

Executive Summary

On January 21, 2004, a Remedial Investigation and Feasibility Study (2004 RI/FS) was prepared by New Horizons Environmental Consultants Inc. (New Horizons) on portions of the former Colorado School of Mines Research Institute (CSMRI) Site located in Golden, Colorado (the Site). The 2004 RI/FS determined the nature and extent of contamination, evaluated alternative remedies, and identified a preferred alternative remedial plan of offsite disposal. After public comment, a Record of Decision was issued in 2004 selecting the preferred remedy of offsite disposal at two separate landfills: one in Idaho and one in Colorado.

Colorado School of Mines (School) then hired New Horizons in 2004 to perform the selected remedy. During New Horizons' field excavation work, New Horizons determined that the actual nature and extent of contamination was significantly greater than that estimated in the 2004 RI/FS. Although New Horizons knew that the nature and extent was significantly greater, it did not know the full extent of the contamination. The School then halted the field work and hired Stoller to investigate the nature and extent of contamination and re-evaluated the previously-selected remedy. Stoller performed additional investigative work in 2005-2007.

This document, which is referred to as the Revised RI/FS, revises the 2004 RI/FS. It provides the nature and extent of contamination, re-evaluates alternative remedies, and proposes an offsite disposal remedy that differs from the remedy selected in 2004. This document describes the procedures and results of the Revised RI/FS. The 2004 RI/FS contains the procedures and results of that investigation conducted in 2003. The Revised RI/FS incorporates portions of the 2004 RI/FS, replaces some portions, and supplements other portions. All figures presented in this document are based on results from the revised Site characterization unless otherwise noted on the figure.

The Site was used for mining and metallurgical research for about 70 years. The investigation phase of the Revised RI/FS consisted of many tasks, including an initial soil segregation, an initial gamma survey, the collection and onsite analysis of over 1,200 soil samples that guided the segregation of approximately 13,000 cubic yards of soil, the excavation and sampling of 11 confirmatory test pits, and a final gamma survey. The investigation included identifying and segregating soils with elevated radionuclide activities, primarily radium, thorium, and uranium, in the vicinity of the former buildings and some nearby areas. Areas with elevated metals concentrations, primarily arsenic and lead, and small areas with mercury, vanadium, and molybdenum also were identified and segregated.

The data gathered during both remedial investigations were used to evaluate the risks and hazards associated with radionuclides and metals found in the soils. The baseline risk assessment indicated Site conditions were not protective of human health and the environment.

Using the information gathered during both remedial investigations, several possible remedial technologies were identified. After a screening process, ten remedial alternatives (in addition to the no-further-action alternative) were identified as part of the feasibility study phase. The alternatives included leaving material on the Site and using stabilization methods (e.g., capping, solidification, and/or disposal cells) to immobilize the material, a combination of offsite disposal

and stabilization, and complete offsite disposal. The groundwater pathway is a major driver of the Site alternatives because of the proximity of Clear Creek and the apparent increase in uranium concentrations in groundwater monitoring wells.

This Revised RI/FS identifies complete offsite disposal with an environmental covenant as the remedial action plan most appropriate for the Site. Offsite disposal best meets the remedy selection criteria of the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). Preliminary community outreach efforts have identified a preference for the offsite disposal alternative. An environmental covenant is included in the selected remedy to meet Applicable or Relevant and Appropriate Requirements (ARARs) and has the ancillary benefit of addressing the high background level of radium 226 (Ra-226) in this area (as detailed in Section 4), as a best management practice to protect future site residents from radon emanation resulting from Ra-226 site concentrations. The final alternative selection will be made following the public comment period and review by the Colorado Department of Public Health and Environment (CDPHE).

1. Introduction

The Revised RI/FS was conducted on portions of the Site. Numerous industrial mineral research projects involving materials that contained natural radionuclides and metals were undertaken on the Site from 1912 until about 1987. Seventeen buildings once occupied the six-acre Site that is located on the south bank of Clear Creek near the campus of the School. CDPHE has issued a Radioactive Materials License to CSMRI for the Site (License Number 617-01). The License authorizes storage of “naturally occurring, source, and byproduct radionuclides.”

All of the above-ground structures on the Site have been removed, including concrete slabs, asphalt-paved areas, and subsurface footers for some of the buildings. An 8-foot chain link fence encircles the Site.

Environmental assessments completed on the CSMRI Site have shown that material with levels of radionuclides and/or metals above background were present at the Site. Where these materials are present, they are part of naturally occurring decay chains and minerals.

In 2002, the School contracted with New Horizons to provide surface and subsurface sampling and analysis of the Site and to generate a RI/FS report. On January 21, 2004, New Horizons issued the 2004 RI/FS, which identified offsite disposal of the contaminated soils as the preferred remedy. With respect to the nature and extent of contamination, the 2004 RI/FS estimated 500 cubic yards of soil averaging greater than 3 pCi/g Ra-226 above background would be excavated. This soil was designated to go to the U.S Ecology RCRA landfill in Idaho. In addition, the 2004 RI/FS estimated 9,500 cubic yards of soil averaging above background but no more than 3 pCi/g Ra-226 above background would also be excavated. This greater volume of soil was designated to be disposed of at the Foothills RCRA solid waste landfill in Jefferson County, Colorado. The cost of shipping and disposing of the contaminated soils in Idaho was much greater than the cost of shipping and disposing of the soils at the Foothills Landfill. The 3 pCi/g Ra-226 threshold that distinguished between the two types of soil was determined by a CDPHE requirement.

After public comment and CDPHE review, a Record of Decision (ROD) was produced in March 2004 for the Site. The School then hired New Horizons to perform the offsite remedy. In April and May 2004, New Horizons began the field work to implement the offsite remedy. New Horizons' work plan first targeted for excavation the 500 yards of soil to go to Idaho. After a few weeks in the field, New Horizons had excavated approximately 1,800 cubic yards of such soil. Excavation had occurred in areas that New Horizons did not expect to locate any contaminated soils. In addition, the nature of some of these soils exhibited concentrations greater than that estimated by New Horizons. In May 2004, New Horizons determined that it no longer knew what the maximum nature and extent of contamination was going to be. It believed that a minimum of 3,000 cubic yards would go to the Idaho landfill under the New Horizons work plan if New Horizons were to continue to excavate such soils. Under that scenario, the cost of soils going to Idaho would have represented at least a \$1.5 million cost increase for those soils. At that point, the School halted the remedial work. CDPHE also decided that additional investigation was necessary to determine the nature and extent of contamination.

The School then hired S.M. Stoller Corporation (Stoller) to perform further Remedial Investigation activities to evaluate the Site, using a combination of existing data and newly collected data. The nature and extent of impacted material at the Site was determined using tentative cleanup goals to guide soil segregation. The results of this investigation are included in this Revised RI/FS, which will be submitted to CDPHE for approval prior to selecting and implementing a remedy for the Site.

1.1 Regulatory Initiative

This document combines the 2004 RI/FS with the current RI/FS work for portions of the Site (Figure 1-1). The area of investigation includes portions of the Fenced Area surrounding the former research buildings and the Clay Pits area located to the south of the Fenced Area. This Revised RI/FS is being prepared as part of the remedial action conducted by the School in accordance with the requirements of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended (CERCLA), and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). This Revised RI/FS proposes a remedy for the investigation area and explains the factual and legal basis for selecting the final remedy for the Site.

1.2 Purpose of Report

The purpose of this report is to:

- Describe the remedial investigations and current nature and extent of potentially affected surface and subsurface materials remaining at the Site (Sections 3 and 4),
- Quantify the current and future risk to human health and the environment (Sections 5 and 6) resulting from these materials,
- Identify and evaluate remedial action alternatives that are feasible for application at the Site (Sections 7 and 8), and
- Propose a remedial action alternative for implementation (Section 9).

Data collected during the recent RI, in conjunction with existing data from the prior RI, were used to accomplish each of these objectives.

1.3 Overview of Activities since 2004 RI/FS

The 2004 *Remedial Investigation/Feasibility Study and Proposed Plan* was issued on January 21, 2004. The 2004 Proposed Plan recommended Alternative 5, the removal and offsite disposal of contaminated soils. The School then received and considered oral and written public comments on the 2004 Proposed Plan. The public comments supported Alternative 5 as the remedial plan for the Site. The School selected Alternative 5 as the final remedial action for the Site and documented the remedy selection in a ROD, which was signed on March 31, 2004.

New Horizons was selected to identify, excavate, and dispose of contaminated soils at the Site. Field work began in April 2004. During the 2004 remedial action, six areas were excavated and a seventh area was partially excavated. As explained above, by May 2004, it was apparent that excavated soil volumes and concentrations and projected costs exceeded previously estimated volumes, concentrations, and costs. Work was halted and the Site stabilized. Approximately

1,870 cubic yards of soil had been excavated, bagged, and stored on the Site by New Horizons during the 2004 remediation work. This bagged soil had been initially slated for disposal at the U.S. Ecology RCRA facility in Idaho. The contract with New Horizons was terminated in the fall of 2004.

In December 2004, Stoller was retained by the School to collect representative soil samples from a random subset of the 455 super-sack containers staged at the Site to generate a legitimate data set to evaluate potential disposal options of the containerized material. The soil in the bags averaged 12.6 pCi/g Ra-226. After considerable negotiations between the School and CDPHE, CDPHE agreed to consider a risk assessment that demonstrated that the Foothills Landfill in Jefferson County could safely manage the bagged soils even though they contained concentrations greater than 3 pCi/g Ra-226 above background, which was CDPHE's previous threshold for waste acceptance into the solid waste landfill. The analytical and risk assessment results were submitted to CDPHE for review in the April 5, 2005 report, *Dose Assessment for the Emplacement of the CSMRI Site Containerized and Remaining Subsurface Soil into a RCRA Subtitle D Solid Waste Landfill*. After review of the dose assessment report, the CDPHE approved shipment of the bagged soils to the Foothills solid waste landfill in a letter dated August 26, 2005. At CDPHE's request, the dose assessment included a hypothetical scenario of 30,000 cubic yards of soil similar to the soil contained in the bags. This scenario anticipated possible further soil excavation at the Site and prevented the need for having to perform a second dose assessment if soils were excavated that were similar to the soils in the bags. CDPHE also approve this hypothetical scenario.

In May 2005, the School contracted Stoller to examine further Site investigation alternatives to move the project toward completion while maintaining the CERCLA framework.

In October 2005, Stoller obtained CDPHE approval and a Colorado Department of Transportation (CDOT) permit (Permit Request number 605167) to transport the bagged soil offsite via an access lane on Colorado Highway 6 to BFI Foothills Landfill. Physical construction of this access was completed by New Horizons in 2004 under CDOT Access Permit No. 603100.

All bagged soils from the Site were shipped to BFI Foothills Landfill during the period of December 12 through 15, 2005, in accordance with the approved *CSMRI Creekside Site Contaminated Soil Disposal Work Plan* (the Materials Transportation Plan is Appendix A of the work plan) (Stoller 2005c).¹ A total of 112 truck loads containing bagged soil plus two trucks containing other debris from the Site were shipped.

In September 2005, Stoller prepared a Background Evaluation Report for the Site. This report summarized and assessed the results of three previous background studies, two by URS in 2000 and 2002, and one by New Horizons in 2004 (included in the 2004 RI/FS), which attempted to establish background concentrations for metals and radioisotopes. CDPHE reviewed the Stoller background report and indicated inadequate soil analytical data existed to justify increasing the proposed cleanup standards for the Site. However, the CDPHE did agree to increasing the

¹ A small amount of bagged soils had been shipped by New Horizons to the U.S. Ecology facility in Idaho during the April and May 2004 field work.

background level of arsenic to 38 parts per million (ppm), resulting in a tentative DCGL of 39 ppm. Additionally, the CDPHE agreed to use a total mercury standard to guide characterization with some speciated confirmatory data in support. The School determined that pursuing further background studies at that time in response to CDPHE's concerns would not be cost effective and directed Stoller to proceed using tentative cleanup goals approved by CDPHE. However, the School and CDPHE agreed that the School could later demonstrate to CDPHE alternative background conditions for different portions of the Site during field excavation work upon field observations and further data. This was a more cost-effective strategy.

Stoller assisted with designing a strategy to meet the goals of the School while also collecting the necessary site data for nature and extent determination. Multiple meetings with the CDPHE led to the approved *CSMRI Creekside Site Final Site Characterization Work Plan*, dated May 12, 2006. This work plan was implemented by Stoller beginning in June 2006. The investigative method selected was to excavate the impacted soil and stockpile it onsite to determine the nature and extent of contamination. This excavation method is analogous to the method used by the U.S. Environmental Protection Agency (EPA) to address the former settling pond at the Site. EPA had excavated the former settling pond down to cleanup goals and then stockpiled the soil at another location on the Site for further characterization work and disposal purposes. The New Horizons' baseline risk assessment in the 2004 RI/FS had already demonstrated that some proactive remedial action was necessary at the Site for the remaining contaminated soils. Because New Horizons was discovering during remedy implementation volumes and concentrations greater than that used in the baseline risk assessment it was clear that no action was not going to be a viable alternative. The excavation and segregation investigative method used by Stoller resulted in contaminated soil above the tentative cleanup goals being segregated in two soil stockpiles onsite, with the remainder of the main site (upper terrace) meeting the tentative Site cleanup goals. The lower terrace, including the west end of the flood plain but excluding the location of the former settling pond that was closed by EPA, has been characterized, and a small volume of contaminated soils exceeding the tentative Site cleanup goals will be excavated to the onsite stockpiles in spring 2007.

The results of Stoller's soil excavation and segregation investigation further demonstrated the reasonableness and necessity of halting the 2004 remedial work by New Horizons. Stockpile B consists of approximately 12,500 cubic yards with an average of 13.55 pCi/g Ra-226. Under the 2004 R/IFS and 2004 ROD, all of this soil, plus the 1,800 cubic yards of bagged soil, would have been shipped and disposed of at the U.S. Ecology facility in Idaho at a cost of \$9,689,823. In addition, the excavation and segregation investigation created approximately 200 cubic yards in Stockpile A, which averages 84.75 pCi/g Ra-226. This material would have cost \$135,522 to dispose of in Idaho under the 2004 RI/FS and 2004 ROD. New Horizons had estimated the cost of implementing Alternative B to be only \$1,540,712.86. Under the 2004 RI/FS and 2004 ROD, none of the contaminated soil would have been shipped and disposed of at the Foothills Landfill, even though 9,500 yards had been estimated to go to the Foothills Landfill. Thus, if New Horizons had continued its field work, there would have been a cost overrun of \$8,284,632, or 538 percent above the expected costs under New Horizons' contract to implement the remedy. In addition, the volumes that would have been excavated by New Horizons would have been significantly greater than that estimated by New Horizons in the 2004 RI/FS because the arsenic background level was changed for the Revised RI/FS to reflect an accurate arsenic background

level. While the 2006 investigation resulted in a similar volume of impacted soil as that estimated in the 2004 RI/FS, the field methods employed in the 2004 remedial action would have yielded a much larger volume of impacted material subject to disposal.

1.4 Site Description

The Site is located in Jefferson County, Colorado, on the south side of Clear Creek, east of U.S. Highway 6, in the northeast quarter of the northwest quarter of Section 33, Township 3 South, Range 70 West as shown in Figure 1-1. The main entrance to the Site is located about 475 feet northwest of the intersection of Birch and 12th Streets in Golden, Colorado. A chain-link fence restricts access to the Site, except for a small area located south of 12th Street known as the Clay Pits Area. A settling pond was previously located within the perimeter fence but the pond was cleaned up and closed by the EPA in 1997 as part of an Emergency Removal Action under CERCLA and is not part of the School's remedial action.

The Site (excluding the Clay Pits Area and the former settling pond area) covers an area of about six acres and is currently defined by the shaded area shown in Figure 1-2. The Clay Pits Area also is shown in Figure 1-2. In accordance with CERCLA and the NCP, 40 Code of Federal Regulations (CFR) Parts 300.5 and 300.400(e), the term "on-site" refers to the areal extent of contamination and all suitable areas in proximity to the contamination." Consequently, the Site boundary may be modified or expanded to address the needs of the remedial action alternatives.

The CSMRI Site has historically included the soil stockpile (material removed from the settling pond) formerly located near the School's softball field, the Fenced Area (including the settling pond), and the Clay Pits Area located south of the intersection of Birch and 12th Streets. For use in this document only, the Site is defined as the Fenced Area (excluding the settling pond) and the Clay Pits Area.

1.5 Site History

Numerous mineral research projects (some of which involved the mineral extraction and beneficiation of materials that contained levels of radionuclides above background) were conducted at the Site from 1912 until approximately 1987. The research projects utilized 17 buildings on the Site that were subsequently removed in the mid-1990s. An impoundment (settling pond) also was situated between the building complex and Clear Creek to store wastewater generated in the laboratories and research facilities. Wastewater discharged from the buildings was transferred to the settling pond through a system of sumps and floor drains in the buildings.

On January 25, 1992, a water main owned by the City of Golden broke on the Site and began discharging a large volume of water into the settling pond. EPA's Emergency Response Branch responded in February 1992 and performed the following activities to stabilize conditions at the Site:

- excavation of the contaminated sediments and soil,
- stockpiling of the material (the Stockpile),
- decontamination of building drains,
- demolition and removal of several buildings,

- consolidation of existing drums and disposal of compressed gas cylinders,
- sampling of sediments and water, and
- closure of the settling pond.

EPA subsequently contacted many of the entities that had sent materials to the Site and requested that the Stockpile be removed from the Site. This culminated in the issuance of a Unilateral Administrative Order (UAO) on December 22, 1994 to certain entities (the respondents). Among other things, the UAO required the respondents to develop and evaluate disposal options for the Stockpile (approximately 20,000 cubic yards) and ultimately implement the selected disposal alternative. Some of the respondents prepared a Removal Action Options Analysis (RAOA) report that was issued on June 12, 1995. The RAOA report identified and evaluated various disposal options for the Stockpile. The Colorado School of Mines and the State of Colorado were the only respondents that subsequently implemented the preferred disposal option. The EPA removal action was completed in 1997.

The School hired AWS Remediation to remove the remaining research buildings from the Site in the mid-1990s. Following demolition of the buildings, the existing pits and basements were backfilled to grade; building foundations and concrete footers were left in-place.

A Characterization Survey Work Plan (CSWP) was prepared by URS Corporation (URS) on July 23, 2001. The purpose of the CSWP was to guide field investigation activities to supplement existing data and evaluate the risks associated with the release of residual metals and radioactive materials found in soils within the Fenced Area and the Clay Pits Area. Working in accordance with the CSWP, URS completed the characterization of the concrete and asphalt slabs and issued two draft final reports on February 11, 2002 and May 18, 2002, respectively.

The CSWP identified demolition of the remaining concrete and asphalt materials as an integral part of the Site characterization process. Consequently, in April 2002, the School hired New Horizons Environmental Consultants, Inc. (New Horizons) to demolish the remaining concrete and asphalt slabs and to characterize surface and subsurface soils on the Site. New Horizons prepared a comprehensive set of work plans that guided the characterization activities that were conducted at the Site.

During November and December 2002, all remaining concrete and asphalt were excavated and either transported as demolition debris to BFI's Foothills Landfill in Golden, Colorado (a permitted Subtitle D solid waste facility) or transported to Recycled Materials, Inc.'s plant in Arvada, Colorado for recycling. Detailed documentation regarding the removal of the concrete and asphalt slabs is provided in New Horizons' April 11, 2003 report entitled *Concrete and Asphalt Removal and Disposal*.

During December 2002 and January 2003, New Horizons collected surface and subsurface soil samples, which were analyzed for metals and radionuclides. Quarterly groundwater samples were collected for four quarters beginning in February 2003. The results of the New Horizons' Site investigation activities were presented in the *Remedial Investigation/Feasibility Study and Proposed Plan* dated January 21, 2004.

1.6 Clay Pits Area History

In the late 1800s, clay was mined from the Clay Pits located west of South Table Mountain immediately south of Clear Creek in Golden, Colorado. Figure 1-2 shows the location of the Clay Pits. The pits were a series of open trenches that extended from Clear Creek approximately one mile south, almost to the current location of the Jefferson County Courthouse. The clay was mined from between the near vertical sandstone walls of where the Laramie Formation outcrops against the front of the Rocky Mountains. In addition to the clay, coal was also mined from the surface outcrop of the Laramie Formation.

By the mid-1900s, the pits were depleted of clay and remained as opened trenches. The pits were soon backfilled with trash and debris, including flood material debris from the 1965 flood of the South Platte River that flooded a significant portion of the lower downtown Denver area (Havelick, personal communication 2006). In May 1973, sediment from the onsite setting pond located on the CSMRI Site was placed in one of the open trenches of the Clay Pits. Over the course of six days, the sludge was buried at an approximate depth of 15 to 20 feet and then covered with crushed ore and earth. This relatively small area, in the context of the entire Clay Pits, is referred to as the Clay Pits Area.

In 1977, the Clay Pits Area where materials dredged from the CSMRI pond had been placed was surveyed by Louis E. Bolis. Mr. Bolis also provided a stamped drawing (Bolis Drawing) of the results of the survey, "Location of Waste Dump, CSM Research Institute." Correspondence from John Schmerber of CSMRI to Larry Doerr of CDPHE in January 1985 states that approximately 500 cubic yards of dredged pond sediments were buried prior to 1972 in the clay pits located just south of the main entrance to CSMRI and that the burial was conducted between vertical sandstone walls and well above the existing water table. The correspondence goes on to say that... "the activity of the sludge was never determined but it is assumed to be at or near background levels. This statement is supported through previous correspondence submitted to [CDPHE] by Colorado School of Mines. Further, numerous surveys conducted by your department [CDPHE] have not offered any evidence to the contrary."

The School had previously retained New Horizons and URS to investigate the Clay Pits Area. In 1998, New Horizons prepared the *Conceptual Subsurface Sampling & Analysis Plan, CSMRI Site*. URS implemented the New Horizons' plan in early 1999 with the drilling of two boreholes. The URS report, *Analytical Results Report, Colorado School of Mines Research Institute Site*, apparently, based on additional information located during file research, did not look for the sediments in the correct location.

Additional study of the Clay Pits Area was conducted by Stoller in 2007 and is summarized in Section 4 of this Revised RI/FS.

1.7 Previous Investigations

A number of historical investigations have been completed at both the Fenced Area and the Clay Pits Area. Results from these investigations are included in the following reports:

- Surface Gamma Ray Scanner Survey, U.S. Environmental Protection Agency, 1982
- CSMRI Environmental Assessment, Jacobs Engineering Group Inc., October 1987

- Claypits Report to CDPHE, Robert MacPherson, October 20, 1988
- Preliminary Assessment of Radiological Risks at CSMRI, Creekside, L. Hersloff, Radiant Energy Management, September 1989
- Tailings Pond, CSMRI, Creekside Sampling Report, Industrial Compliance Inc., October 1989
- Preliminary Assessment of the Potential for Water-Borne Migration of Contaminants in the Claypits, J. Kunkel, Advanced Science, October 20, 1989
- CSM Environmental Sampling & Analysis Program: Claypits Site & CSMRI Facility, James L. Grant & Associates, August 9, 1990
- Characterization Plan for Claypits & CSMRI Creekside and Table Mountain Research Center Sites, James L. Grant & Associates, March 22, 1991
- Preliminary Remedial Alternative Evaluation for the CSM Creekside Stockpile, SR & K, August 25, 1994
- Removal Action Options Analysis (RAOA), Multiple authors, June 12, 1995 (3 vols.)
- Background Characterization Report, prepared for Colorado School of Mines Environmental Health and Safety, prepared by URS Greiner Woodward Clyde International-Americas, Inc., July 7, 2000
- Colorado School of Mines Research Institute Supplementary Background Characterization draft final report, prepared by URS Corporation, January 28, 2002
- Concrete and Asphalt Characterization Report, URS Corporation, May 18, 2002
- Concrete and Asphalt Removal and Disposal, New Horizons Environmental Consultants, Inc., April 11, 2003
- CSMRI Characterization Summary, New Horizons Environmental Consultants, Inc., August 21, 2003
- Remedial Investigation / Feasibility Study and Proposed Plan, CSMRI Site, New Horizons Environmental Consultants, Inc., January 21, 2004

1.8 Report Organization

This Revised RI/FS report includes the main text, tables, figures, and appendices. Section 1 describes the regulatory setting and Site history. Section 2 broadly portrays the physical characteristics of the Site. Section 3 describes Site investigations pertinent to the RI. Section 4 describes the nature and extent of affected materials. Section 5 describes contaminant fate and transport, and Section 6 assesses the baseline risk to human health and the environment. Section 7 develops and compares the remedial alternatives, and Section 8 presents a detailed analysis of the alternatives. Section 9 describes the selected remedy and proposed plan for Site cleanup completion. The references are presented in Section 10. All figures in this document result from the 2006 investigation except as otherwise noted on the figure.

1.9 Schedule

Depending on the selected alternative, the remedial action is expected to take between four to eight months to complete. Estimated schedules for each alternative are located in Section 8.

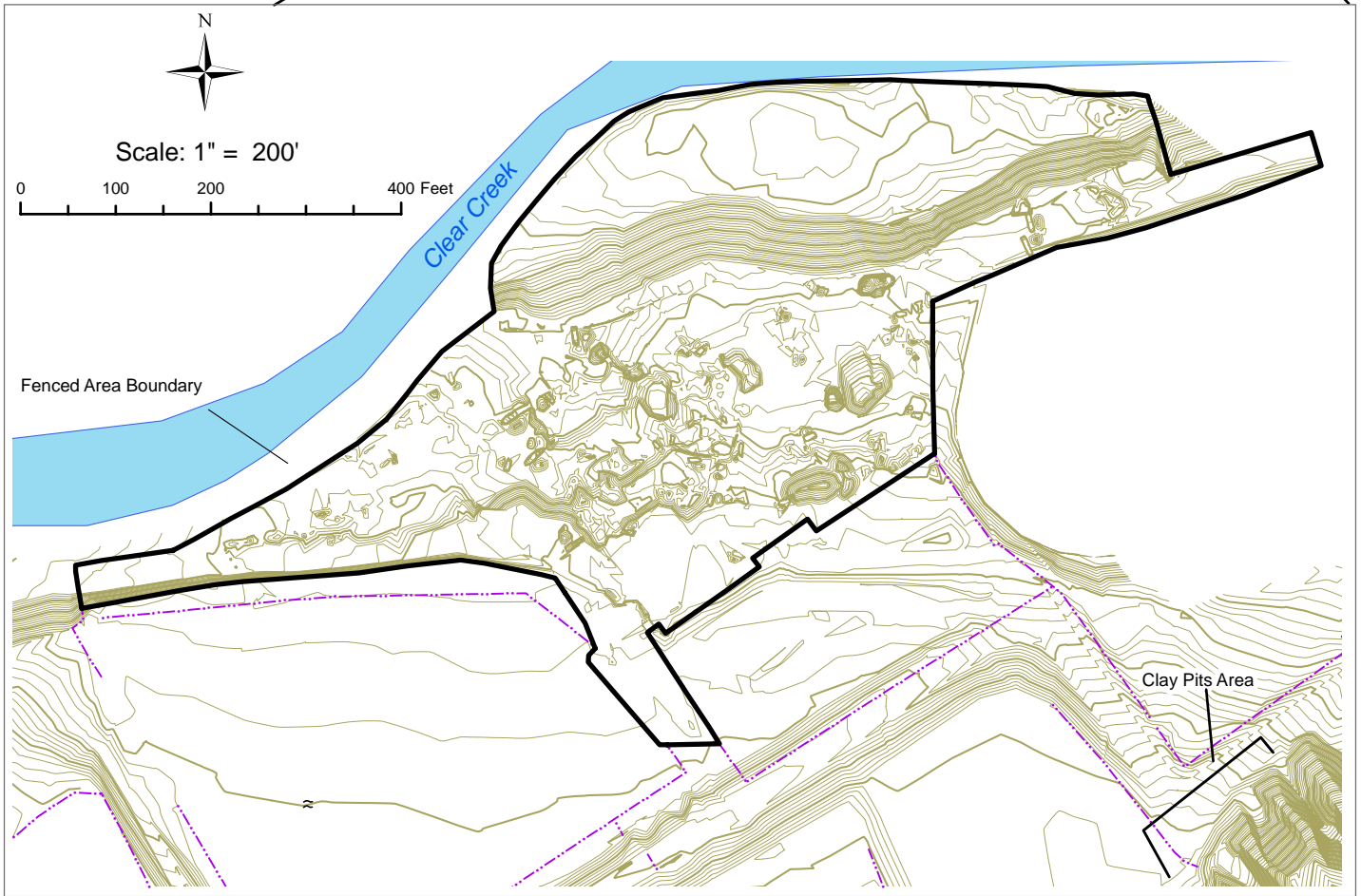
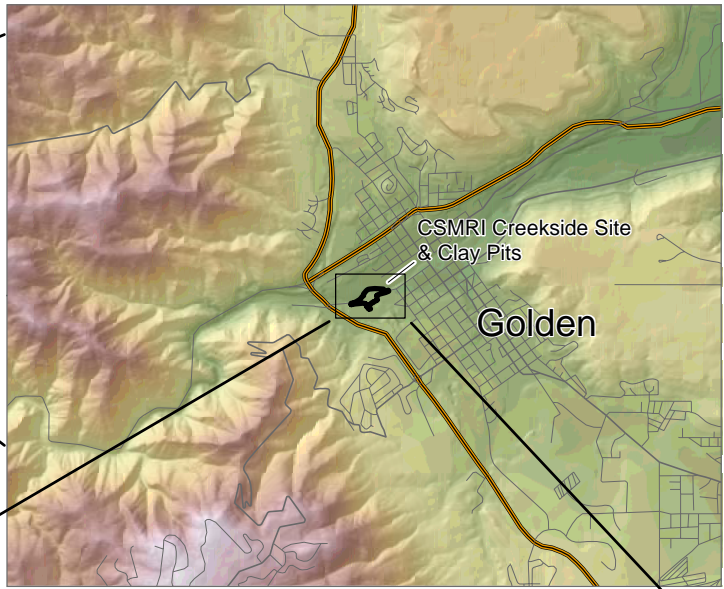
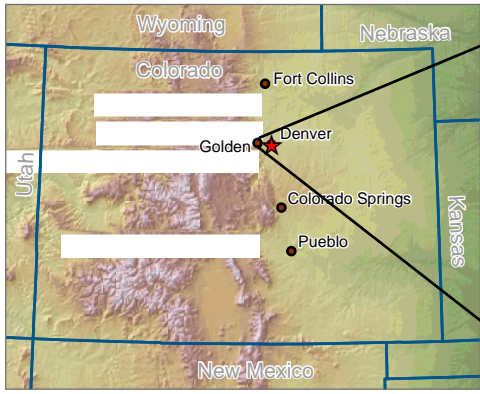


Figure 1-1

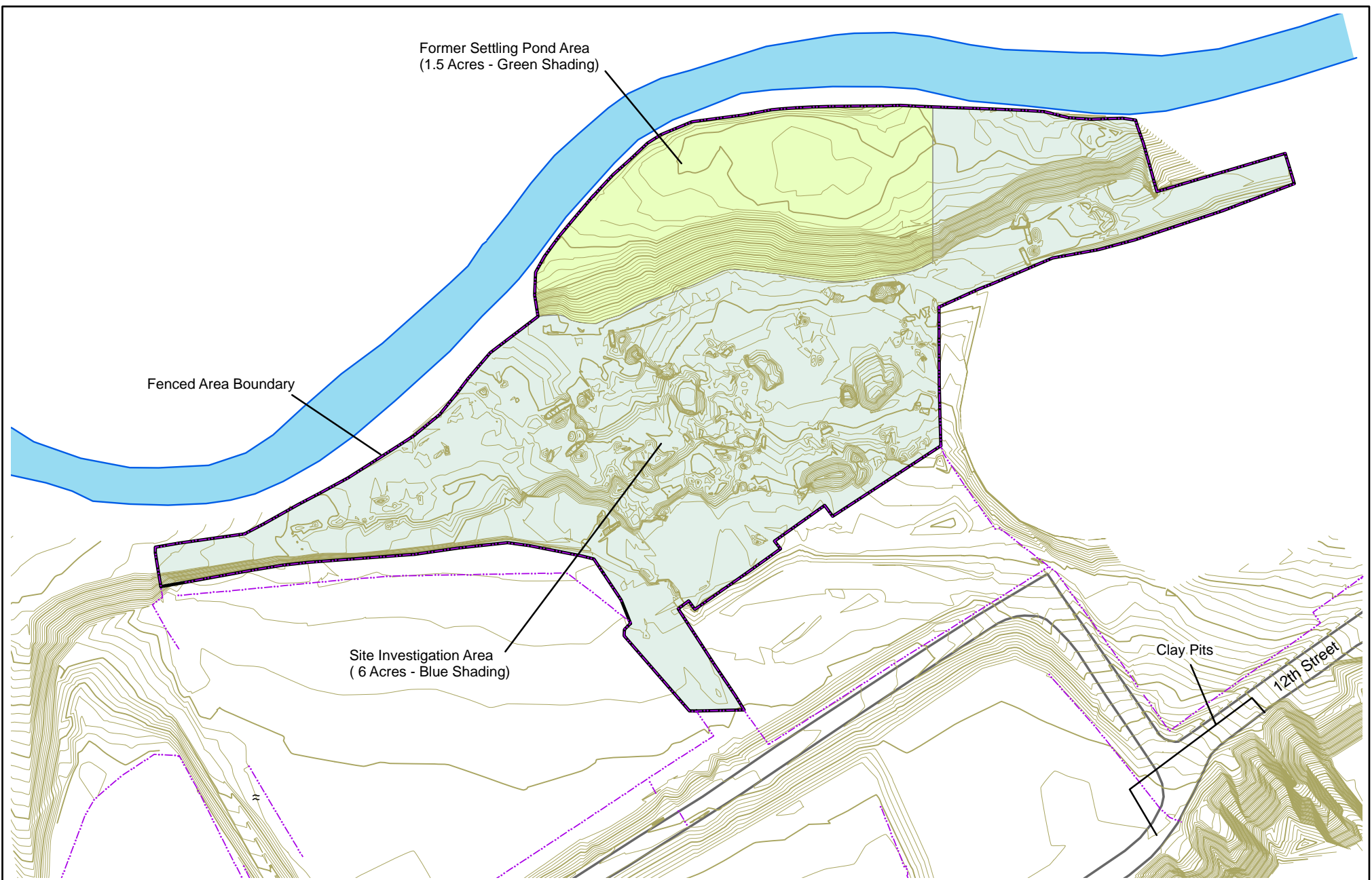
CSMRI Site Location Map
Showing Main Site and
Clay Pits Area

Explanation

- CSMRI Creekside Site
- Fences
- Topography (1 ft Intervals)
- Topography (5 ft Intervals)

CSMRI
Remedial Investigation /
Feasibility Study





Former Settling Pond Area
(1.5 Acres - Green Shading)

Fenced Area Boundary

Site Investigation Area
(6 Acres - Blue Shading)






Clay Pits

12th Street

Figure 1-2

CSMRI Site Map
Showing the Main Site
and the Clay Pits

Explanation

-  CSMRI Creekside Site
-  Fences
-  Topography (1 ft Intervals)
-  Topography (5 ft Intervals)
-  Roads



Scale: 1" = 150'



CSMRI
Remedial Investigation /
Feasibility Study

