BOYD SMELTER/MILL SITE

RESOURCE ASSESSMENT REPORT

DRAFT MARCH 2021

ACKNOWLEDGEMENTS

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IMAGE CREDITS

Current-day (2020) photographs provided by Mundus Bishop, JVA, and PaleoWest. Historic photographs (pre-2020) provided by the City of Boulder or from online archives at the Carnegie Branch Library for Local History and Boulder Historical Society Collection, unless otherwise noted.

DISCLAIMER

The Resource Assessment Report documents the history, significance, integrity and current condition of the resource. It does not evaluate for listing in the National Register of Historic Places. If the resource has been previously listed or evaluated it is referenced and footnoted.

This report is funded in part through a grant from History Colorado, State Historical Fund

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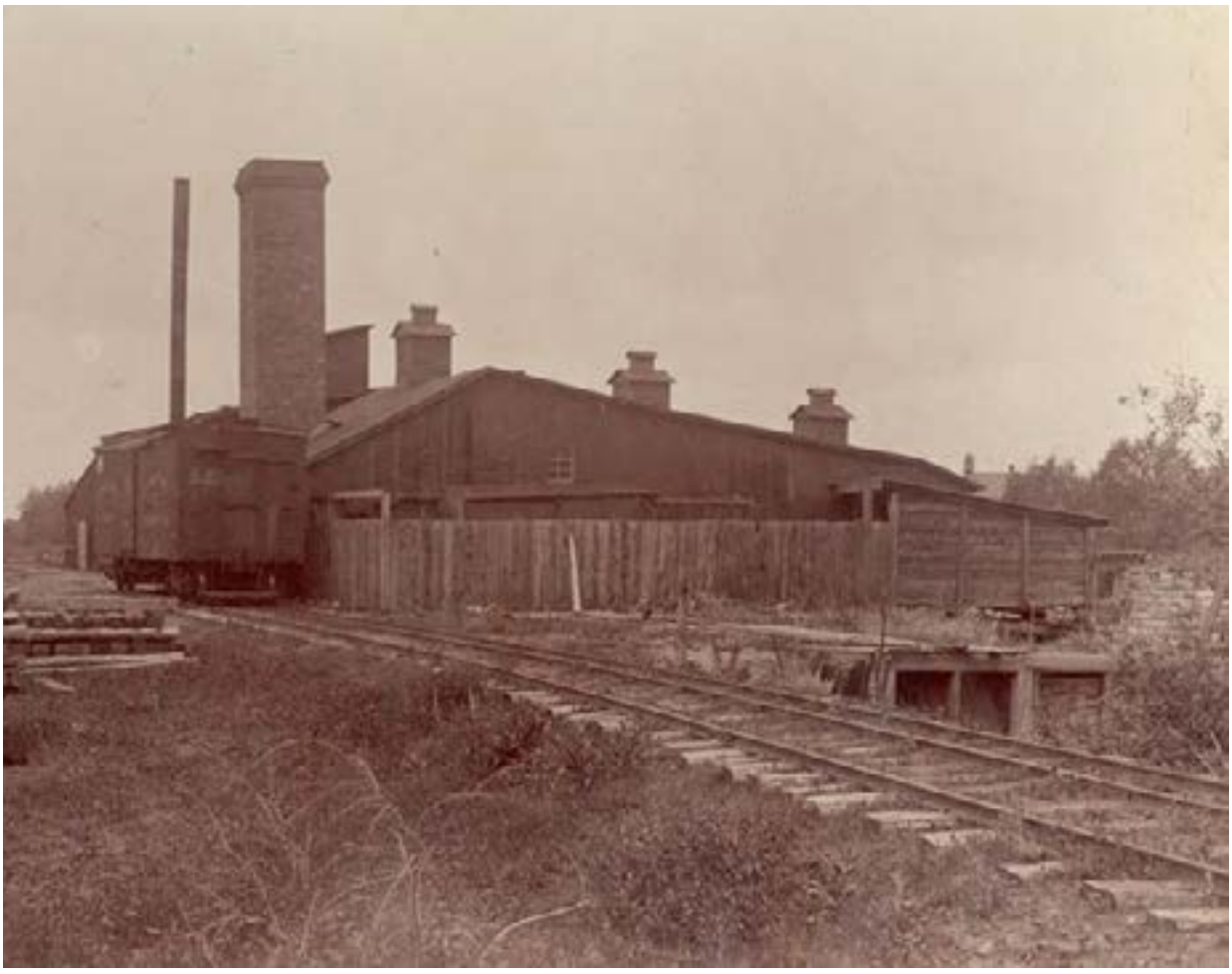

Figure 1-1. Boyd Smelter, c. 189, BHS 219-1-50 (source: Carnegie Library for Local History)

COMMON TERMINOLOGY

State/National Register Terminology[1] [2]

Area of Significance - an aspect of historic development in which a property made contributions for which it meets the National Register criteria, such as architecture, entertainment or recreation.

Character-Defining Features - the elements that account for the overall shape of the building, its materials, craftsmanship, decorative details, interior spaces and features, as well as the various aspects of its site and environment.

Contributing Resource - a building, site, structure, object, or feature adding to the significance of a property.

Designation Boundary - the boundary defined by the Landmarks Board and City Council that encompasses a historic property. This boundary represents a physical area in which any future alterations have historic preservation review associated with them.

Eligibility - ability of a property to meet the State/National Register criteria.

Evaluation Criteria - the established criteria for evaluating the eligibility of properties for inclusion in the State/National Register of Historic Places.

Historic Context - information about historic properties based on a shared theme, specific time period and geographical area.

Landscape Characteristics - the tangible and intangible aspects of a landscape from a historic period; these aspects individually and collectively give a space its historic character and aid in understanding its historical importance.

Local Landmark - a local area or building that has been determined to have a special character and historic, architectural, or aesthetic or value to the city.

Period of Significance - the span of time in which a property attained the significance for which it meets the State and/or National Register criteria, and/or Local Landmarks criteria.

Property Type - a grouping of properties defined by common physical and associative attributes.

Integrity [3]

Integrity is the ability of a property to convey its significance. It is assessed to determine if the characteristics that shaped the property during the period of significance are present as they were historically.

Location is the place where the historic property was constructed or the place where the historic event occurred.

Setting is the physical environment of a historic property.

Design is the combination of elements that create the form, plan, space, structure, and style of a property.

Materials are the physical elements that were combined or deposited during a particular period of time and in a particular pattern or configuration to form a historic property.

Workmanship is the physical evidence of the crafts of a particular culture or people during any given period in history or prehistory.

Feeling is a property's expression of the aesthetic or historic sense of a particular period of time.

Association is the direct link between an important historic event or person and a historic property.

1 US Department of the Interior, National Park Service, ***How to Complete the National Registration Bulletin*** (Washington DC: National Park Service Cultural Resources, 1997), Appendix IV.

2 US Department of the Interior, National Park Service, The Secretary of the Interior's Standards for Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes (Washington DC: Cultural Resource Stewardship and Partnerships,1996).

3 Ibid.

PROPERTY OVERVIEW

Property Name:	Boyd Smelter/Mill Site
Location:	South of Canyon Blvd; West of Justice Center
Property Address:	0 Canyon Blvd
Latitude/ Longitude:	40.0050 / -105.1728
Legal Property Description:	TRACT 422-A LESS PART IN NE 1/ 4 BO 36-1N-71 and THAT PART OF TR 422A THAT LIES IN NE 1/4 36-1N-71
Parcel Tag(s):	146136200045 and 146136100070
Acreage / Square Footage:	2.08 Acres / 90,556 SF
Date of Construction:	First Smelter (1874); Boulder Creek Greenway (1985)
Designer(s):	N/A

DESIGNATION, ELIGIBILITY, & CLASSIFICATION SUMMARY

Current Designation Level

x Local Landmark
__ State Register of Historic Properties (SRHP)
__ National Register of Historic Properties (NRHP)

State & National Register Eligibility [4]

State Register of Historic Properties	National Register of Historic Properties
x Determined Eligible	x Determined Eligible
__ Delisted	__ Delisted

Recommended Period of Significance

Date Range: 1874 to 1918

Property Types

__ District(s)	x Structure(s)
x Sites(s)	__ Object(s)
__ Buildings(s)	__ Feature(s) (SRHP)

Individual Character-Defining Features of Property Types

District(s)	Structure(s)
_____	Water Line Pylons
_____	Steel Girders
Site(s)	**Object(s)**
Boyd Smelter/Mill	_____
_____	_____
Building(s)	**Feature(s) (SRHP only)**
_____	_____
_____	_____

Ordinance & Listing Information

City of Boulder
Local Landmark No: 98-2
Ordinance No: 6003
Ordinance Date: August 4, 1998
State ID: _____
Smithsonian Trinomial: 5BL-7094
National Historic Landmark No: _____

Areas of Significance

Industry
Archeology
Transportation

Property Integrity: Aspects

x Location	__ Workmanship
__ Setting	x Feeling
__ Design	__ Association
x Materials	

NRHP Evaluation Criteria [5]

x Criteria A: The property is associated with event that have made a significant contribution to the broad patterns of our history
__ Criteria B: The property is associated with the lives of persons significant in our past
__ Criteria C: The property embodies the distinctive characteristics of a type, period, or method of construction or represents the work of a master, or possesses high artistic values, or represents a significant and distinguishable entity whose components may lack individual distinction
x Criteria D: The property has yielded, or may be likely to yield, information important in prehistory or history

4 City of Boulder, Parks & Recreation Advisory Board, "Public Hearing, Review & Consideration of a Recommendation to City Council Regarding the Landmarking of the Site Generally Located West of the Justice Center, also known as the Boyd Smelter/Mill Site (Boulder, CO: City of Boulder, 1998),3.

5 Ibid., 3.

Designation Boundary

The designated boundary includes the entire area embraced by the resource including exposed building foundations, railroad bridge footings, waterline support towers, a dam and headgate, and other scattered artifacts.

The Boulder Smelter/Mill Site is on Boulder Creek in the west portion of Boulder. Boulder Creek flows west to east between eroded cut banks. Sunshine Creek also passes through the site, flowing north to south into Boulder Creek. Vegetation comprises mixed tall grasses and forbs, chokecherry, cottonwood, willow, locust, maple, and pine.

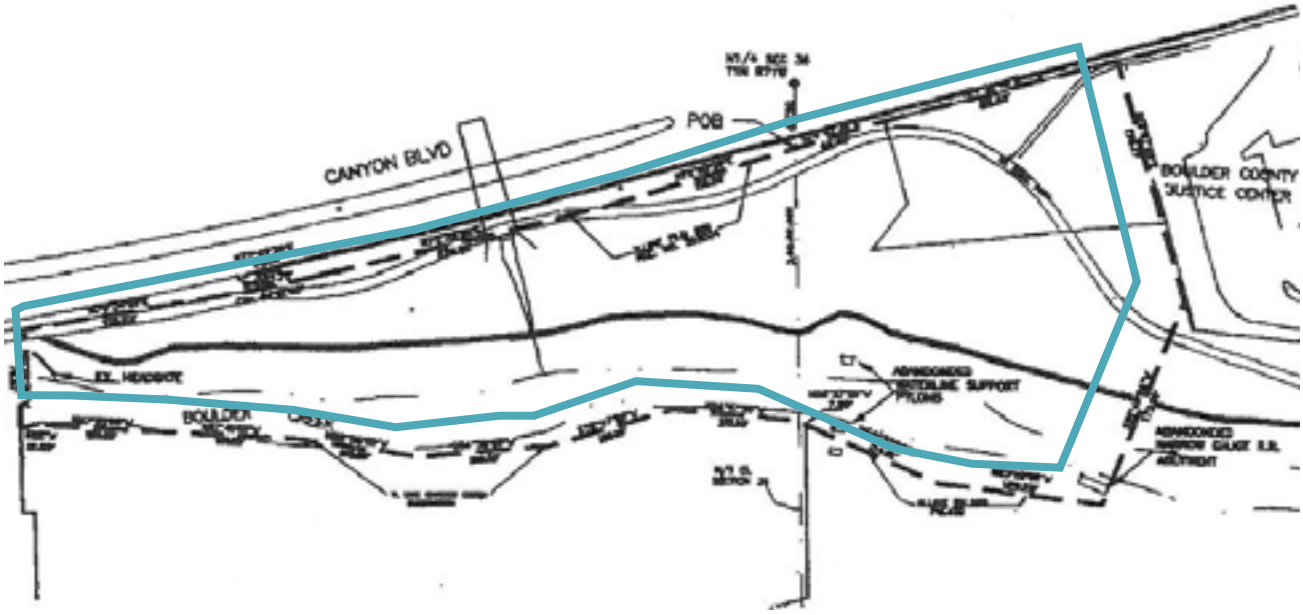

Figure 1-2. Landmark boundary from Ordinance 6003 with the resource area noted in blue.

HISTORY & SIGNIFICANCE

Historic Context

See Appendix

Statement of Significance

Boyd Smelter/Mill Site is historically significant as the location of Boulder's first smelter, built in 1874. The site is historically significant for its association with smelting and milling industries that occurred along Boulder Creek and with the railroad that served these industries. The site is environmentally significant as one of the last remaining vestiges of Boulder's smelting and milling industries that once proliferated along Boulder Creek. Boyd Smelter/Mill Site contains features that provide important information on the history of mining and milling in Boulder.[6] The Colorado Historical Society, State Historic Preservation Office reviewed the Cultural Resource Inventory Form for the site in 1998 and determined the site to be eligible for the State and National Registers, meeting Criterion A and D.[7]

Boyd Smelter/Mill Site is significant for its association with "the smelting and milling industries along Boulder Creek." During the height of the mining industry, multiple smelting sites occurred along Boulder Creek.[8] The Boyd Smelter was Boulder's first smelter.[9] Many were removed during the development of downtown Boulder. Boyd Smelter/Mill is exceptional as one of last remaining vestiges of the mining/smelting industry within the City of Boulder, the site is a significant part of Boulder's cultural and industrial history.[10]

Boyd Smelter Site contains features that "provide important information about the history of mining and milling in Boulder.[11] Excavations as recent as 2017 yielded information about the building that once existed on site.[12] The discovery of industrial and domestic remnants may yield more information of the history of Boulder and of the smelting/milling industry of the late 19th and early 20th centuries.

Period of Significance

The recommended period of significance corresponds to the site's use as both a smelting and a milling site. The recommended period of significance is 1874 to 1918. This corresponds with the site's use as a smelting operation beginning in 1874 when James Boyd's mill first became operational and ends in 1918 when the tungsten market collapsed and operations in Boulder were shutdown.[13]

6 City of Boulder, Ordinance No. 6003: Boyd Smelter/Mill Site (Boulder, CO: City of Boulder, 1998), 2.
7 City of Boulder, Parks & Recreation Advisory Board, "Public Hearing, Review & Consideration of a Recommendation to City Council Regarding the Landmarking of the Site Generally Located West of the Justice Center, also known as the Boyd Smelter/Mill Site (Boulder, CO: City of Boulder, 1998),3.
8 City of Boulder, Ordinance No. 6003: Boyd Smelter/Mill Site (Boulder, CO: City of Boulder, 1998), 2.
9 City of Boulder, Parks & Recreation Advisory Board, "Public Hearing, Review & Consideration of a Recommendation to City Council Regarding the Landmarking of the Site Generally Located West of the Justice Center, also known as the Boyd Smelter/Mill Site (Boulder, CO: City of Boulder, 1998),6.
10 Smith, Jack E., Cultural Resource Survey of the Boyd Smelter Site (5BL7094) (Boulder, CO: Historic Boulder, Inc., 2001), 4-5.
11 City of Boulder, Ordinance No. 6003: Boyd Smelter/Mill Site (Boulder, CO: City of Boulder, 1998), 2.
12 Sanocki, Abigail. Technical Memorandum: Boulder Creek Improvements at Boyd Smelter, Unanticipated Discovery, Boulder County, Colorado. Boulder, CO: ERO Resources Corporation, 2017.
13 City of Boulder, Parks and Recreation Advisory Board, "Public Hearing, Review and Consideration of a Recommendation to City Council Regarding the Landmarking of the Site Generally Located West of the Justice Center,also known as the Boyd Smelter/Mill Site (Boulder, CO: City of Boulder, 1998), 2.

Summary of Use

Historic Use

Boyd Smelter/Mill Site is the historic location of smelting and milling operations along Boulder Creek. During the period of significance, the smelter/mill had several owners. The land use for each site varied.

Date	Event
1874 to 1880	James A. Boyd's Smelting Operation (1874 to 1880) - processed gold, silver, and iron ore
1880 to 1883	Golden Smelting Works - ore smelting
1896 to 1898	Spier Gold Works - initially ore smelting, gradually shifted to tungsten milling
1905	Colorado Tungsten Corporation - tungsten milling
1916 to 1918	Vasco Mining Company - tungsten milling

Current Use

Boyd Smelter/Mill Site is a public open space and archeological site that provides passive recreation with some limited programming. Boulder Creek Greenway is along the site's northern and western edges. It provides opportunities for biking, walking, and running. A soft surface trail adjacent to Boulder Creek provides access to Boulder Creek, with water-based recreational activities including swimming, floating, and fishing.

Construction and Alteration History

Date	Event	Source
1873	James H. Boyd purchased six acres along Boulder Creek from John Brierly.	Preservation and Interpretation Plan, 8
1874	Boyd built Boulder's first smelter. It did not immediately open as the ore smelting was still in an experimental phase.	Landmark Public Hearing, 2-3
1876	Boyd Smelter became operational and processed fifteen tons of ore per day – primarily gold and silver with some iron and lime.	Preservation and Interpretation Plan, 8
1880	James Boyd leased the smelter to Frank C. Goff who prepared ores for Golden Smelting Works.	Landmark Public Hearing, 3
1883	Narrow gauge railroad tracks were used to bring materials from the mines to downtown Boulder. Goff processed 20 to 30 tons per day and added a new crusher. Boyd leased the site to Col. Teeters in July.	Landmark Public Meeting, 4 Preservation and Interpretation Plan, 8
1885	Boyd sold the smelter to John E. Lord who planned to overhaul it into a mill using cyanide to process low grade ore (gold-telluride).	Landmark Public Hearing, 3
1893 to 1898	Site operated as Spier Gold Works.	Landmark Public Hearing, 3
1894	A massive flood wiped out the Greeley, Salt Lake and Pacific Railroad and the railroad was abandoned.	Landmark Designation Public Hearing, 4
1905	Colorado Tungsten Corporation used the mill to process tungsten from the Nederland area.	Landmark Public Meeting, 3
1910	The Olmsted Brothers recommended creating a series of park reserves along Boulder Creek. The smelter site was identified as a potential natural area.	Preservation and Interpretation Plan, 5
1914 to 1918	During World War I, Boulder County was the leading tungsten producer in the United States.	Landmark Public Hearing, 3
1919	Switzerland Trail of America railroad was abandoned after a cloudburst incident damaged the tracks beyond repair.	Landmark Public Hearing, 4
1920	Vasco sold the property.	Preservation and Interpretation Plan, 8
1920s to 1950s	The reservoirs used to hold water for mill operation were used as sand collection pits.	Landmark Public Hearing, 3, 5
1933	City of Boulder purchased the Boyd Smelter/Mill site.	Landmark Public Hearing, 5
1960s	Canyon Boulevard was built and fill material from construction was used to bury the many of the extant structures and reservoirs.	Landmark Public Hearing, 5
1985	Boulder Creek Greenway was built.	Preservation and Interpretation Plan, 8
1997	An environmental analysis study found that the soil contained low levels of contamination from uranium mine tailings.	Bernhardt Memo
1998	Boyd Smelter/Mill site was designated a Boulder Historic Archaeological Landmark by the City of Boulder.	Landmark Ordinance no. 6003
2000 to 2002	Historic Boulder, Inc received a grant from Colorado Historical Society's State Historical Fund and City of Boulder for a cultural resource survey and the *Boyd Smelter Site: Preservation and Interpretation Plan*.	Preservation and Interpretation Plan, 8
2017	ERO Resource Corporation surveyed and excavated the Boulder Creek Path. Multiple artifacts were identified and eventually reburied at the completion of the survey.	Unanticipated Discovery Memo

INTEGRITY

Boyd Smelter/Mill Site retains integrity of location, materials, and feeling. Although many extant structures were covered by fill material in the 1960s, portions were unearthed in 2017 confirming these features remain in their original location. The development of downtown Boulder and the removal of most of the smelting equipment has diminished the setting and association. The extant features on site are fragments of a larger industrial complex. The rustic water line pylons still show some integrity in workmanship and materials; however, the extent of the original design is unclear. Although the integrity of feeling is diminished, its extant features like the water still evoke a sense of a larger industrial operation on site.

Location

Boyd Smelter/Mill Site remains in its original location, but extant above-grade features associated with milling and the smelter no longer remain. Foundations of the smelter building buried during the construction of Canyon Boulevard in the 1960s remain and are largely unchanged since the 1920s. The below-grade features retain their original location with some being unearthed as recently as 2017.

Setting

Boyd Smelter/Mill Site has diminished integrity of setting due to the development of the surrounding residential and commercial neighborhood. The original smelter/mill was an open site with few trees.

Design, Materials, & Workmanship

Most of the remaining structures on site are fragments of a larger industrial complex, obscuring their original design, workmanship, and only revealing a portion of the materials. Of the remaining structures, the water line pylons show the strongest semblance of workmanship and materials from the era they were built in. These stacked stone masonry pylons are made from local sandstone, fieldstone from the creek, and salvaged concrete.

Feeling

The integrity of feeling is diminished due to the lack of extant buildings and structures from the period of significance. Extant remnants of contributing features evoke a sense of mill and smelter operations.

Association

Boyd Smelter/Mill Site no longer retains integrity of association with smelting or mining as most structures and features have been removed or destroyed. The few structures that remain are not mining-specific features, but are associated with the period significance.

CURRENT EXISTING CONDITION

LANDSCAPE CONDITION

Landscape Condition Summary

Boyd Smelter Site is a two-acre archeological site and public open space on Boulder Creek and Canyon Boulevard, west of the Boulder Municipal Court. The site is owned and operated by the City of Boulder for passive recreation and is a designated historic archeological landmark.

The site is located on the north bank of Boulder Creek. The embankments of Boulder Creek are covered with riparian species including cottonwoods, willows, and dense multi-stemmed shrubs. The remainder of the site is a large flat area with some trees and covered in tall grasses and weeds where smelter operations and holding ponds were located.[14] During construction of Canyon Boulevard in the 1960s, excess material from roadway construction was deposited at the smelter site. As a result, many of the features associated with smelting and milling were buried under the fill material.

Natural Systems and Features

Boulder Creek was the ideal location for smelting and milling operations in the ;ate 19th century and early 20th century due to the abundance of fresh water needed for industrial operations. Portions of the Boulder Creek's banks were altered for smelting operations and proximity to associated mining operations. Sunshine Creek, a tributary of Boulder Creek, was diverted into a canal that paralleled Boulder Creek.[15] The canal was eventually removed and Sunshine Creek returned to its approximate original channel.[16] Although the river channels have changed, Boulder Creek and Sunshine Creek retain historic qualities and are character-defining features of the Boyd Smelter/Mill Site.

Topography

Topography above Boulder Creek is largely man-made with many original features and landforms covered by fill material spread across the site during the 1960s construction of Canyon Boulevard.[17] Historic photos indicate that the area was largely open with two large reservoirs located west of the smelter building. Both reservoirs were enclosed by earthen berms on the south side and concrete dam/headgates at the east and west ends. The reservoirs were filled in the 1960s; however, portions of the earthen berms remain visible, obscured by dense vegetation.[18]

Vegetation

Little remains of the original vegetation, aside from one a few large riparian trees along the banks of Boulder Creek. Two of these prominent trees include Plains Cottonwood (80 in DBH) (Figure 1-10) and a large willow (60 in DBH).[19] A few of the choke cherry bushes may also be historic.

Riparian vegetation occurs on the banks of Boulder Creek, which defines the southern edge of the site. Riparian vegetation provides a visual barrier that separates the site from the residential community on the southern bank. The vegetation along Boulder Creek is typical of other riparian areas in the region. Vegetation on the top of the banks includes fruit-bearing trees, evergreen, box elder, and cottonwood trees, native grasses, and weed species.[20]

14 Smith, Jack E., Cultural Resource Survey of the Boyd Smelter Site (5BL7094) (Boulder, CO: Historic Boulder, Inc., 2001), 4.
15 Mundus Bishop, Boyd Smelter Site: Preservation and Interpretation Plan (Denver, CO: Mundus Bishop, 2002), 7.
16 Smith, Jack E., Cultural Resource Survey of the Boyd Smelter Site (5BL7094) (Boulder, CO: Historic Boulder, Inc., 2001), 4.
17 Mundus Bishop, Boyd Smelter Site: Preservation and Interpretation Plan (Denver, CO: Mundus Bishop, 2002), 9.
18 Smith, Jack E., Cultural Resource Survey of the Boyd Smelter Site (5BL7094) (Boulder, CO: Historic Boulder, Inc., 2001), 9.
19 Mundus Bishop, Boyd Smelter Site: Preservation and Interpretation Plan (Denver, CO: Mundus Bishop, 2002), 7.
20 Smith, Jack E., Cultural Resource Survey of the Boyd Smelter Site (5BL7094) (Boulder, CO: Historic Boulder, Inc., 2001), 4.

Circulation

The primary circulation route is the multiple-use Boulder Creek Greenway on the site's north edges. A secondary soft surface trail is adjacent to Boulder Creek. Boulder Creek Greenway multi-use trail connects multiple park units and is a heavily used within the Boulder Parks system. Boulder Creek Greenway was widened in 2017 to accommodate pedestrian traffic (Figure 1-3). A spur pathway was built near the original Ore House. The soft surface trail provides direct access to Boulder Creek and some extant archeological features including remnants of water line pylons and a portion of the concrete dam (Figure 1-4).

Accessibility

Many remnant extant small-scale features are along the soft surface trail. The soft surface trail varies in width and it rutted in some locations. This trail does not meet ADA accessibility requirements.

Boulder Creek Greenway is a multiple-use concrete pathway that connects Boyd Smelter/Mill Site to other City of Boulder park properties. The open field where the smelter and mill were located is adjacent to this trail.

Figure 1-3. Boulder Creek Greenway near Boyd Smelter/Mill interpretive sign, 2020 (source: Mundus Bishop)

Figure 1-4. Soft surface trail adjacent to Boulder Creek, 2020 (source: Mundus Bishop)

Figure 1-5. View of Boulder Canyon with Boyd Smelter's smoke stack visible in the background (left of the railroad tracks), BHS 219-1-52 (source: Carnegie Library for Local History)

Figure 1-6. View of Boulder Canyon from the site, 2020 (source: Mundus Bishop)

Structures

Stone pylons with support girders - Three stone water pylons span the width of Boulder Creek. The pylons supported the city's water line and iron girders offered additional support. The water line is no longer extant, but three support pylons remain intact.[21] Two pylons are on the south bank of Boulder Creek, on private property. The north pylon is easily accessible from the soft surface trail. The north pylon shows evidence of recent vandalism (Figure 1-11).

Concrete dam with headgate - Several dams and headgates diverted water from Boulder Creek into Boyd Smelter/Mill Site's holding ponds. The westernmost dam and headgate provided direct egress into Boulder Creek. Previous studies have indicate that other dams and headgates still remain in their original locations.[22] The concrete dam and headgate shows evidence of recent vandalism (Figure 1-7).

Small Scale Features

Boulder with Iron Hooks- Two boulders are adjacent to the soft surface trail in the southeast corner of the site. The larger boulder has two rusted iron rings fixed to it. The other boulder includes a plaque describing the significance of the Boyd Smelter/Mill Site. The origin of iron hooks is unknown, but is assumed to be associated with milling and smelter operations (Figure 1-8).

Interpretive Sign - The sign provides a brief history of the site and industrial operations along Boulder Creek (Figure 1-18).

Xeriscape Garden - Theses pavers was installed after the construction of Boulder Creek Greenway. Little is known about the garden or the stone pavers arranged in three large circles.[23] The feature is in poor condition (Figure 1-17).

Views and Viewsheds

The site features a prominent view to Boulder Canyon, which has become less prominent due to growth of trees on the site and along Boulder Creek (Figure 1-5 and 1-6).

Archeological Features

Boyd Smelter/Mill Site is a significant archeological site. Archeological features associated with smelting and milling operations remain above and below-grade including ruins of a narrow-gauge railroad that once serviced industrial operations on site, dam headwalls that controlled water entering the site through the reservoirs, and remnants of the historic water line. Building foundations are extant below-grade.

The 2017 excavation during the expansion of the Boulder Creek Greenway uncovered foundation walls, a concrete floor, building materials, and industrial and domestic refuse.[24]

21 Smith, Jack E., Cultural Resource Survey of the Boyd Smelter Site (5BL7094) (Boulder, CO: Historic Boulder, Inc., 2001), 10.
22 Ibid., 10.
23 Ibid., 4.
24 Sanocki, Abigail, Technical Memorandum: Boulder Creek Path Improvements at Boyd Smelter Unanticipated Discovery, Boulder County, Colorado (Boulder County, CO: 2018) 1-2.

Figure 1-7. Plain's Cottonwood along Boulder Creek, 2020 (source: Mundus Bishop)

Figure 1-8. North pylon and iron support girder, 2020 (source: Mundus Bishop)

Figure 1-9. Concrete dam and headgate (source: Mundus Bishop)

Figure 1-10. Boulders with landmark plaque and rusted iron hooks (source: Mundus Bishop)

Table 1-1: Character-Defining Features

Feature	Condition	Contributing/ Non-Contributing
Natural Systems and Features		
Boulder Creek	Good	Contributing
Sunshine Creek	Good	Contributing
Topography		
Earthen berm at reservoir sites	Fair	Contributing
Open Level Area (location of building foundations and holding ponds)	Fair	Contributing
Vegetation		
Plains Cottonwood (80" DBH)	Fair	Contributing
Large Willow (60" DBH)	Fair	Contributing
Newer riparian vegetation	Good	Non-Contributing
Vegetation Open Level Area (fruit trees, evergreens, box elder, cottonwood, native grasses, and weeds)	Fair	Non-Contributing
Circulation		
Soft surface trail with bridges	Fair	Non-Contributing
Boulder Creek Greenway	Good	Non-Contributing
Structures		
North pylon with steel girder	Fair	Contributing
South pylons	Fair (Observed from a distance)	Contributing
Concrete dam and headgate	Fair	Contributing
Small Scale Features		
Boulder with Iron Hooks	Good	Contributing
Interpretive sign	Good	Non-Contributing
Xeriscape Garden	Poor	Non-Contributing
Views and Viewsheds		
View of Boulder Canyon	Poor	Contributing
Below-grade Features		
Holding Ponds (Reservoir 1 and Reservoir 2)	Not Observed	Contributing
Smelter Building Foundations	Not Observed	Contributing

LEGEND

- Boyd Smelter Site
- Boulder Historic District
- Non-extant Feature
- Non-extant Building Footprint
- Extant Feature
- Soft Surface Trail
- Interpretive Sign

1. Boyd Mill & Smelter Outline
2. Assay Office Outline
3. Ore House Outline
4. Historic Line of Railroad
5. Historic Line of Sunshine Creek Diversion
6. Historic Berm Line
7. Head Gate & Dam
8. Reservoir Number 1
9. Reservoir Number 2
10. North & South Pylons
11. Bridge Footing
12. Jack's Cottonwood
13. Xeriscape Garden

Figure 1-11. Boyd Smelter/Mill Existing Condition, 2021 (source: Mundus Bishop).

STRUCTURAL CONDITION

WATER LINE PYLONS

Masonry Pylons

The three remaining masonry pylons are constructed of a mixture of local sandstone, tumbled field stones from the creek, and salvaged blocks of early concrete. The masonry has been repointed with a hard, cementitious mortar. The structures generally taper from the base to the top and there are some remnants of metal components embedded into the masonry structures, such as the metal bar atop the northernmost pylon. The northernmost pylon is on the north bank of Boulder Creek, while the southern two pylons are on the south bank of Boulder Creek. The two on the south bank were inaccessible at the time of the observation visit since they require access through private property.

Overall, the masonry pylons are in fair condition. Although there are no signs of major failure or displacement, there are several issues that could be improved to increase the longevity of the pylons. Most of the following were identified at the north pylon due to access, but likely occur at the other pylons as well. Several of the masonry units, primarily the reused concrete, have cracked. Some stones are missing. In some areas, mortar is missing between the stones. Additionally, the mortar is quite hard or cementitious for direct contact with the softer stones (i.e. the sandstone). The parge coat cap atop the masonry pylon is cracked and does not cover all elements. Biogrowth on the masonry is abundant in shady areas of the pylons. The pylons directly adjacent to the banks of Boulder Creek are slightly undercut due to scour from the moving creek water.

Steel Girders

Extending north from the northernmost pylon are two built up girders. These elements consist of a vertical plate riveted to a channel at the top and bottom. The open side is faces with a lattice of thin steel strips. At the south end, they bear on the masonry pylon while at the north end they now bear on grade.

The girders are in fair condition. Although they are structurally stable, the north end of the girders are currently buried in the earth. If there is no substantial foundation element below these ends, the soil could settle and cause the north end of the girders to settle as well. Also, there are areas of the girders where rust has started to form due to exposure to the elements. Lastly, there are trees and other plant growing in close proximity to the steel girders that could cause the steel girders to displace down the road if the plants grow larger.

Figure 1-12. Biogrowth and areas of missing mortar, 2020 (source: JVA)

Figure 1-13. Southern pylons on south side of Boulder Creek, 2020 (source: JVA)

Figure 1-14. Steel girders extending from northernmost pylon, 2020 (source: Mundus Bishop)

Figure 1-15. Base of north pylon. Note the scour at the creek bank's edge, 2020 (source: JVA)

Figure 1-16. South face of north pylon, 2020 (source: JVA)

Structural Condition Definitions

This structural condition assessment makes use of terms concerning the condition of building components which are defined as follows:

Good - A structural element, component or system is considered in good condition when it is undamaged, structurally sound or functionally operational, and performing as intended. No specific repairs are required, and only minor or routine maintenance is needed.

Fair - An element, component or system is considered in fair condition when there are signs of wear or deterioration, such as freeze-thaw deterioration, corrosion, or wood decay exceeding expectations based on the age and use of the element, that may be reducing the structural capacity of the member. Replacement or repair of the element may be required.

Poor - An element, component, or system is considered in poor condition when it no longer performs its intended structural purpose. Deterioration or damage reduced the load carrying capacity of the element and simple repairs cannot be justified or are not expected to be effective. The element may show signs of imminent failure. Major repair or replacement will be required.

Condition ratings reported are based upon visual observations only.
No material testing or exploratory observations have been made.
NOTE: Further investigation could result in modification to condition ratings.

Table 1-2: Condition Assessment of Northern Water Pylon

Primary Architectural/ Structural Features	Description of Primary Materials	Condition
Masonry Pylons	Local stacked sandstone	Fair
Steel Girders	Steel girders	Fair

ADDITIONAL IMAGES

Figure 1-17. Pavers from xeriscape garden, 2020 (source: Mundus Bishop)

Figure 1-18. Interpretive sign along Boulder Creek Greenway, 2020 (source: Mundus Bishop)

Figure 1-19. South water pylon on private property (source: Mundus Bishop)

Figure 1-20. Steel line above ground, adjacent to the creek (source: Mundus Bishop)

RESOURCES

Bernhardt, Kate to Rebecca Waugh and Tina Bishop. Memo on Environmental Analysis at Boulder Smelter Site. Boulder, CO: City of Boulder Parks and Recreation, 2001.

City of Boulder. *Ordinance No. 6003: Boyd Smelter/Mill Site*. Boulder, CO: City of Boulder, 1998.

City of Boulder, Parks and Recreation Advisory Board. "Public Hearing, Review and Consideration of a Recommendation to City Council Regarding the Landmarking of the Site Generally Located West of the Justice Center, also known as the Boyd Smelter/Mill Site. Boulder, CO: City of Boulder, 1998.

Mundus Bishop. *Boyd Smelter Site: Preservation and Interpretation Plan*. Denver, CO: Mundus Bishop, 2002.

Sanocki, Abigail. *Technical Memorandum: Boulder Creek Improvements at Boyd Smelter, Unanticipated Discovery, Boulder County, Colorado*. Boulder, CO: ERO Resources Corporation, 2017.

Smith, Jack E. *Cultural Resource Survey of Boyd Smelter Site (5BL7094)*. Boulder, CO: Historic Boulder Inc., 2001.

United States Department of the Interior, National Park Service. *How to Complete the National Registration Bulletin*. Washington DC: National Park Service Cultural Resources, 1997.

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Boulder Parks Multiple Resource Preservation Plan
Boyd Smelter/Mill Site Historic Context

Statement of Context

Boyd Smelter/Mill site is a two-acre public open space and archeological site owned by the City of Boulder. Boyd Smelter/Mill is associated with the theme of Late 19th/Early 20th century mining engineering and industry. The recommended period of significance is from 1874 to 1918 and captures the period of active smelting and milling operations. The recommended period of significance begins when James Boyd's first mill became operational and ends when the tungsten market collapsed and operations. The site was designated as a local archeological landmark by the City of Boulder Landmarks Board and City of Boulder City Council in 1998. The designated site boundary consists of archeological resources above and below-grade including buried foundations of the main smelter building and ancillary buildings, buried concrete dams with headgates, and water pylons along Boulder Creek. The site is locally significant as one of the last remaining vestiges of the smelting and mining industry within Boulder. The site contains archeological features that could yield future information on the history of mining and milling within Boulder.

Background History

James Boyd purchased land along Boulder Creek to build a smelter in 1873, and began to process gold, silver, and iron in 1874. By 1876, the smelter produced nearly fifteen tons of ore per day. Boyd leased the smelter to Frank Goff in 1880, who processed twenty to thirty tons per day. Boyd eventually sold the smelter site in 1885. The site operated under multiples ownerships between 1893 and 1918. During 1914 and 1918, Boulder County was the leading producer of tungsten in the country. Operations ceased with the collapse of the tungsten market after World War I. After the war, smelting operations ceased.

In the early 1900s the City of Boulder commissioned the Olmsted Brothers to assess the Boulder foothills and mountains for scenic resources. They recommended creating a series of park reserves and improvements to make Boulder Creek a natural stream. The location of Boyd/Smelter Mill Site was identified as a potential natural area.

Following the closure of the smelter and mill, the land remained largely unchanged. Eventually, most of the buildings were dismantled, except for some concrete footings, concrete headgates, and holding ponds, that existed through the 1950s.[1] In the 1960s Canyon Boulevard was built filling most of the site with excavated waste material. Infill material buried many of the extant remnants of the smelter and mill were buried. In the mid-1980s Boulder Creek Greenway was built on the north and east edges of the site. During construction, remnants of the smelter building were discovered, and construction of the trail was shifted north to minimize impact to below-grade features. Construction included the Boulder Creek Greenway, a soft surface trail, and two small bridges.

Boyd Smelter/Mill Site has remained largely unchanged since being designated a Boulder Historic Archeological Landmark by the City of Boulder in 1998. Between 2001 and 2002, a series of surveys and reports were developed to determine future uses for the site. [2] In 2017, the Boulder Creek Greenway– was

[1] Mundus Bishop, *Boyd Smelter Site: Preservation and Interpretation Plan* (Denver, CO: Mundus Bishop, 2002), 5.
[2] Ibid., 7-8.

widened, during site excavations, several archeological features from the smelter site were uncovered, but eventually reburied.[3]

Definition of the Context

Boyd Smelter/Mill is associated with the theme of Late 19th/Early 20th century mining engineering and industry. Smelters in Colorado were significant for their advancements in metallurgical engineering. Smelters developed advanced methods for mining gold, silver, and industrial metal ore. Large regional smelters made most of these contributions; however, smaller local smelters like Boyd would have played a significant role in identifying, defining, and demonstrating these technologies and methods for ores in a specific region. The Boyd Smelter is significant for its contribution to industrial development in Boulder's industrial geography. Smelters, such as Boyd, helped bring the railroad industry into a town, which in turn fostered the growth of and reinforced the mining industry within a developing city.[4]

Development of the Theme or Area of Significance

In the late 19th Century, a trend developed in Colorado of small, local smelters being built within Colorado towns and cities in response to the success of smelters bringing the gold industry back to life after the decline of the initial gold rush.[5] The time at which Boyd Smelter/Mill was constructed corresponds with this trend, and the development of the railroad system within Boulder. Smelters were key in treating various ores on a local level.

Associated Property Types

Similar smelter sites in the western United States have been listed in National Register of Historic Places (NRHP). The Ohio-Colorado Smelting and Refining Company Smokestack in Salida is the only smelting site listed in the NRHP in Colorado. [6] Some sites on the NRHP consist only smelter remnants, such as the Grand Encampment Mining Region: Boston Wyoming Smelter Site in Carbon, Wyoming. The integrity of these sites varies with the former being a visual landmark located just outside the fabric of a city to later which has become a refuse dump, largely devoid of its original visual character. [7]

In 2008, a multiple property resource nomination for "The Mining Industry in Colorado." This nomination outlines the requirements for various mining property types and their eligibility for the NRHP. The nomination includes smelters as a property type and outlines the types of structures or archeological materials that must be extant on site to qualify for the NRHP. Features include foundations of buildings, if different areas of the building can be identified, such as blowers, furnaces, or coal bins.[8]

Physical Characteristics and Integrity

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[3] Sanocki, Abigail, *Technical Memorandum: Boulder Creek Improvements at Boyd Smelter, Unanticipated Discovery, Boulder County, Colorado* (Boulder, CO: ERO Resources Corporation, 2017).
[4] Fell, James E., *The Mining Industry in Colorado, Multiple Property Listing, National Register of Historic Places* (Louisville, CO: National Register of Historic Places, 2008), 209-210.
[5] Fell, James E., "Ores to Metals – The Rocky Mountain Smelting Industry," Western Mining History Online, Accessed February 24, 2021, https://westernmininghistory.com/655/ores-to-metals-the-rocky-mountain-smelting-industry/.
[6] Hutchinson, Wendell F., *Ohio-Colorado Smelting and Refining Company Smokestack, National Register of Historic Places Nomination* (Salida, CO: Save Our Stack Committee), 3.
[7] Junge, Mark, *Grand Encampment Mining Region: The Boston-Wyoming Smelter Site, National Register of Historic Places Nomination* (Encampment, WY: Wyoming Recreation Commission, 1973), 3.
[8] Fell, James E., *The Mining Industry in Colorado, Multiple Property Listing, National Register of Historic Places* (Louisville, CO: Mundus Bishop, 2008), 207.

Boyd Smelter/Mill Site retains above-grade features including remnants of stone water line pylons, a concrete dam and headgate, and an earthen berm. Numerous extant small-scale features indicative of industrial practices remain and including steel elements on the banks of Boulder Creek and a modified boulder with iron hooks.

Boyd Smelter/Mill Site retains integrity of location, materials, and feeling. Although many extant structures were covered by fill material in the 1960s, portions were unearthed in 2017 confirming these features remain in their original location. The development of downtown Boulder and the removal of most of the smelting equipment has diminished the setting and association. The extant features on site are fragments of a larger industrial complex. The rustic water line pylons still show some integrity in workmanship and materials; however, the extent of the original design is unclear. Although the integrity of feeling is diminished, its extant features like the water still evoke a sense of a larger industrial operation on site.

Relationship to the National Register Criteria

The Colorado Historical Society, State Historic Preservation Office reviewed the Cultural Resource Inventory Form for the site in 1998 and determined the site to be eligible for the State and National Registers, meeting Criterion A and D.[9]

Bibliography

City of Boulder, Parks and Recreation Advisory Board, "Public Hearing, Review and Consideration of a Recommendation to City Council Regarding the Landmarking of the Site Generally Located West of the Justice Center, also known as the Boyd Smelter/Mill Site (Boulder, CO: City of Boulder,1998).

Mundus Bishop. *Boyd Smelter Site: Preservation and Interpretation Plan*. Denver, CO: Mundus Bishop, 2002.

Fell, James E. *The Mining Industry in Colorado, Multiple Property Listing, National Register of Historic Places*. Louisville, CO: Mundus Bishop, 2008, 209-210.

Fell, James E. "Ores to Metals – The Rocky Mountain Smelting Industry." Western Mining History Online. Accessed February 24, 2021. https://westernmininghistory.com/655/ores-to-metals-the-rocky-mountain-smelting-industry/.

Hutchinson, Wendell F. *Ohio-Colorado Smelting and Refining Company Smokestack, National Register of Historic Places Nomination.* Salida, CO: Save Our Stack Committee.

Junge, Mark. *Grand Encampment Mining Region: The Boston-Wyoming Smelter Site, National Register of Historic Places Nomination*. Encampment, WY: Wyoming Recreation Commission, 1973.

Sanocki, Abigail. *Technical Memorandum: Boulder Creek Improvements at Boyd Smelter, Unanticipated Discovery, Boulder County, Colorado*. Boulder, CO: ERO Resources Corporation, 2017.

[9] City of Boulder, Parks and Recreation Advisory Board, "Public Hearing, Review and Consideration of a Recommendation to City Council Regarding the Landmarking of the Site Generally Located West of the Justice Center, also known as the Boyd Smelter/Mill Site (Boulder, CO: City of Boulder,1998), 6-7.

LEGEND

- Boyd Smelter Site
- Boulder Historic District
- Non-extant Feature
- Non-extant Building Footprint
- Extant Feature
- Soft Surface Trail
- Interpretive Sign

1. Boyd Mill & Smelter Outline
2. Assay Office Outline
3. Ore House Outline
4. Historic Line of Railroad
5. Historic Line of Sunshine Creek Diversion
6. Historic Berm Line
7. Head Gate & Dam
8. Reservoir Number 1
9. Reservoir Number 2
10. North & South Pylons
11. Bridge Footing
12. Jack's Cottonwood
13. Xeriscape Garden

Mundus Bishop | March 2021

Boyd Smelter Site | Existing Condition and Analysis

N

0 20 40 80 ft

Management Data Form

A *Management Data Form* should be completed for each cultural resource recorded during an archaeological survey. Isolated finds and revisits are the exception and they do not require a *Management Data Form*. Please attach the appropriate component forms and use continuation pages if necessary. Fields can be expanded or compressed as necessary.

1. **Resource Number**: 5BL.7094

2. **Temporary Resource Number**: N/A

3. **Attachments (check as many as apply)**
- ☐ Prehistoric Archaeological Component
- ☒ Historic Archaeological Component
- ☐ Linear Component
- ☒ Sketch/Instrument Map (required)
- ☒ U.S.G.S. Map Photocopy (required)
- ☒ Photograph(s) (required)
- ☐ Other, specify:

4. **Official determination (OAHP use only)**
- ☐ Determined Eligible NR\SR _____
- ☐ Determined Not Eligible NR\SR _____
- ☐ Nominated _____
- ☐ Need Data NR\SR _____
- ☐ Contributing to NR Dist.\SR Dist. _____
- ☐ Not Contributing to NR Dist.\SR Dist. _____
- ☐ Supports overall linear eligibility NR\SR _____
- ☐ Does not support overall linear eligibility NR\SR _____

I. IDENTIFICATION

5. **Resource Name**: Boyd Smelter and Mill

6. **Project Name/Number**: Boulder Multiple Resource Preservation Plan/PW 20-780

7. **Government Involvement**: ☒ Local ☐ State ☐ Federal
Agency: City of Boulder

8. **Site Categories (check as many as apply)**:
Prehistoric: ☐ archaeological site ☐ paleontological site ☐ In existing National Register District
National Register District name:
Historic: ☒ archaeology site ☐ building(s) ☒ structure(s) ☐ object(s) ☐ In existing National Register District
National Register District name:

9. **Owner(s) Name and Address**: City of Boulder, PO Box 791, Boulder CO 80306

10. **Boundary Description and Justification**: The site boundary was drawn to encompass all associated features as previously determined by Jack E. Smith of Historic Boulder, Inc., plus an approximately 10-meter buffer on all sides.

11. **Site/Property Dimensions** Length: m Width: m Area: m^2 Acres (m^2/4047):

Area was calculated as: ☐ Length x Width (rectangle/square) ☐ Length x Width x 0.785 (Ellipse) ☐ GIS

II. LOCATION

12. **Legal Location**

PM 6th Township 1N Range 71W Section 36 NE ¼ NW ¼

PM 6th Township 1N Range 71W Section 36 NW ¼ NE ¼

If section is irregular, explain alignment method:

13. **USGS Quad**: Boulder, CO

14. **County**: Boulder

15. **UTM Coordinates**: Datum used ☐ NAD 27 ☒ NAD 83 ☐ WGS 84 Other:
A. Zone 13; 475170 mE 4429360 mN

16. **UTM Source**: ☒ Corrected GPS/rectified survey (<5m error) ☐ Uncorrected GPS ☐ Map template
Other (explain):

17. **Site elevation** (feet): 5,380

Management Data Form

Resource Number: 5BL.7094 **Temporary Resource Number**: N/A

18. **Address**: N/A Lot: Block: Addition:

19. **Location/Access**: The site is located along Boulder Creek in Boulder between Canyon Boulevard to the north, Boulder Municipal Court (1777 6th Street) to the east, Arapahoe Avenue to the south, and Eben G. Fine Park (101 Arapahoe Avenue) to the west.

III. NATURAL ENVIRONMENT/SITE CONDITION

20. **General Description** (should include both on site as well as geographical setting with aspect, landforms, vegetation, soils, depositional environment, water, ground visibility): 5BL.7094 is located along Boulder Creek in the west portion of Boulder. Boulder creek flows west to east between eroded cut banks that face north and south and measure between 4–15 feet high. Sunshine Creek also passes through the site, flowing north to south into Boulder Creek. Most of the site components are located on the north side of Boulder Creek, where the ground has a mild (1–3 degree) south-southeast aspect. The ground slope on both sides of the creek channel averages 15 degrees. A small portion of the site extends to the south bank of the creek. Vegetation comprises mixed tall grasses and forbs, chokecherry, cottonwood, willow, locust, maple, and pine. Ground surface visibility averages 55 percent.

21. **Soil depth (cm) and description**: Soils appear on the surface as a strong brown sandy loam with abundant cobbles. A soil test was not conducted to avoid inadvertently impacting buried features and because site is located in a public park.

22. **Condition**

a. Architectural/Structural
- ☐ Excellent
- ☐ Good
- ☐ Fair
- ☐ Deteriorated
- ☒ Ruin

b. Archaeological/Paleontological
- ☐ Undisturbed
- ☐ Light disturbance
- ☐ Moderate disturbance
- ☒ Heavy disturbance
- ☐ Total disturbance

23. **Describe condition**: All buildings have been removed and few artifacts are visible on the surface. Some remaining features have been intentionally buried or backfilled; their current condition is unknown. The most intact, visible features are the water line support footings and the headwall, which appear structurally sound but have been vandalized.

24. **Vandalism**: ☒Yes ☐ No

Describe: Spray paint on water line support footings footings and headwall.

IV. NATIONAL/STATE REGISTER ELIGIBILITY ASSESSMENT

25. **Context or Theme**: Late Nineteenth and Early Twentieth-century Hardrock Mining in Boulder County (Telluride Gold Boom; Tungsten Boom)

26. **Applicable National Register Criteria**:
- ☒ A. Associated with events that have made a significant contribution to the broad pattern of our history
- ☐ B. Associated with the lives of persons significant in our past
- ☐ C. Embodies the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction
- ☐ D. Has yielded, or may be likely to yield, information important in history or prehistory
- ☐ Does not meet any of the National Register criteria
- ☐ Qualifies under exceptions A through G. List exception(s):

27. **Applicable State Register Criteria**:
- ☒ A. Property is associated with events that have made a significant contribution to history
- ☐ B. Property is connected with persons significant in history
- ☐ C. Property has distinctive characteristics of a type, period, method of construction or artisan
- ☐ D. Property is of geographic importance
- ☐ E. Property contains the possibility of important discoveries related to prehistory or history
- ☐ Does not meet any of the State Register criteria

28. **Area(s) of significance**: Industry – Mining; Archaeology – Historic – Non-aboriginal

29. **Period(s) of significance**: ca. 1874–1885; 1905–1918

30. **Level of significance**: ☒ National ☒ State ☒ Local

31. **Statement of significance**: Site 5BL.7094 is eligible under Criterion A for its association with the telluride and tungsten mining booms of Boulder County. In contrast, it is not associated with persons significant in history, so it is no eligible under Criterion B. Because it no longer retains most aspects of physical integrity, it is also not eligible under Criterion C. Likewise, 5BL.7094 is not eligible under Criterion D because most of the buildings and structures have been removed or destroyed.

32. **Statement of historic integrity related to significance**: Site 5BL.7094 has reduced integrity of location, design, materials, and workmanship because the buildings and most of the structures have been removed. The site also has reduced integrity of setting and feeling because the surrounding area has been developed into a residential and commercial neighborhood. Finally, 5BL.7094 no longer retains integrity of association with smelting or mining because most of the related structures and features have been removed or destroyed, and no other mining-related resources are present in the vicinity. The few structures that remain (e.g. the headgate and city water line footings) are not mining-specific features.

33. **National Register Eligibility Field Assessment**: ☒ Eligible ☐ Not eligible ☐ Need data
Linear Segment Evaluation (if applicable): ☐ Supporting ☐ Non Supporting
34. **Status in an Existing National Register Distric**t: ☐ Contributing ☐ Non-contributing
35. **State Register Eligibility Field Assessmen**t: ☒ Eligible ☐ Not eligible ☐ Need data
36. **Status in an Existing State Register District**: ☐ Contributing ☐Non-contributing
37. **National/State Register District Potential**: ☐ Yes ☒ No Describe: The paucity of significant, intact sites related to mining or mineral processing in the vicinity precludes the formation of a historic district.

38. **Cultural Landscape Potential**: ☐ Yes ☒ No Describe: The paucity of significant, contemporaneous sites in the vicinity precludes the formation of a cultural landscape.

39. **If Yes to either 37 or 38, is this site**: ☐ Contributing ☐ Non-contributing Explain:

V. MANAGEMENT AND ADMINISTRATIVE DATA

40.**Threats to Resource**: ☒ Water erosion ☐ Wind erosion ☐ Grazing ☐ Neglect ☒ Vandalism
☒Recreation ☒ Construction ☐ Other (explain):

41. **Existing protection** ☒ None ☐ Marked ☐ Fenced ☐ Patrolled ☒ Access controlled
Other (specify):

Comments: Most of the site is located within a public park; features on the south bank are surrounded by private property and more difficult to access.

42. **Local landmark designation**: Yes, City of Boulder. Designated August 4, 1998 (Landmark No. 98-2; Ordinance No. 6003)

43. **Easement**: None

44. **Recorder's Management Recommendations**: PaleoWest recommends additional testing at the site to determine presence, location, frequency, and condition of subsurface cultural materials. We recommend that remaining structural features should be protected with a buffer to prevent impact by future landscaping and/or construction activities, and features located along Boulder Creek should be reinforced against erosion and potential future flood events. In addition, PaleoWest recommends that a property survey should be conducted to determine if the water line footings on the south side of Boulder Creek are on city or private property. If they are on city property, they should be protected with a fence. If they are on private property, the city should attempt to acquire a conservation easement for these structures. Finally, PaleoWest recommends that the city should install additional interpretive signs to place the history of the Boyd Smelter and Mill in context with the history of telluride and tungsten mining in Boulder County.

VI. DOCUMENTATION

45. **Previous actions accomplished at the site**: ☐ Tested ☐ Partial excavation ☐ Complete excavation

Management Data Form

Resource Number: 5BL.7094 **Temporary Resource Number**: N/A

Date(s):

a. Excavations:

b. Stabilization: Date(s):

c. HABS/HAER documentation [date(s) and numbers]:

d. Other:

46. **Known collections/reports/interviews and other references (list)**:

Gladden, Sanford Charles
1982 Early Days of Boulder, Colorado, Vol II. Boulder Genealogical Society, Boulder, Colorado. Pp. 670–672.

Smith, Jack E.
1997 Colorado Cultural Resource Survey Management Data Form and Historical Archaeology Component Form for 5BL.7094. Historic Boulder, Inc. On file at the Office of Archaeology and Historic Preservation, Denver, Colorado.

1998 Colorado Cultural Resource Survey Site or Property Reevaluation Form for 5BL.7094. Historic Boulder, Inc. On file at the Office of Archaeology and Historic Preservation, Denver, Colorado.

Twitty, Eric
2007 Amendment to Metal Mining and Tourist Era Resources of Boulder County Multiple Property Listing. Mountain States Historical, Boulder, Colorado.

47. **Primary location of additional data**: Colorado Office of Archaeology and Historic Preservation, Denver.

48. **State or Federal Permit number**: State of Colorado Archaeological Permit No. 77512

49. **Collection**: Artifact collection authorized: ☐ Yes ☒ No Were artifacts collected: ☐ Yes ☒ No
Artifact repository:

Collection method: ☐ Diagnostics ☐ Grab Sample ☐ Random Sample

Other (specify):

50. **Photograph Numbers**: 5BL.7094 Photographs 1–43

Files or negatives stored at: PaleoWest officer servers in Lafayette, CO and Phoenix, AZ

51. **Report title**: N/A

52. **Recorder(s)**: Autumn C. Cool Date: December 10, 2020

53. **Recorder affiliation**: PaleoWest, LLC

Phone number/Email: 360-440-7202 / acool@paleowest.com

NOTE: Please attach a site map, a photocopy of the USGS 1:24000 map indicating resource location, and photographs.

History Colorado - Office of Archaeology & Historic Preservation
1200 Broadway, Denver, CO 80203
303-866-3395

Historic Archaeology Component Form

1. **Resource Number**: 5BL.7094 2. **Temporary Resource Number**: N/A

3. **Site Name:** Boyd Smelter and Mill

4. **Does this form pertain to the site in general?** ☒ Yes ☐ No

If no, please supply a feature/structure number or name:

5. **Site, Component or Feature Type**: Smelter, Mill

6. **Narrative History (based on archival research, expand as necessary)**: The Boyd Smelter was constructed in response to the Telluride Boom (1872–1880) in the nearby Gold Hill Mining District. Telluride gold, a compound comprised of gold, sulphur, and tellurium, is very rare in most parts of the world, but abundant in Boulder County. Because telluride gold generally cannot be visually identified, it had been overlooked during the first gold rush of the 1860s. The mineral was not identified until 1872, when Boulder assayer J. Alden Smith confirmed its presence. In the rush that followed, several smelters were constructed to treat the ore and separate the gold from the waste (Twitty 2007).

Mr. J.H. Boyd of Chicago, Illinois, purchased property to build a smelter in 1873. Boyd arrived in Boulder that November to finalize his plans, and construction of the smelter began in the spring of 1874. A Boulder County News article from July 3, 1874 noted that "Mr. Boyd has six acres of ground for the accommodation of his business. The present building is 52 x 90 feet, but will be enlarged to meet the wants of the busines" (Gladden 1982). The smelter began treating ore in 1876. Its location at the mouth of Boulder Canyon helped reduce the cost of transporting raw ore from the mines, one of the primary challenges of the telluride gold industry (Twitty 2007).

Boyd, A.J. Bean, and Corydon Sanborn organized the Cash Gold & Silver Mining Company in 1875 to work the Cash mine, located in the Gold Hill Mining District. Boyd invested in this mining company to ensure a steady supply of ore for his Boulder smelter and mill (Twitty 2007). In 1876, a news article reported that the smelter was regularly processing 15 tons a day; approximately six tons of gold and silver and nine tons of iron and lime (Gladden 1982).

The Telluride Boom ended in 1880, giving way to a period of consolidation and industrialization of the local mining industry by a few large corporations (Twitty 2007). Boyd put his Boulder smelter up for sale circa 1883. On April 29, 1885, the Boulder County Herald reported that the smelter had been purchased by Mr. John E. Lord of Chicago (Gladden 1982). Boyd himself moved on to construct and operate a new facility, the Cash Mill, in Summerville (Twitty 2007).

PaleoWest found little information regarding operations at the Boyd Smelter between circa 1885–1905. An 1886 Sanborn Fire Insurance Map states "Not in operation" next to the mill (Sanborn Fire Insurance Company 1886). While the 1895 map had no such commentary, the 1900 map reads "(CLOSED) Not in good condition" (Sanborn Fire Insurance Company 1895, 1900).

The Boyd Smelter found renewed purpose as the Boulder Tungsten District developed. In 1900, Samuel Conger identified tungsten ore near Nederland. At the same time, engineers around the world were developing the first tungsten-based steel alloys. Together, these factors resulted in the first tungsten mining boom in Boulder County. In 1905, the Colorado Tungsten Corporation bought and refitted the Boyd Smelter with a mill to treat tungsten. However, a 1907 national recession forced the Colorado Tungsten Corporation to sell its assets and close the Boyd Smelter and Mill in 1908 (Twitty 2007).

With the outbreak of World War I in 1914, increased demand for steel led to a revitalization of the tungsten industry in Boulder County. In 1916, brothers N.G., A.G., and J.A. McKenna established the Vanadium Alloy Steel Corporation, also known as Vasco. They purchased the Boyd Smelter and Mill and began to operate it once again. However, this second tungsten boom was short lived. The 1918 influenza pandemic hit the district hard, and many mining operations were shut down. In addition, the armistice agreement in November 1918 brought an end to weapons manufacturing, and the discovery of tungsten deposits in China – where the labor force was plentiful and cheap – led to a sudden and drastic decline in the value of American tungsten (Twitty 2007). Accordingly, the tungsten boom ended and with it, the Boyd Smelter and Mill closed.

The Boyd Smelter and Mill operated until circa 1918. No part of the mill or smelter is shown on a 1922 map (Sanborn Map Company 1922). Most of the mill machinery and buildings were dismantled and removed shortly after it closed; however, several stone and concrete structures remained in place through the 1950s. Most remaining features were buried or destroyed circa the late 1960s or early 1970s when the area was landscaped to

accommodate the new Boulder Creek Corridor, Boulder County Justice Center, and road construction (Smith 1997).

The Boyd Smelter and Mill site was first documented as an archaeological site by Jack. E. Smith in 1997. Smith, a retired archaeologist and Boulder native, combined extensive archival research with his own personal memories of exploring the smelter ruins prior to their removal circa 1960s–1970s (Smith 1997). The smelter/mill was designated as a local historic landmark by the City of Boulder on August 4, 1998 (Landmark No. 98-2; Ordinance No. 6003).

Gladden, Sanford Charles
1982 Early Days of Boulder, Colorado, Vol II. Boulder Genealogical Society, Boulder, Colorado. Pp. 670–672.

Sanborn Map Company
1886 Sanborn Fire Insurance Map from Boulder, Boulder County, Colorado. July 1886. Map. Available at: http://hdl.loc.gov/loc.gmd/g4314bm.g009581886.
1895 Sanborn Fire Insurance Map from Boulder, Boulder County, Colorado. September 1895. Map. Available at: http://hdl.loc.gov/loc.gmd/g4314bm.g009581895.
1900 Sanborn Fire Insurance Map from Boulder, Boulder County, Colorado. November 1900. Map. Available at: http://hdl.loc.gov/loc.gmd/g4314bm.g009581900.
1922 Sanborn Fire Insurance Map from Boulder, Boulder County, Colorado. February 1922. Map. Available at: http://hdl.loc.gov/loc.gmd/g4314bm.g009581922.

Smith, Jack E.
1997 Colorado Cultural Resource Survey Management Data Form and Historical Archaeology Component Form for 5BL.7094. Historic Boulder, Inc. On file at the Office of Archaeology and Historic Preservation, Denver, Colorado.

1998 Colorado Cultural Resource Survey Site or Property Reevaluation Form for 5BL.7094. Historic Boulder, Inc. On file at the Office of Archaeology and Historic Preservation, Denver, Colorado.

Twitty, Eric
2007 Amendment to Metal Mining and Tourist Era Resources of Boulder County Multiple Property Listing. Mountain States Historical, Boulder, Colorado.

7. **Is this site located in a NRHP historic landscape**? ☐ **Yes** ☒ **No**; **If yes, please describe**:

8. **Component or Feature Description (expand as necessary)**: The Boyd Smelter site was first documented as an archaeological site by Jack. E. Smith in 1997. He updated the site with additional features and details in 1998.

PaleoWest revisited the Boyd Smelter site in December 2020, documenting XX features (F1–F9). Because previous site recordings did not use consistent feature numbers or map references, only Features 1 and 2 correspond with previous numbering systems.

Feature 1: Railroad bridge foundation stones/retaining wall. Located on the south bank of Boulder Creek, F1 comprises a two-course limestone block wall built into the cut bank. This feature doubled as a retaining wall and support structure for the Switzerland Trail railroad (Smith 1998). After this feature was first documented in 1998 (Smith), a modern concrete block retaining wall extension was constructed on top of the west end of F1. In addition, remnants of the north support that Smith observed "scattered along Boulder Creek" are no longer present. Because this feature is bounded by Boulder Creek to the north and private property parcels to the east, south, and west, PaleoWest was unable to access the structure to take detailed measurements. We estimate that the Historic-period portions of F1 measure approximately 30 feet long × 5 feet tall.

Two artifacts were found in association with F1. A fragment of a railroad tie and a rail segment embedded along the north bank appear to have been repurposed for erosion control. The rail tie measures 2 inches wide × 3.75 inches tall × 14 feet long.

Feature 2: Group of three water line support footings or pylons arranged in a north-south line. This water line was not directly related to the operation of the Boyd Smelter/Mill; rather, F2 comprised part of the city water line. One

footing is located on the north bank of Boulder Creek and two footings are located on the south bank. The north footing (previously recorded as Feature 2 Tower 1 [Smith 1998]) is primarily constructed of mortared sandstone blocks with some granite cobbles. In contrast, the two footings on the south bank (previously recorded as Feature 2 Towers 2 and 3 [Smith 1998]) are primarily constructed of mortared cobbles.

The north footing measures approximately 88 inches tall (above ground level) on its north elevation, which is built into the creek bank, and 126 inches tall on its south elevation, where Boulder Creek has slightly undercut the structure. The north footing is made of two distinct, stacked sections. The bottom section comprises 7–11 irregular courses of large sandstone slabs. It measures approximately 73 inches tall on the south elevation and 45 inches tall on the north elevation. It measures approximately 68 inches north-south × 94 inches east-west at the base and 80 inches north-south × 60 inches east-west at the top of the section. The top section of the comprises 9–10 irregular courses of smaller sandstone blocks and measures 53 inches tall. The top section is flush with the bottom section on the north, east, and west elevations, but set back by approximately 15 inches on the south elevation, creating a south-facing "shelf." A rectangular opening centered in the base of the top section extends a portion of this shelf through to the north elevation. The opening measures 34 inches wide north-south × 19 inches tall × 30 inches deep. Two long, approximately 4-inch-thick sandstone slabs span this opening, supporting the superstructure. The rounded top of the structure measures approximately 62 inches north-south 22 inches east-west. A 4-inch-diameter pipe attached with a thick layer of concrete runs lengthwise across the very top of the north footing.

A pair of riveted iron girders is laid horizontally between the north footing and a steep bank to the north. The south ends of the girders rest in the rectangular opening in the north footing, while the north ends of the girders are buried in the hillslope. Each girder measures 5.25 inches wide × 10 inches tall × approximately 25 feet long, and they are spaced 17.5 inches apart. Several lengths of the 1-inch-diameter wire cables are scattered on the ground below the girders, partially buried. At the north end of the girders, a 1.125-inch-diameter metal rod protrudes vertically from the ground. The upper end is twisted into a closed, welded loop and the base screws into a separate metal ring.

PaleoWest was unable to access the two south footings because they are bounded by Boulder Creek to the north and private property parcels to the east, south, and west. However, the south footings were previously recorded in detail by Smith (1998). From PaleoWest's vantage point on the north bank, these footings appear largely unchanged from that previous documentation. However, the adjacent private property owners appear to use the area for recreation, judging by the presence of outdoor furniture next to, between, and leaning against these structures. In addition, the northernmost of the two south footings has been slightly undercut by Boulder Creek on its north elevation.

Feature 3: Feature 3, located at the east end of 5BL.7094, comprises two low mounds connected via a long, low berm. The east mound is located north of F1. It is irregularly shaped with maximum dimensions of approximately 48 feet northwest-southeast × 26 feet southwest-northeast × 2 feet high. Several large boulders have been placed randomly on top of it, and a modern interpretive sign has been installed to the northwest of it. The west mound is located north of F2. It measures approximately 80 feet east-west × 110 feet north-south × 4–5 feet tall. The connecting berm runs east-west between the south sides of the two mounds, tracing the north edge of a modern dirt walking trail. It measures approximately 90 feet long × 20 feet wide × 1 foot tall. Together, the two mounds and connecting berm form a crescent shape open to the north that measures 210 feet east-west × 115 feet north-south. F3 roughly outlines the former location of the main smelter building (Smith 1997, 1998). While some portions of F3 were likely formed in modern times during construction of the adjacent walking and biking trails and municipal court buildings, it likely also contains historical materials. A short segment of concrete wall located near the northeast edge of the east mound was exposed during construction of the Boulder Creek Path (Smith 1997). The wall was subsequently reburied and may still be located below the mound; PaleoWest did not relocate it.

One artifact was found in association with F3: a single red brick found on the west mound measuring 7.5 × 4.25 × 2.75 inches.

Feature 4: Feature 4 comprises an exposed concrete wall located near the west edge of the F3 west mound. The wall is oriented north-south. Most of the wall is buried within the F3 west mound; only the top of the wall is visible, flush with the ground surface. It measures 1 foot wide × 14 feet long. F4 is likely a foundation wall of the former smelter building.

Feature 5: Feature 5 comprises a pair of large granite boulders located on the south side of the F3 west mound

and due south of the F4 wall. Two metal loops have been mounted to the east boulder by inserting their ends into drilled holes and then filling the holes with cement. The loops are made with 0.75-inch-diamater hammered iron that has been twisted into loops measuring approximately 3 × 4 inches. The west boulder bears a modern plaque designating the Boyd Smelter Site as a historic landmark.

Feature 6: Feature 6 comprises a small area of exposed concrete located between F3 and F7. F6 measures approximately 16 inches east-west × 11 inches north-south. The concrete extends into the surrounding ground surface, so the full extent of the concrete is undetermined. This feature is located at the east end of the east retaining pond as recorded by Smith (1997, 1998). It may be a portion of the original dam and/or headgate.

Feature 7: Feature 7 comprises a small depression located near the center of 5BL.7094. This irregularly shaped feature has maximum dimensions of approximately 50 feet east-west × 60 feet north-south × 2 feet deep. F7 is located near the center of the former east retaining pond (Smith 1997, 1998).

While Smith (1997, 1998) described berms tracing the north and south sides of both former retaining ponds, no berms are currently visible in the vicinity of the east retaining pond. The berms were likely destroyed by grading during construction of the adjacent walking and biking trails, which overlap the locations of the former berms.

Feature 8: Feature 8 comprises an earthen berm located in the west half of 5BL.7094, between Boulder Creek to the south, F9 to the west, a dirt walking trail to the north, and Sunshine Creek to the east. This irregular berm measures approximately 234 feet long overall. It is broken into three sections measuring (from east to west) 49, 88, and 40 feet long. Each berm segment varies in height and width, averaging 6 feet wide at the base × 3 feet tall. This berm once formed the south retaining wall of the west retaining pond (Smith 1997, 1998). However, F8 was likely modified in recent years during construction of the adjacent walking trails and the catastrophic flood of September 2013. In addition, PaleoWest did not identify the parallel berm formerly located on the north side of the west retaining pond (Smith 1997, 1998); any such feature was likely destroyed during the construction of the Boulder Creek Path.

Feature 9: Feature 9 comprises a headgate and concrete headwall. Located at the far west end of 5BL.7094, F9 once diverted water from Boulder Creek into the west retaining pond. The feature is oriented south-southeast to north-northwest and measures 30 feet long overall. The concrete headwall is constructed of poured concrete reinforced with 1-inch-square metal rebar, with some large cobbles visible in the concrete at the base of the wall. It measures 13 inches thick and is divided into two sections by the central headgate. The southern section of headwall measures approximately 11 feet 9 inches long × 4 feet 6 inches tall. The base of the southern tip of the wall has been cut out to overlap a large boulder. The visible potion of the north section of wall, which is largely buried in the creek bank, measures 6 feet long.

Between the two sections of concrete headwall is the headgate opening. Iron brackets fastened to the headwalls on either side of this opening would have stabilized a wooden headgate or slide gate that could be lowered or raised as needed to adjust the flow of water through the gate. The brackets are spaced 3.25 inches apart. Two degraded fragments of 7 × 1.5-inch lumber are fixed to the concrete headwalls on either side of the gate with large bolts. Three of the bolts have large washers embossed with “MALLEABLE PAT. MAY 10 & DEV 13.04 1 IN-30.”

References:

Smith, Jack E.
1997 Colorado Cultural Resource Survey Management Data Form and Historical Archaeology Component Form for 5BL.7094. Historic Boulder, Inc. On file at the Office of Archaeology and Historic Preservation, Denver, Colorado.

1998 Colorado Cultural Resource Survey Site or Property Reevaluation Form for 5BL.7094. Historic Boulder, Inc. On file at the Office of Archaeology and Historic Preservation, Denver, Colorado.

9. **Historic Component Date(s)**: 1874–1918

Justification and Sources Consulted: Construction of the smelter commenced in early 1874 (Gladden 1982). It operated intermittently until circa 1918.

Gladden, Sanford Charles

1982 Early Days of Boulder, Colorado, Vol II. Boulder Genealogical Society, Boulder, Colorado. Pp. 670–672.

Smith, Jack E.
1997 Colorado Cultural Resource Survey Management Data Form and Historical Archaeology Component Form for 5BL.7094. Historic Boulder, Inc. On file at the Office of Archaeology and Historic Preservation, Denver, Colorado.

1998 Colorado Cultural Resource Survey Site or Property Reevaluation Form for 5BL.7094. Historic Boulder, Inc. On file at the Office of Archaeology and Historic Preservation, Denver, Colorado.

10. **Component Function(s)**:

Original Use: Smelter

Present Use: Abandoned

11. **Ethnic affiliation of occupants**: Euro-American

Justification and Sources Consulted:

Gladden, Sanford Charles
1982 Early Days of Boulder, Colorado, Vol II. Boulder Genealogical Society, Boulder, Colorado. Pp. 670–672.

12. **Historic Boundary Description**: Site boundary previously determined by Jack E. Smith of Historic Boulder, Inc., based on the visible extent of features and artifacts in addition to historical maps.

Justification and Sources Consulted:

Smith, Jack E.
1997 Colorado Cultural Resource Survey Management Data Form and Historical Archaeology Component Form for 5BL.7094. Historic Boulder, Inc. On file at the Office of Archaeology and Historic Preservation, Denver, Colorado.

1998 Colorado Cultural Resource Survey Site or Property Reevaluation Form for 5BL.7094. Historic Boulder, Inc. On file at the Office of Archaeology and Historic Preservation, Denver, Colorado.

13. **NRHP Area of Significance**: Industry – Mining; Archaeology – Historic – Non-aboriginal

Justification and Sources Consulted:

Twitty, Eric
2007 Amendment to Metal Mining and Tourist Era Resources of Boulder County Multiple Property Listing. Mountain States Historical, Boulder, Colorado.

14. **NRHP Period of Significance**: ca. 1874–1885; 1905–1918

Justification and Sources Consulted: These two date ranges represent the years that the smelter/mill was active during the telluride and tungsten mining booms

Gladden, Sanford Charles
1982 Early Days of Boulder, Colorado, Vol II. Boulder Genealogical Society, Boulder, Colorado. Pp. 670–672.

Twitty, Eric
2007 Amendment to Metal Mining and Tourist Era Resources of Boulder County Multiple Property Listing. Mountain States Historical, Boulder, Colorado.

15. **Site, Component, or Feature Theme (use the Historic Archaeology Lexicon)**: Industry – Mining and Mineral Processing, Smelting

16. **Does this component or feature support the NRHP eligibility of the entire resource?**

☐ Yes ☐ No ☐ Undetermined ☒ N/A

Justification:

Historic Archaeology Component Form

Resource Number: 5BL.7094 **Temporary Resource Number**: N/A

17. **Recorder(s)**: Autumn C. Cool 18. **Date**: December 10, 2020

19. **Presence and Quantity of Artifacts** (add types as necessary)

a. Vessel Glass	Quantity	e. Cans	Quantity
Amber (1860s-present)		Beverage: all aluminum (post-1970)	
Amethyst (pre-1920)		Beverage: aluminum ends (post-1953)	
Aqua (ca. 1870-1920s)		Beverage: cone-top (1935-1960)	
Cobalt		Beverage: flat top, all-steel (1935-1970s)	
Colorless (ca. 1920s-present)		Beverage: pull tab (1962-1983)	
Light green (1860s-present)		Beverage: UPC code (post-1980)	
Milk/White (1890s-present)		Hole-in-cap: double-locked side seam (1890-1915)	
Olive green (early 1860s)		Hole-in-cap: lapped side seam (ca. 1880s-1900)	
Yellowish (1918-1950s)		Round quart motor oil: all metal (1933-1970s)	
		Round quart motor oil: paper-sided (late 1940s-late 1980s)	
		Sanitary can (1904 +)	
		Sanitary ends, lapped side seam (1904+; very rare)	
		Sardine tin: lapped and soldered (pre-1910)	
b. Ceramics	**Quantity**	Sardine tin: one piece bottom (early 1900s +)	
Earthenware		Tobacco tin: complex friction lid (post 1948)	
Porcelain		Tobacco tin: simple friction lid (1907-1948)	
Refined Earthenware		Tobacco tin: upright pocket (late 1890s-1988)	
Stoneware		Tobacco tin: hinged lid (ca. 1910-present)	
		Vent hole (hole-in-top) (1900-1980s)	
		Vent hole with two solder dots (hole-in-top) (1890s-early 1900s)	
c. Nails	**Quantity**		
Hand-made cut (wrought)			
Machine-made cut			
Railroad Spike		**f. Structural Artifacts**	**Quantity**
Wire		Adobe	
		Brick, common	1
d. Industrial Artifacts	**Quantity**	Brick, fire	
55-gallon drum		Concrete: natural lime (pre-1915)	
Animal shoe		Concrete: Portland (post-1910)	
Automobile/Truck Part		Corrugated sheet iron (post-1890)	
Bailing wire		Dimensional lumber	
Barbed wire		Fieldstone	
Barrel hoop		Hinge	
Bracket		Log: hewn	
Bucket		Log: peeled	
Cable/Wire rope	2	Log: raw	
Cartridge: centerfire		Sheet iron	
Cartridge: rimfire		Stovepipe	
Cartridge: pin fire		Tarpaper	
Cartridge: shotgun shell		Timber bolt	
Clinker		Timber spike	
Coal		Window glass: aqua (pre-1920)	
Electric light fixture		Window glass: colorless	
Electrical wire		Window glass: yellowish tint (1918-1950s)	
Forge-cut iron scrap			
Horse tack/harness			
Iron scrap: cut sheet metal			
Iron scrap: forge-cut			
Lag bolt		**g. Domestic Artifacts**	**Quantity**
Machine bolt		Beads	
Machine part		Bed frame/springs	
Mine rail		Buttons	
Nut: hex		Clothing	
Nut: jamb		Cookware	
Pipe		Doll head	
Railroad rail	1	Stove/parts (cast iron/tin)	
Railroad tie	1		
Wagon parts			
Washer			

20. **Total assemblage size**: 5 Or estimate: ☐ 0-10 ☐ 11-100 ☐ 101-1000 ☐ 1001-10,000 ☐ >10,000

21. **Artifact density**: ☐ High ☐ Medium ☒ Low Describe: PaleoWest identified just five plausible Historic-period artifacts: a red brick, wire cable, and a segment of railroad rail and tie. While additional glass and concrete fragments

are sparsely scattered around the site, these are not temporally diagnostic and could be related to modern road and trail construction or use of the Boulder Creek Path.

22. **Unique Artifact Descriptions.** Particularly important attributes are listed following the artifact class and standardized terminology can be found in the Appendix to the instructions. Expand or contract tables as necessary. All of these items should be included in the counts of the Artifact table above.

a. Glass: type, function, color, bottle part, manufacturing method, vessel style/contents, embossing/marking, dimensions, worked or modified?
b. Ceramics: type, function, surface treatment/glaze, color, shape, trademarks, decorations, dimensions.
c. Nails: type, function, dimensions.
d. Industrial: type, function, manufacturing method, marking, dimensions.
e. Cans: material type, side-seam, opening, vessel style/contents, embossing/marking, dimensions.
f. Structural: type, function, manufacturing method, marking, dimensions.
g. Domestic: type, function, manufacturing method, marking, dimensions.
h. Other/miscellaneous: type, function, manufacturing method, marking, dimensions.

23. **Are standing structures present on the site?** Yes ☐ No ☐

If yes, please complete Architectural Inventory Form(s)(1403)

24. **Feature Descriptions** Include a site map, to scale, with each feature listed below depicted on it. Please use the Historic Archaeology Lexicon for feature types. Insert rows and feature types into table as necessary. If desired, sort table by feature number.

Feature Type (add others as necessary)	Feature Number/Name	Dimensions (feet / inches)	Description
Retaining wall	F1	Estimated 30 ft long × 5 ft tall	Retaining wall located on south side of Boulder Creek, inaccessible due to location bounded by private property. Constructed of large limestone blocks.
Footing (group)	F2	North footing maximum: 68 in north-south × 94 in east-west 88 in tall	Set of three stone water line footings or support pylons. Only the north footing was accessible for detailed documentation; the remaining two footing are on the south side of Boulder Creek and bounded by private property.
Mound/berm (group)	F3	210 ft east-west × 115 ft north-south × 5 ft tall	Two irregular mounds connected by a low berm, all located in vicinity of former smelter building
Wall	F4	1 ft wide × 14 ft long	Exposed concrete wall, possibly part of smelter building. Flush with ground surface.
Modified boulders	F5	Rings: 3 × 4 in	Boulder with Historic-period rings and boulder with modern plaque
Wall	F6	16 in east-west × 11 in north-south	Small area of exposed concrete in vicinity of former east retaining pond, possibly part of dam
Depression	F7	50 ft east-west × 60 ft north-south × 2 ft deep	Irregular depression located within former east retaining pong
Berm	F8	234 ft long × 6 ft wide × 3 ft tall	Broken, irregular earthen berm forming south boundary of former west retaining pond
Headgate	F9	30 ft long × 13 in thick × 4 ft 6 in tall	Concrete headwall and former headgate

25. **Potential for Additional Archaeological Information**

Historic Archaeology Component Form

Resource Number: 5BL.7094 **Temporary Resource Number**: N/A

Is there potential for additional information? ☒ Yes ☐ No ☐ Unknown If yes or unknown describe below.

Potential Within:	Describe
a. Subsurface deposits within a structural feature	As documented by Smith (1997, 1998), at least one section of concrete wall is likely buried below the F3 east mound. PaleoWest's documentation of partially-buried features F4 and F6 provides further support that additional features and artifacts may be present below the ground surface.
b. Subsurface deposits outside a structural feature	
c. Trash area	
d. Privy pits	
e. Other	

History Colorado - Office of Archaeology & Historic Preservation
1200 Broadway, Suite 400, Denver, CO 80203
303-866-3395

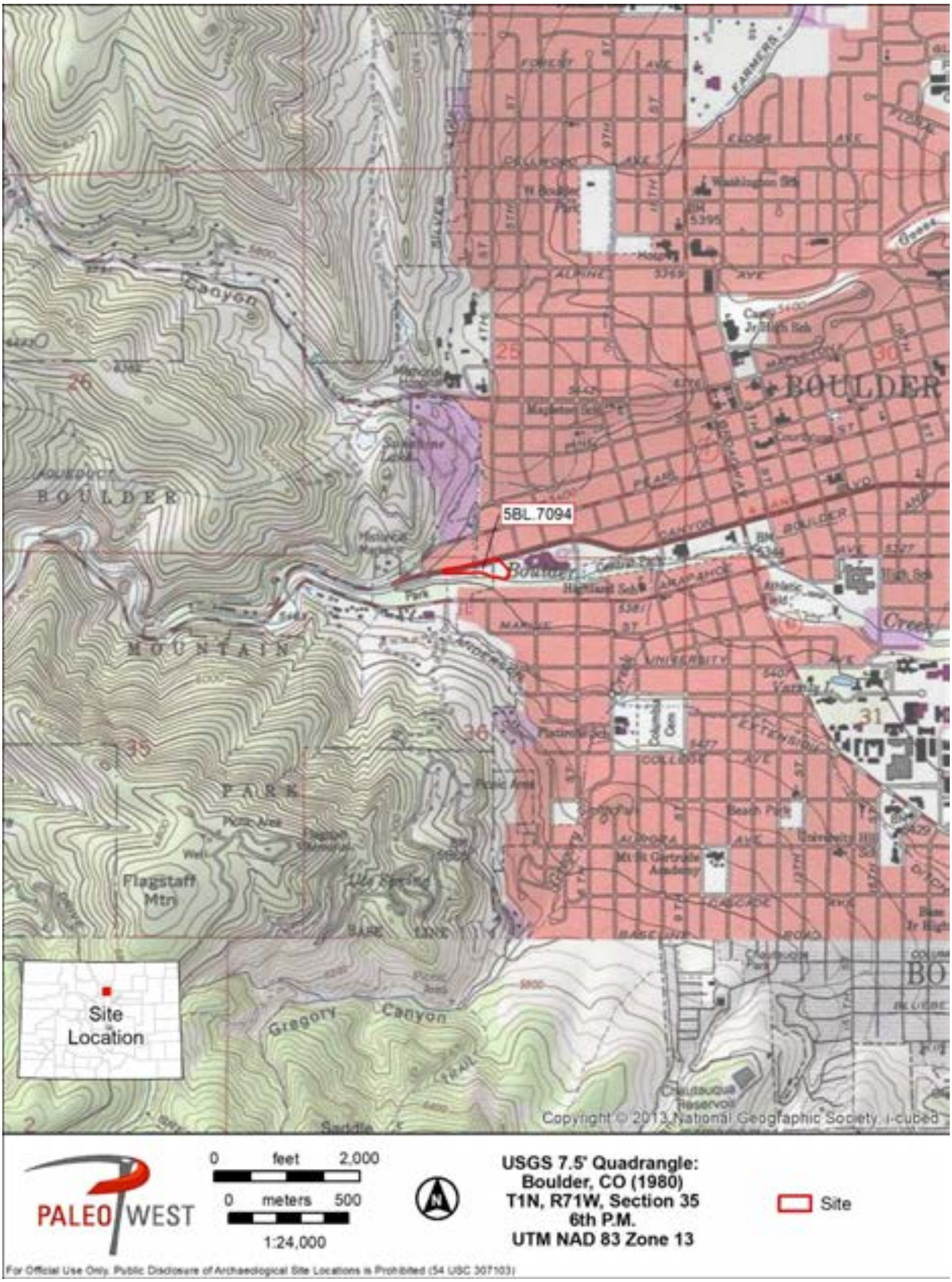

Figure 1. Location of site 5BL.7094.

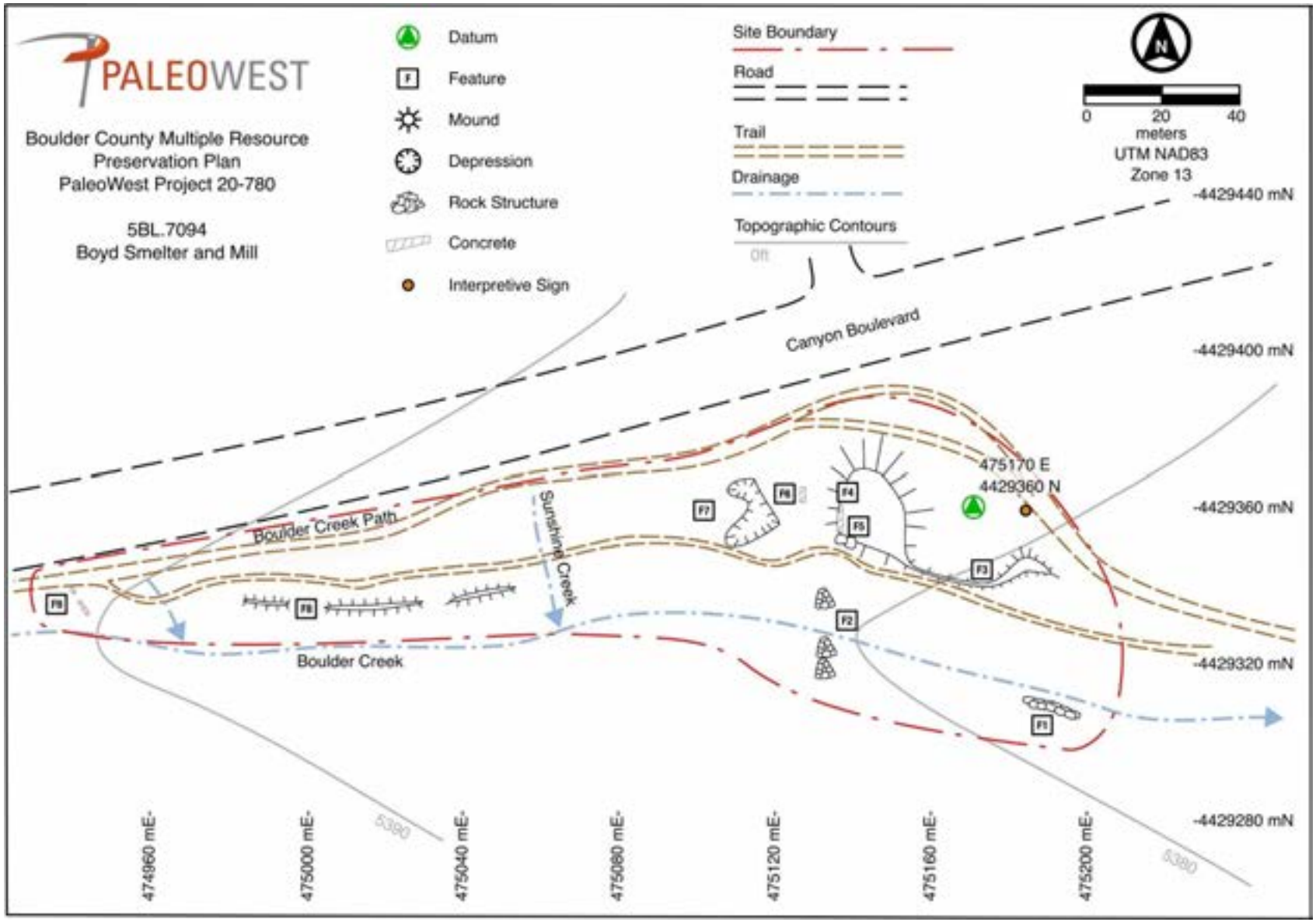

Figure 2. 5BL.7094, sketch map.

Figure 3. 5BL7094, overview from southeast end with Feature 1 on left, facing west. A. Cool, 12/10/2020.

Figure 4. 5BL7094, overview from northeast end, facing west. A. Cool, 12/10/2020.

Figure 5. 5BL7094, overview from west end, facing east. A. Cool, 12/10/2020.

Figure 6. 5BL7094, Feature 1, facing southwest. A. Cool, 12/10/2020.

Figure 7. 5BL7094, Feature 1, facing south. A. Cool, 12/10/2020.

Figure 8. 5BL7094, exposed rail and tie on north bank near Feature 1, facing north. A. Cool, 12/10/2020.

Figure 9. 5BL7094, Feature 2 north footing, facing northeast. A. Cool, 12/10/2020.

Figure 10. 5BL7094, Feature 2 north footing detail, facing northeast. A. Cool, 12/10/2020.

Figure 11. 5BL7094, Feature 2 north footing, facing southeast. A. Cool, 12/10/2020.

Figure 12. 5BL7094, Feature 2 north footing, facing southwest. A. Cool, 12/10/2020.

Figure 13. 5BL7094, Feature 2 north footing detail, facing southwest. A. Cool, 12/10/2020.

Figure 14. 5BL7094, Feature 2 north footing and girders, facing west. A. Cool, 12/10/2020.

Figure 15. 5BL7094, Feature 2 north footing and girders, facing southwest. A. Cool, 12/10/2020.

Figure 16. 5BL7094, Feature 2 north footing and girders, facing south. A. Cool, 12/10/2020.

Figure 17. 5BL7094, Feature 2 metal rod by girders, facing north. A. Cool, 12/10/2020.

Figure 18. 5BL7094, Feature 2 south footings, facing southwest. A. Cool, 1/14/2021.

Figure 19. 5BL7094, Feature 2 south footings, facing south. A. Cool, 12/10/2020.

Figure 20. 5BL7094, Feature 2 south footings, facing southeast. A. Cool, 1/14/2021.

Figure 21. 5BL7094, Feature 3 east mound, facing south. A. Cool, 12/10/2020.

Figure 22. 5BL7094, Feature 3 west mound, facing southwest. A. Cool, 12/10/2020.

Figure 23. 5BL7094, Feature 3, facing southeast. A. Cool, 12/10/2020.

Figure 24. 5BL7094, Feature 3 red brick, plan view. A. Cool, 12/10/2020.

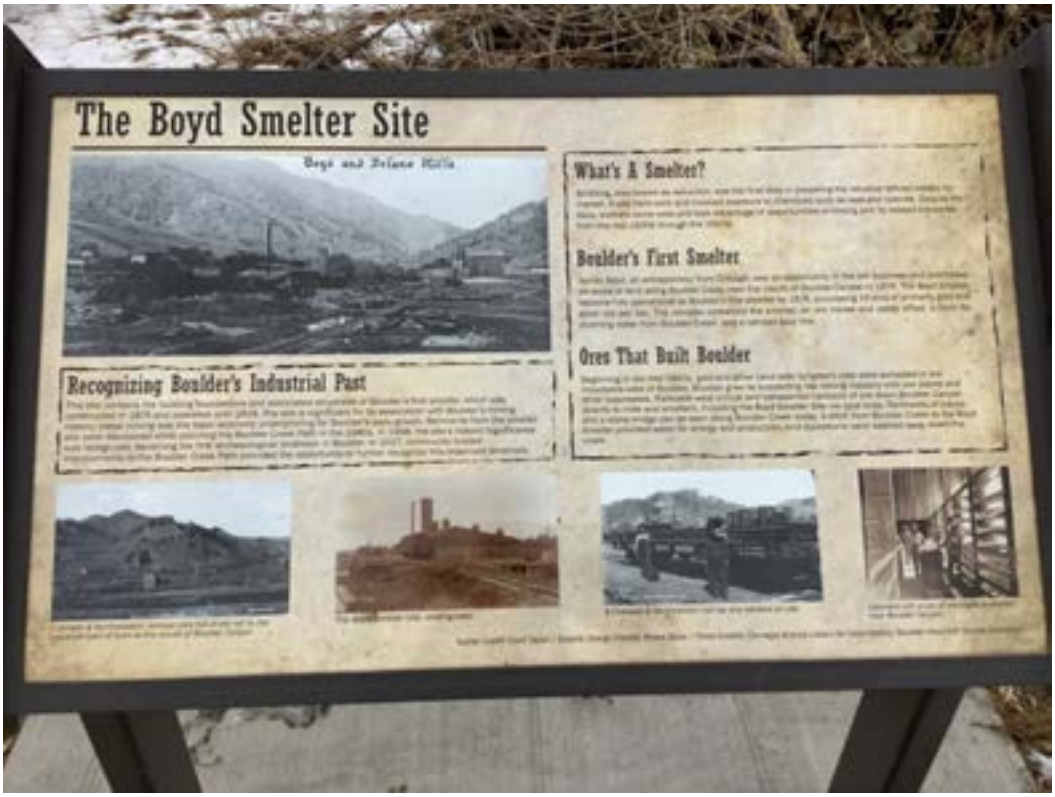

Figure 25. 5BL7094, interpretive sign near Feature 3, plan view. A. Cool, 12/10/2020.

Figure 26. 5BL7094, Feature 4 exposed wall, facing west. A. Cool, 12/10/2020.

Figure 27. 5BL7094, Feature 4 exposed wall, facing south. A. Cool, 12/10/2020.

Figure 28. 5BL7094, Feature 5 boulders, facing north. A. Cool, 12/10/2020.

Figure 29. 5BL7094, Feature 5, detail of loops on boulder, plan view. A. Cool, 12/10/2020.

Figure 30. 5BL7094, Feature 5, detail of plaque on boulder, plan view. A. Cool, 12/10/2020.

Figure 31. 5BL7094, Feature 6 (foreground) and Feature 7 (background), facing southwest. A. Cool, 12/10/2020.

Figure 32. 5BL7094, Feature 6 exposed concrete, in plan view. A. Cool, 12/10/2020.

Figure 33. 5BL7094, Feature 7 depression, facing west. A. Cool, 12/10/2020.

Figure 34. 5BL7094, former location of east retaining pond, including Feature 7, facing east. A. Cool, 12/10/2020.

Figure 35. 5BL7094, former location of west retaining pond, facing west. A. Cool, 12/10/2020.

Figure 36. 5BL7094, former location of west retaining pond, facing east. A. Cool, 12/10/2020.

Figure 37. 5BL7094, Feature 8, east segment, facing southwest. A. Cool, 1/14/2021.

Figure 38. 5BL7094, Feature 8, center segment, facing southeast. A. Cool, 1/14/2021.

Figure 39. 5BL7094, Feature 8, west segment, facing southeast. A. Cool, 1/14/2021.

Figure 40. 5BL7094, Feature 9, facing northeast. A. Cool, 12/10/2020.

Figure 41. 5BL7094, Feature 9, facing north. A. Cool, 12/10/2020.


Figure 42. 5BL7094, Feature 9, facing west. A. Cool, 12/10/2020.

Figure 43. 5BL7094, Feature 9 detail, facing northeast. A. Cool, 12/10/2020.

Figure 44. 5BL7094, Feature 9 detail, facing east. A. Cool, 12/10/2020.

Figure 45. 5BL7094, Feature 9 detail, facing northeast. A. Cool, 12/10/2020.