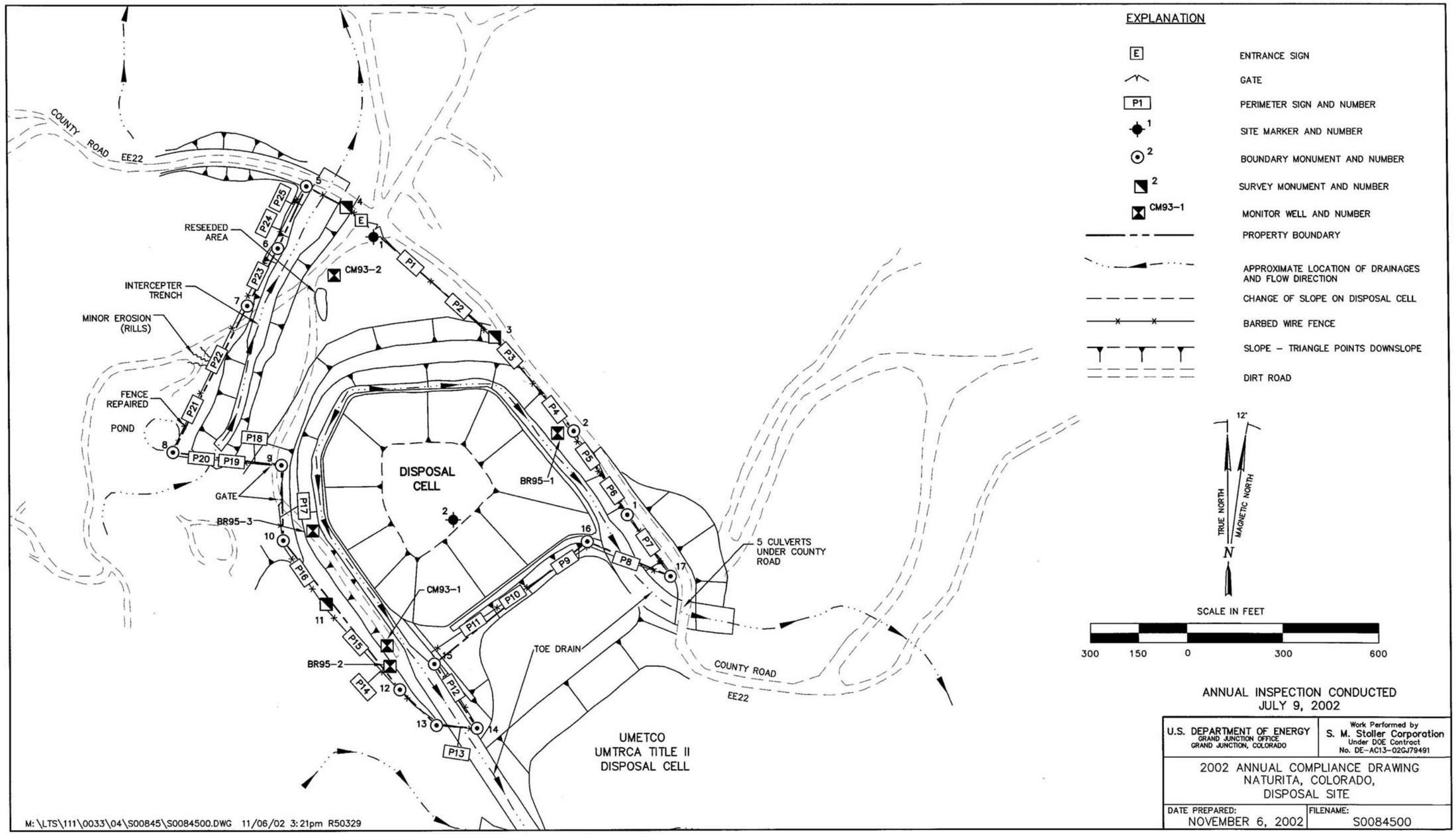

Figure 13–1. 2002 Annual Compliance Drawing for the Naturita, Colorado, Disposal Site

Toe Drains and Outlets—Two riprap-filled toe drains collect water from the cell side slopes and divert it to the southeast. The toe drain on the western side of the cell exits through a channel quarried through the wall of the Burbank Pit and into a deep canyon leading to the San Miguel River. The eastern toe drain exits through the adjacent UMETCO UMTRCA Title II disposal site and crosses beneath County Road EE22 through five culverts. Both toe drains were in good condition.

13B The process is underway to make the U.S. Bureau of Land Management right-of-way permits for these toe drains perpetual; currently, the permits are set to expire in 2004.

Interceptor Trench—There is a rock-armored interceptor trench northwest of the disposal cell. This trench diverts storm water runoff from a large up-slope catchment area off site to the north. Water leaving the interceptor trench flows across County Road EE22. The trench was in excellent condition, but because there are no culverts under the road, the county road may be susceptible to erosion.

Reclaimed Areas—The disturbed area north of the disposal cell and south of the interceptor channel was seeded at construction completion. Grass and shrub density has increased, but much
13C of the cover still consists of annual weeds, primarily kochia. The cover percentage conforms to specifications for closing the storm water discharge permit, which addresses restored areas on the site and on the Club Mesa borrow area to the north. The storm water discharge permit was closed with regulator concurrence.

Inspectors found Russian knapweed along the east side of the site, which is a state-listed noxious
13D species that DOE, as landowner, must control. Although the knapweed was sprayed with herbicide in September 2001, knapweed was identified during the 2002 inspection in many of the same areas in which it grew in 2001. Additional spraying was conducted in 2002, and knapweed will continue to be monitored.

Outlying Area—The site boundary and the area within 0.25 mile of the site boundary have been highly disturbed by mining, quarrying, and road building activities. UMETCO is continuing to work on their tailings disposal cell across County Road EE22 east of the site. UMETCO's completed Title II disposal cell abuts the UMTRCA Title I disposal cell on the southeast.

During site construction, cover materials were obtained from the Club Mesa borrow area immediately northwest of the disposal site. Minor erosion on the Club Mesa borrow area, resulting from the natural processes of reestablishing a drainage swale, has stabilized. Revegetation of the borrow area conforms to the state requirements and, as mentioned previously, the storm water discharge permit for this site has been closed out.

No development or disturbance was observed within 0.25 mile of the site boundary that would negatively affect the disposal site.

2.0 Follow-Up or Contingency Inspections

No follow-up or contingency inspections were required in 2002.

3.0 Routine Maintenance and Repairs

Minor fence repair was conducted during the 2002 inspection. Herbicide was applied to identified areas of Russian knapweed after the 2002 inspection was completed. No other maintenance was required in 2002.

4.0 Ground Water Monitoring

Monitor Wells—DOE monitors ground water at the site to demonstrate the initial performance of the disposal cell. The compliance strategy is to meet maximum concentration limits (MCLs) established in Table 1 to Subpart A of 40 CFR 192 or background levels in a point of compliance well (CM93−2) in the uppermost aquifer (Wingate Formation) downgradient from the disposal cell. The Wingate Formation lies approximately 600 feet beneath the disposal cell and is hydrologically isolated from the surface by unsaturated sandstone and relatively impermeable shale layers of the Salt Wash Member of the Morrison Formation and the Summerville Formation, respectively.

Best management practice monitoring will be performed in three shallower monitor wells (BR95−1, BR95−2, and BR95−3), completed at the contact between the Salt Wash Member and the Summerville Formation, to provide early warning of possible migration of contaminants into this zone. If contamination suspected to be related to the disposal cell is observed at this horizon, DOE will sample two additional wells (CM93−1 and CM93−2) screened in the uppermost aquifer. Monitor wells are to be sampled every other year after licensing of the site (1999). The wells were sampled in 2002. The need for continued monitoring will be evaluated in 2004. Indicator analytes are arsenic, molybdenum, and uranium.

13E

Concentrations of arsenic in ground water in all three monitor wells were below 0.005 milligrams per liter (mg/L) and well below the MCL of 0.05 mg/L. Concentrations of molybdenum in ground water were below 0.02 mg/L (MCL is 0.1 mg/L).

Uranium concentrations in ground water (Figure 13−2) ranged from 0.022 to 0.117 mg/L (MCL is 0.044 mg/L). Concentrations have remained relatively stable in wells BR95−2 and BR95−3 at approximately 0.040 and 0.020 mg/L, respectively, and were at 0.117 mg/L in BR95−1 (BR95−1 has been sampled only one time because another dry well was mistaken for the actual location in the past). Concentrations of uranium in this range are not unexpected at the contact between the Salt Wash Member and the Summerville Formation. Uranium mineralization is present in the Salt Wash Member. An indication of the intrinsic mineralization of this ground water is the high level of uranium (2.59 mg/L in April 2001) in seep water approximately 0.5 mile north of the disposal cell. The seep is cross gradient from the disposal cell and represents discharge from the Salt Wash/Summerville contact.

Water levels have been measured in these wells since 1997 and remain relatively stable.

Monitor wells CM93−1 and CM93−2 in the uppermost aquifer were sampled in May 1997 and concentrations of all indicator analytes were at or near detection limits (i.e., below respective MCLs).

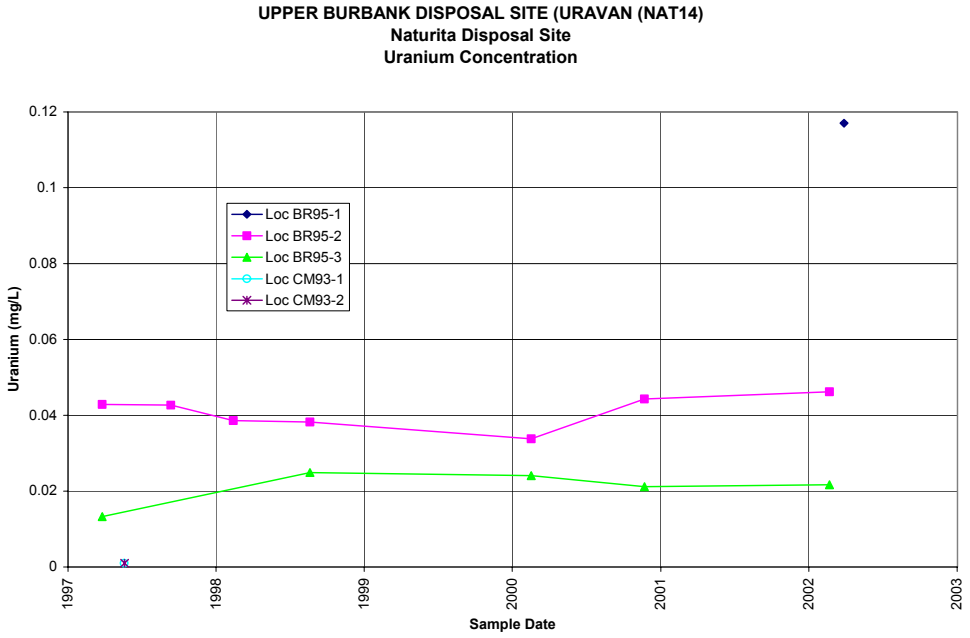

Figure 13−2. Time-Concentration Plots of Uranium in Ground Water at the Naturita, Colorado, Disposal Site

Standpipe – The Long-Term Surveillance Plan stipulates that DOE will monitor water levels in the standpipe in the northeast part of the disposal cell to ensure that water is not accumulating in the footprint of the cell. Water levels have been measured in the standpipe since July 1998 and have steadily decreased from a maximum depth of 12 inches in August 1998 to 5 inches in February 2002. The Long-Term Surveillance Plan states that if the water level in the standpipe remains essentially static at 12 inches or declines, monitoring will be discontinued and the standpipe decommissioned. The criterion has been met and the U.S. Nuclear Regulatory Commission and the Colorado Department of Public Health and Environment were notified in April 2002 of DOE's intent to decommission the standpipe. The standpipe was decommissioned in June 2002.

5.0 Corrective Action

Corrective action is action taken to correct out-of-compliance or hazardous conditions that create a potential health and safety problem or that may affect the integrity of the disposal cell or compliance with 40 CFR 192.

No corrective action was required in 2002.

End of current section