

ENCLOSURE

U. S. NUCLEAR REGULATORY COMMISSION
REGION IV

Docket No.: 040-01045

License No.: R-00203

License Active: June 6, 1957 - December 31, 1961

Report No.: 040-01045/96-01

Licensee: Lucky June Mining and Milling Co.

Location: 1430 Delgany Street
Denver, Colorado

Lost Creek Site
Sweetwater County, Wyoming

Mailing
Addresses: 465 South Logan
Denver, Colorado

701 South Logan
Ryan Building, Room 111
Denver, Colorado

608 (and later 201) Union National Bank Building
104 Broadway
Denver, Colorado

Inspection Dates: March 17, 1995 (Denver, Colorado)
July 30, 1996 (Sweetwater County, Wyoming)

Inspectors: Robert J. Evans, P.E., Health Physicist
William H. Radcliffe, Radiation Specialist

Accompanied By: Charles E. Mattson, Senior Health Physicist
(at Denver site) Radioactive Materials Section
Radiation Control Division
Colorado Department of Health

Approved By: Charles L. Cain, Acting Deputy Director
Division of Nuclear Materials Safety

Attachments:

Attachment 1: Partial List of Persons Contacted
List of Acronyms

Attachment 2: Photographs Taken at the Lucky June Mining and
Milling Company Sites

Report Details

1 Oak Ridge National Laboratory Review of the License

At the request of the NRC, the Oak Ridge National Laboratory (ORNL) performed a review of over 16,000 NRC and Atomic Energy Commission (AEC) terminated licenses. ORNL assigned numerical scores to the former licensees, based on the potential for residual radioactive contamination and availability of materials disposition documentation in the retired docket files. Several former licensees in the States of Wyoming and Colorado received numerical scores from ORNL which put the licenses in a category requiring prompt review by the Region IV staff.

Several concerns were identified during the ORNL review of the docket file:

- There was possible inappropriate disposal or abandonment of contaminated waste material in the site operation.
- There was no documentation of materials disposition.
- There was no closeout survey or AEC final inspection of the site.

2 Background Information

The Brown's Park Mining Company, Limited (BPMC), was issued AEC License P-3544 on April 5, 1957, for possession of source material. This company's base of operations was listed as Boulder, Colorado, with mining properties located in Moffat County, Colorado. Several days after BPMC's license was issued, the company requested a revision to the license. BPMC desired AEC authorization to chemically process source material on site property. In their letter dated April 11, 1957, BPMC mentioned that Lucky June Mining and Milling Company (Lucky June) of Denver had developed a chemical process that BPMC had investigated and was interested in pursuing. License R-201 was subsequently issued to BPMC on May 16, 1957, allowing them to chemically process source material. (License R-201 superseded License P-3544.) License R-201 apparently expired on June 1, 1958, without being renewed.

Included in the BPMC docket file was a brochure from Lucky June dated April 1957. The brochure claimed that a pilot plant had been built by Lucky June at 1430 Delgany Street in Denver. The 2 ton-per-hour capacity pilot plant utilized the chemical leach process and had been in operation since October 1956. The BPMC Docket File 040-00721 is currently on the NRC's open terminated site list. Although the Denver portion of the file is closed, the mining claims in Moffat County have not been located to date.

On May 16, 1957, the AEC sent a letter to Lucky June informing them that a source material license was required for them to operate a pilot plant in Denver. In response to the AEC letter, Lucky June submitted an application to the AEC on May 21, 1957, for a source material license. In the application package, Lucky June stated that they planned to build a 200-ton capacity (it was not clear if the capacity was per day or per hour) plant in the Red Desert area near Wamsutter, Wyoming. Also, Lucky June noted that they had about 11.5 tons of source material (including uranium-bearing lignite, carnotite, and schroeckingerite) and 12-13 pounds of refined U_3O_8 material on hand at that time. Source Material License R-203 was issued to Lucky June on June 6, 1957, for possession and processing of source material at the Denver location.

In a letter dated September 22, 1958, Lucky June informed the AEC that operations at the Denver pilot plant had been discontinued, and an experimental uranium extraction facility had been constructed on leased property adjacent to Lost Creek in Sweetwater County, Wyoming. The licensee claimed that the plant was an in-situ leach facility. The licensee also stated that the Union Carbide facility in Maybell, Colorado, would purchase all concentrates that the Lost Creek facility produced. In response to the licensee's letter, the AEC issued an amended License R-203 to Lucky June on October 1, 1958. The renewed license included the Wyoming facility but excluded the Denver facility.

In a status update letter to the AEC dated October 28, 1958, Lucky June stated that the facility in Wyoming had been in operation for about 2 months and roughly 50 pounds of U_3O_8 material was in their possession. Also, the entire facility had been established out in the open and no building surrounded the plant. Finally, the most dangerous hazard present at the site was the possession of sulfuric acid which was used in the leaching solution. At that time, the AEC had some concerns with the licensee's process of injecting sulfuric acid into the ground and planned to inform the State of Wyoming health authorities about the licensee's activities. (The docket file did not provide sufficient information to determine if the AEC had actually informed the State about the licensee's in-situ activities.)

An initial AEC inspection was performed during April-May 1960 at Lucky June. According to information provided in the inspection report, Lucky June had not transferred source material offsite at the time of the inspection. The licensee was shut down at that time and was awaiting favorable weather conditions prior to resuming operations. Also, the licensee planned to sell all recovered uranium product to the Trace Elements Corporation of Maybell, Colorado. In addition, the report stated that some of the plant's ion exchange resin had been sold to the Western Nuclear Corporation of Rawlins, Wyoming, in early 1960. Finally, the AEC inspector noted in an internal memorandum that the company had significant financial problems that could adversely affect plant operations.

On December 12, 1961, the licensee requested renewal of License R-203. In a letter dated January 22, 1962, the AEC requested additional information from the licensee prior to the renewal of the license. The licensee did not respond to the AEC request in a timely manner; therefore, License R-203 apparently expired on December 31, 1961, without being renewed.

The licensee submitted an application to the AEC on December 15, 1962, for a new source material license. In this application, the licensee claimed that no source material was in their possession at that time. The AEC requested that Lucky June resubmit the application with the additional information previously requested by the AEC in their letter dated January 22, 1962. On February 20, 1963, the licensee submitted a revised application to the AEC. Within this application package, the licensee provided information related to a millsite and a tailings pile. Also, a map was attached to the application that clearly marked the location of the proposed mill and tailings pile within Sweetwater County. (Based on the limited information provided in the docket file it was not clear if the tailings pile actually existed or was planned for that location, and it was not clear if the proposed millsite was at the same location as the previous in-situ millsite.)

In a letter dated March 1, 1963, the AEC noted that the (former) licensee's proposed operations had expanded in scope since the original application, and that the AEC required additional information prior to issuance of a license to Lucky June. No additional information was provided in the docket file suggesting that the licensee failed to respond to the request; therefore, the license was not renewed or reissued to Lucky June.

Trace Elements built and operated the Maybell mill in the late 1950's. Union Carbide purchased the mill around 1960. Union Carbide also installed a heap leach pile near the Maybell mill in the 1970's. The Maybell mill site is now a Department of Energy Title I site. The heap leach pile is now a Title II site under the jurisdiction of the State of Colorado.

3 State of Colorado and Wyoming Records Review

The State of Colorado archive files were reviewed for any relevant information available about Lucky June. State records indicate that Lucky June filed for incorporation in Colorado on October 13, 1955. The incorporation was subsequently withdrawn by the State on October 19, 1964.

The County of Sweetwater (Wyoming) records were reviewed for any information related to Lucky June's mining operations. Records were identified that indicated that Lucky June had held multiple mining claims under the name of Golden Arrow mines. These claims were located in Townships 25 and 26 North (T25N and T26N) and Ranges 94 and 95 West (R94W and R95W) in Sweetwater County. Lucky June was not listed in Wyoming's state incorporation records.

4 Site Visits

On March 17, 1995, the Lucky June Mining and Milling Company's pilot plant in Denver was visited as part of the NRC's review of the Browns Park Mining Company docket file. The site was visited by an NRC inspector and a Senior Health Physicist from the Radiation Control Division of the Colorado Department of Health. The building at 1430 Delgany Street was a short, red, rectangular building located on the outskirts of downtown Denver. The interior of the building had been recently remodeled and was the home office of a general contractor (Newell Industries). The building was radiologically surveyed inside and out using a Ludlum Model 19 Microroentgen meter. No radioactivity was identified inside or outside of the building although concrete covered much of the ground surface around the building. No evidence of uranium milling activities was identified at this site.

The 465 South Logan Street location was reputed to have been the home of the Lucky June company president. In addition, the Union National Bank and Ryan Buildings were the company president's business offices. The possession of source material at these locations was considered unlikely; therefore, these sites were not visited.

The Lost Creek site was visited by two NRC inspectors on July 30, 1996. Attached to the license renewal application dated February 20, 1963, was a map of the proposed Lost Creek mill site. According to the map, the site was reputed to have been located in Section 31 of T26N and R94W (southeast of the intersection of Sweetwater County Roads 3217 and 3212), about 40 miles north of Wamsutter, Wyoming. The inspectors did not locate any standing structures on the site property. Only one structure, the abandoned Hadsell Cabin, was located within a several mile radius of the site.

Evidence of surface mining activities were identified in the area of the proposed mill site. These mining activities included open pits and excavated trenches. However, the tailings pile was not located. The general area was scanned for radioactivity using Ludlum Model 19 and Victoreen Model 190 Microroentgen meters. With a background of 15-20 microroentgen per hour, the highest exposure rate reading was noted to be 55 microroentgen per hour on one pile of dirt. The elevated readings were attributed to naturally occurring radioactive materials. Soil samples were not obtained because no man-made radioactive materials were identified. Finally, several drilled holes were identified in the area. These holes may or may not have been utilized during previous in-situ operations.

5 Regional Recommendations

The removal of this license from the open ORNL formerly-licensed site list is recommended. Although there was documentation which clearly indicated that milling activities had been performed by the former licensee in both Colorado and Wyoming, residual radioactive contamination was not identified at either site. In addition, there was no clear evidence of the existence of tailings material at the Wyoming site. (Tailings material would be subject to NRC regulations but surface mining activities would not.)

In addition, the docket file did not provide clear information as to which organization (Union Carbide, Trace Elements, or some other unspecified company) purchased the refined source material. Therefore, the disposition of the refined source material could not be accounted for. However, if the material had been purchased by Trace Elements or Union Carbide, then the material became the property and the responsibility of an AEC-regulated facility.

Attachment 1

PARTIAL LIST OF PERSONS CONTACTED

Colorado Department of Health

Charles E. Mattson, Senior Health Physicist, Radioactive Materials Section
Radiation Control Division

LIST OF ACRONYMS USED

AEC	Atomic Energy Commission
BPMC	Brown's Park Mining Company
ORISE	Oak Ridge Institute for Science and Education

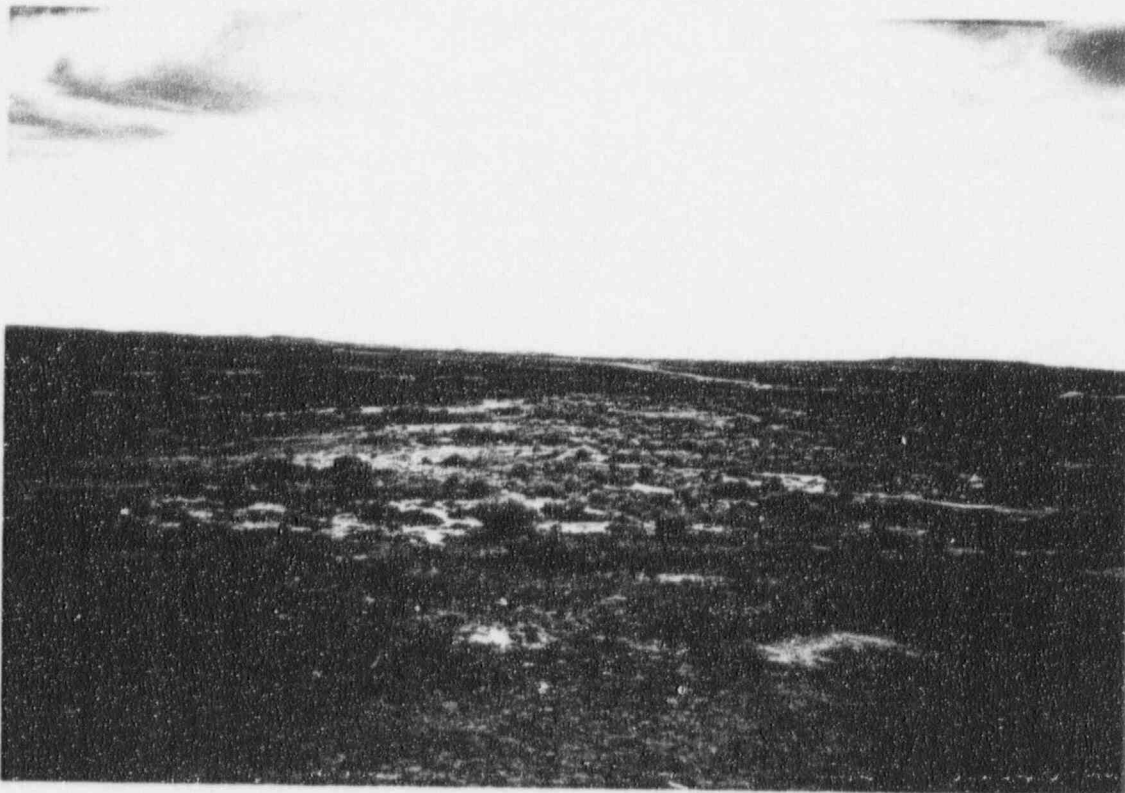
PHOTOGRAPHS TAKEN AT THE LUCKY JUNE MINING AND MILLING COMPANY SITES



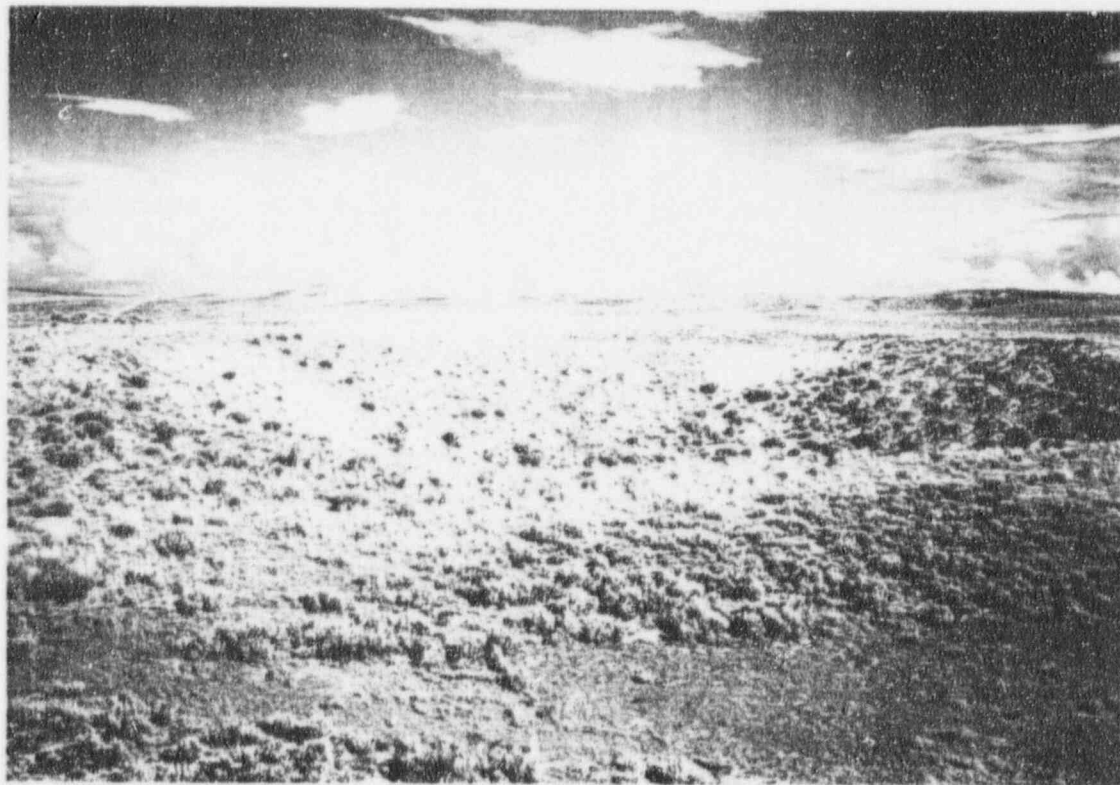
Photograph 1 - 1430 Delgany Street facility in Denver.



Photograph 2 - 1430 Delgany Street facility in Denver.



Photograph 3 - Lost Creek area; Lucky June's mill and tailings pile were reputed to have been located in this area.



Photograph 4 - Evidence of surface mining in the Lost Creek area; an open pit mine.



Photograph 5 - Evidence of surface mining in Lost Creek area; open trenches.