



COLORADO DEPARTMENT OF HEALTH
Division or Section of Water Quality Control Division

INTER-OFFICE COMMUNICATION

TO : Fred Matter

ADMINISTRATIVE
RECORD

DATE : July 31, 1975

FROM: Joe Virgona

SUBJECT: Cotter Corporation
Chronological Report

Attached is a chronological report on Cotter Corporation in Canon City compiled by Bill Heller and myself.

Boyd Hanzon and I have tentatively scheduled a site inspection for the middle of August.

FILE PLAN

1 7.5

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ADMINISTRATIVE RECORD

COTTER

JEV:gc

cc Mr. Burt Crist - Rad Health
Mr. Boyd Hanzon, D. E.
Mr. Bill Heller, D.E.

Joseph E. Virgona,
Industrial Waste Consultant
Technical Services & Grants
Section

Joseph E. Virgona
Signature

8-14-75

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ADMINISTRATIVE RECORD

COT001

7/3/76

April 26, 1968 - Letter from Larry Wagner (Extension Agent, C.S.U.) to Art Graber (State Sanitarian) mentions "toxic well water" from the Dominic Bosco Well being given to livestock and bad alfalfa which was irrigated with the water. Sometime during the previous year Dominic Bosco began using city water for livestock.

July 3, 1968 - Letter from George Prince to Mrs. Dominic Bosco stated that both house and stock wells were contaminated. Refers to high selenium (Se) content (0.05 mg/l in dug well and 0.026 mg/l in house well), high radioactivity, and high molybdenum. The alfalfa contained 200 ppm molybdenum.

July 10, 1968 - Earl Balkum made industrial waste survey and stated ponds #'s 4 & 5 were in good natural clay material and looked as though they were naturally lined.

August 5, 1968 - Earl Balkum stated there was molybdenum in the creek below Cotter's pond (5.0 ppm).

September 15, 1970 - Earl Balkum referenced odors from the plant as being caused by hydrogen sulfide.

October 13, 1970 - Earl Balkum referenced discharges of 50-75 gpm caused because recycling pump was not working. Water went about 1/2 mile before completely soaking into creek bed. On November 10, 1970, Earl stated this discharge was "very potent".

January 21, 1971 - Ed Pugsley documented that Earl Balkum had seen pond #3 discharging and/or evidence of this in the stream some distance below #3. This water had shown high TDS, Na, Mo, SO₄, SAl, and high radiation.

Ed also noted that Cotter Corporation intended to go to total evaporation, and recommended the ponds be sealed to protect groundwater. He also recommended that pond #3 be left empty as a safety measure. (This was a letter to Cotter Corporation).

February 26, 1971 - Letter from Cotter to Pugsley (signed by Warren Goff) stated #3 would have 5' freeboard to provide 6 x 10⁶ gallon emergency storage.

March 11, 1971 - In an activity report by E.B. Pugsley, it is stated that, according to the Chief Geologist of Clinax (Now AMAX, Inc.) there are no known significant deposits of molybdenum in the Canon City area. Mr. Pugsley also stated there was evidence of leaching, from the ponds to groundwater. He also recommended the following:

1. Seal, with a membrane, Ponds 2, 3, 4, 5, 7, 8, 9
2. Empty #'s 2 & 3, leaving room for emergency spills.
3. Install sump, and pump at low point below #1 to 8 or 9.

4. Install sump, and pump at low point below #6 to 8 or 9.
5. Cotter, with our staff, should promptly initiate a sampling program to try to determine whether or not ground and surface waters are being contaminated.

March 12, 1971 - Letter from Pugsley to Cotter Re: February 26, 1971.

Letter reiterated lining of ponds, asked for flow figures and design details.

May 5, 1971 - Letter from Pugsley to Cotter

Requested an answer to March 12, 1971 letter (see above) and requested meeting May 17, 1971, at which time Cotter would present information.

May 18, 1971 - Pugsley to Cotter Re: Letter May 5 and meeting May 17th.
Proposed following minimum changes:

1. Line ponds 4, 5, 7, 8, and 9.
2. Empty #'s 2 & 3, leaving #3 as emergency pond.
3. Construct a smaller #2, and line it and use to catch seepage from #1.
4. Reroute surface drainage from mill area to #1 if hydraulically feasible, to #2 if not.
5. Pump water from #2 to either #1 or to 8 or 9.
6. Decant water from either #'s 1 or 6 to either 8 or 9.

Stated that groundwater was probably contaminated, and that sealing evaporation ponds would help prevent further contamination. Also, some contamination would probably continue from tailings ponds #'s 1 & 6, but that silting had probably pretty well sealed them.

Requested a schedule that Cotter would follow in carrying out desired changes, and requested completion by no later than December 31, 1971.

June 3, 1971 - P.W. Jacob (Occupational and Radiological Health) to Cotter stated they agreed with Pugsley's May 18 letter.

June 18, 1971 - Cotter to Pugsley

Proposed the following changes:

1. Construct an inline pond # 10 (need area to replace lost of #'s 2 & 3).

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2. Empty ponds #'s 4, 5, 7, 8, and 9 into 10, and line.
3. Empty #'s 2 & 3, leaving 3 as emergency catch basin.
4. Extend dam on #2 further south and line.
5. Decant water from #1 to 8 or 9 with overflow going to lower ponds.

#2 will collect surface drainage from 12 acres in the mill area.

* The remainder of this letter is not in our files.

July 26, 1971 - Betz Environmental Engineers to Pugsley

Page 2, Para. 2 "A percentage of those wastewaters, though, was recognized as being removed by groundwater infiltration."

August 27, 1971

Betz Environmental Engineers to Pugsley said # 2 would be enlarged and lined with 20 mil PVC liner. The west side of the levee between #'s 2 and 1 would have bentonite layer applied or some other material. Also agreed to drill the two test holes. Letter said nothing about lining other ponds.

January 5, 1972 - Cotter to Pugsley (actually letter was dated '71, but this was obviously a mistake.)
Letter was written to appraise us of progress.

1. Tailings discharge was diverted to upper end of #6 where excess water is pumped via sprinkler to #4.
2. Ponds 7, 8, 1, and lower end of 6 were drained.
3. Sprinkler systems installed at northwest portion of #1 to increase evaporation and prevent dusting.
4. Two wells were drilled.
5. Cleaning of #2 was started, but not completed.
6. 20 mil vinyl liner was ordered for #2.

May 16, 1972 - Cotter to Pugsley

Update on above mentioned progress report.

April 9, 1974 - Activity report by Dick Bowman stated overflow from # 1 was sent to #4.

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July 8, 1974 - Activity report by Bowman stated no evidence of any discharge to Sand Creek.

*December 11, 12, and 13, 1974 - Inspection by Bert Crist and R. Gamewell

•General: Employ 75 people.

Monthly water samples taken at wells # 1 & # 2, Sand Creek Dam, point on Arkansas River at Grape Creek, Four Mile Bridge on Arkansas, and Boughton Well. Analyzed for U natural by Spill method. Sampling from Wolf Park Mine ceased May '73 because of cave-in of mine walls and timbers.

*February 25, 1975 - Phone conversation with Fred Matter about radium of 7.5 pCi/l at Four Mile bridge on the Arkansas River below Canon City.

March 14, 1975 - Site visit by Joe Virgona and Bill Heller.

#2 still the only lined pond, flow from #1 to #2, evidence of discharge from #3 (Potash on ground in low levels below #3).

•amples taken from the Dominic Bosco Field and house wells contained 32 mg/l and 28 mg/l of molybdenum, respectively. Since there are no other significant molybdenum deposits in the Canon City Area (see March 11, 1971 Amax Chief Geologist) except at the Cotter Corporation mill, it appears as if the source of the molybdenum is the mill.

April 29, 1975 - Meeting with Miles Fixman - Cotter Corporation, Burt Crist and Jim Montgomery - Rad. Health, and Joe Virgona. Advised by Miles Fixman that Cotter Corporation was purchased by Commonwealth Edison of Illinois, and that the mill would be rebuilt at the present site. The plant has become obsolete (built in 50's), and the process and equipment will be modified. The process will be changed from basic to acid extraction, and the amount of ore processed will be increased from 250 T/day to 500 T/day. Miles Fixman also stated that the company will line the ponds if it is necessary to prevent water pollution. Construction is scheduled to begin in 1976 and will take approximately two years.

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*Radiological Health Files

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